RISTEKDIKTI

Panduan Penyusunan Proposal

PROGRAM PEMBINAAN PERGURUAN TINGGI SWASTA (PP-PTS)

Tahun Anggaran 2019

**DIREKTORAT JENDERAL KELEMBAGAAN, ILMU PENGETAHUAN, TEKNOLOGI DAN PENDIDIKAN TINGGI
KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI**

KATA PENGANTAR

Direktorat Jenderal Kelembagaan, Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi (Ditjen Kelembagaan IPTEK dan DIKTI) Kementerian Riset, Teknologi dan Pendidikan Tinggi dalam mendukung upaya meningkatkan daya saing bangsa melalui peningkatan kualitas pendidikan tinggi telah mengupayakan berbagai inisiatif dan program. Inisiatif dan program dimaksud tidak hanya ditujukan bagi Perguruan Tinggi Negeri (PTN), tetapi juga bagi Perguruan Tinggi Swasta (PTS). Keberadaan PTS salah satunya adalah membantu upaya peningkatan akses serta menaikkan Angka Partisipasi Kasar (APK) pendidikan tinggi. Kontribusi PTS tersebut masih perlu ditingkatkan menuju perbaikan kualitas yang lebih baik. Salah satu program yang khusus ditargetkan bagi PTS adalah Program Pembinaan Perguruan Tinggi Swasta (PP-PTS). Salah satu program yang khusus ditargetkan bagi PTS adalah Program Pembinaan Perguruan Tinggi Swasta (PP-PTS). PP-PTS berupa program bantuan pengembangan institusi yang bertujuan untuk meningkatkan kinerja Perguruan Tinggi Swasta (PTS)

Sejak tahun 2016 Ditjen Kelembagan IPTEK dan DIKTI merupakan pelaksana pengadaan dan penyerahan barang kepada Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi (Yayasan/Perserikatan/Perkumpulan) untuk dimanfaatkan oleh PTS dalam rangka meningkatkan kualitas pembelajaran. Dalam jangka panjang, PP-PTS diharapkan akan membantu pengembangan kualitas PTS dan akan mendorong setiap institusi untuk menyusun rencana program pengembangan untuk peningkatan kualitas PTS berdasarkan pada analisis kebutuhan yang didukung informasi yang akurat, mengacu ke masa depan, dengan memberdayakan setiap jurusan/program studi beserta sumberdayanya sebagai upaya menuju PTS yang lebih sehat.

Pada tahun 2019, PP-PTS dikelompokkan menjadi 3 (tiga) skema, yaitu Skema A, B dan C. PP-PTS Skema A bertujuan untuk peningkatan mutu pembelajaran melalui bantuan sarana/prasarana pendidikan dan/atau pembangunan gedung kuliah dan/atau laboratorium. Dengan demikian melalui PP-PTS Skema A ini mutu pembelajaran PTS dapat terus ditingkatkan.

Kami mengharapkan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi untuk berpartisipasi aktif dalam PP-PTS ini. Kami juga menyampaikan terima kasih dan penghargaan kepada tim yang telah menyusun dan merumuskan panduan penyusunan proposal ini dengan memperhatikan dan mempertimbangkan kendala-kendala dan temuan-temuan pada implementasi tahun-tahun sebelumnya serta masukan dari pemangku kebijakan terkait.

Jakarta, Oktober 2018
DirekturJenderal Kelembagaan,Ilmu
Pengetahuan, Teknologi, dan Pendidikan Tinggi
Kementerian Riset, Teknologi dan Pendidikan
Tinggi

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DAFTAR ISI

I. LATAR BELAKANG

Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional, pada Pasal 11 menyatakan bahwa pemerintah dan pemerintah daerah wajib memberikan pelayanan dan kemudahan serta menjamin terselenggaranya pendidikan yang bermutu bagi setiap warga tanpa diskriminasi. Undang-Undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi pada pasal 6 butir j menyatakan bahwa pendidikan tinggi diselenggarakan dengan prinsip pemberdayaan semua komponen Masyarakat melalui peran serta dalam penyelenggaraan dan pengendalian mutu layanan Pendidikan Tinggi Direktorat Jenderal Kelembagaan Iptek dan Dikti Kementerian Riset, Teknologi dan Pendidikan Tinggi (Kemenristekdikti) sesuai Peraturan Menteri Riset Teknologi dan Pendidikan Tinggi No. 15 Tahun 2015 tentang Organisasi dan Tata Kelola Kemenristekdikti, mempunyai tugas melakukan pembinaan Kelembagaan Perguruan Tinggi. Data PD-Dikti per-Agustus 2018, terdapat 3.256 institusi pendidikan tinggi dibawah Kemristekdikti yang berbentuk Universitas, Institut, Sekolah Tinggi, Politeknik, dan Akademi, baik yang diselenggarakan oleh Pemerintah maupun oleh masyarakat. Dalam rangka peningkatan kapasitas institusi, pada tahun 2016 Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi memberikan bantuan Program Pembinaan Perguruan Tinggi Swasta (PP-PTS) yang diberikan kepada PTS di seluruh Indonesia melalui Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. PP-PTS berupa program bantuan pengembangan institusi yang bertujuan untuk meningkatkan kinerja Perguruan Tinggi Swasta (PTS).

Pada tahun 2019, PP-PTS dikelompokkan menjadi 3 (tiga) skema, yaitu Skema A, B dan C. PP-PTS Skema A bertujuan untuk peningkatan mutu pembelajaran melalui bantuan sarana/prasarana pendidikan dan/atau pembangunan gedung kuliah dan/atau laboratorium. Dengan demikian melalui PP-PTS Skema A ini mutu pembelajaran PTS dapat terus ditingkatkan. Panduan ini menjelaskan lebih lanjut tentang Skema A. Program pembinaan ini diberikan berdasarkan pada evaluasi proposal atas rencana dan kebutuhan masing-masing PTS. Proposal diusulkan oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi untuk peningkatan kualitas pembelajaran berdasarkan pada analisis kebutuhan yang didukung informasi yang akurat, mengacu ke masa depan, dengan memberdayakan setiap jurusan/program studi beserta sumberdayanya sebagai upaya menuju PTS yang lebih sehat.

Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi (Ditjen Kelembagaan IPTEK dan DIKTI) berperan sebagai penanggung jawab dan pelaksana PP-PTS. Ditjen Kelembagaan IPTEK dan Dikti melakukan seleksi proposal untuk memberikan bantuan kepada Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi berupa barang dan/atau pembangunan gedung untuk dimanfaatkan oleh PTS penerima.

II. TUJUAN UMUM DAN DESKRIPSI PROGRAM

A. Tujuan Umum Program

PP-PTS Skema A Tahun 2019 merupakan program bantuan sarana dan prasarana untuk pengembangan institusi yang ditujukan untuk meningkatkan mutu pembelajaran melalui perbaikan proses pembelajaran, sehingga dapat meningkatkan kinerja perguruan tinggi swasta.

B. Sasaran

Perguruan Tinggi Swasta di bawah binaan Kementerian Riset, Teknologi dan Pendidikan Tinggi yang memenuhi persyaratan yang ditentukan oleh Kementerian Riset, Teknologi dan Pendidikan Tinggi. Perguruan tinggi swasta yang dapat menerima bantuan ini adalah PTS yang berada pada kluster 4 atau 5 sesuai Surat Keputusan Direktur Jenderal Kelembagaan, Ilmu Pengetahuan, Teknologi dan Pendidikan Tinggi, Kementerian Riset, Teknologi dan Pendidikan Tinggi **No. 2217/C/KEP/VIII/2018** untuk PT yang berbentuk Universitas, Institut, atau Sekolah Tinggi dan **No. 2189/C/KEP/VIII/2017** untuk PT yang berbentuk Politeknik atau Akademi, dan perguruan tinggi swasta yang terdata pada PD-Dikti dan belum dikelompokkan dalam kluster.

C. Deskripsi Program

Program Pembinaan PTS (PP-PTS) 2019 bersifat bantuan dan merupakan salah satu program pada Ditjen Kelembagaan IPTEK dan DIKTI Kementerian Riset, Teknologi dan Pendidikan Tinggi. Program PP-PTS mencakup semua PTS yang memenuhi persyaratan yang ditentukan oleh Kementerian Riset, Teknologi dan Pendidikan Tinggi. Pada PP-PTS Skema A 2019, pengusul proposal adalah Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. Seleksi dan pelaksanaan kegiatan PP-PTS dilakukan oleh Ditjen Kelembagaan IPTEK dan DIKTI.

Ditjen Kelembagan IPTEK dan DIKTI merupakan pelaksana pengadaan dan penyerahan barang kepada Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi untuk dimanfaatkan oleh PTS yang diusulkan dalam proposalnya. Pembangunan gedung baru akan dilakukan oleh pihak ketiga berdasarkan kontrak antara Ditjen Kelembagaan IPTEK dan DIKTI dengan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi sesuai dengan peraturan yang berlaku. Pemantauan dan evaluasi akan dilakukan oleh Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi dengan melibatkan pihak Inspektorat Jenderal Kementerian Riset, Teknologi dan Pendidikan Tinggi. Pengalokasian anggaran untuk setiap PTS akan dilakukan oleh Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi.

Program ini bertujuan memfasilitasi dan mendorong perguruan tinggi swasta untuk meningkatkan mutu pembelajaran. Secara khusus PP-PTS Skema A ditujukan untuk peningkatan mutu pembelajaran melalui pemanfaatan sumber daya secara hemat dan bertanggung-jawab. Beberapa peningkatan yang diharapkan adalah peningkatan kualitas proses akademik melalui penyelesaian program akademik yang tepat waktu, masa studi yang sesuai dengan kurikulum, pengurangan jumlah drop-out, atmosfer akademik yang kondusif terutama interaksi dosen dan mahasiswa, optimalisasi pemanfaatan sumberdaya, baik yang menyangkut sumberdaya manusia, rasio dosen mahasiswa, sumberdaya fisik (tingkat utilisasi ruangan dan peralatan), sumberdaya uang (penekanan unit cost), dan sebagainya.

III. BESARAN DANA PP-PTS

Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi mengajukan proposal sesuai dengan **kebutuhan, kapasitas** dan **kondisi** PTS yang **didasarkan pada rencana pengembangan PTS**. Untuk **PP-PTS** ini, **satu proposal hanya berisi usulan untuk satu PTS.** Anggaran yang diajukan dalam proposal <u>harus</u> didasari pertimbangan yang kuat serta mencerminkan **kebutuhan** dan **kemampuan** institusi untuk mengelolanya dengan penuh tanggung jawab.

A. Pagu Dana

Besarnya <u>pagu dana maksimum</u> PP-PTS Skema A ditetapkan berdasarkan bentuk PT, sebagai berikut:

1. Universitas   : Rp. 1 miliar
2. Institut   : Rp. 1 miliar
3. Politeknik   : Rp. 900 juta
4. Sekolah Tinggi : Rp. 750 juta
5. Akademi   : Rp. 600 juta

B. Penggunaan Dana

Bantuan PP-PTS Skema A 2019 diberikan dalam bentuk: 1) Barang yang berupa peralatan pendidikan, peralatan laboratorium, dan 2) pembangunan gedung baru yang terkait dengan peningkatan kualitas proses pembelajaran. Anggaran yang diajukan dalam proposal <u>harus</u> didasari pertimbangan yang kuat serta mencerminkan **kebutuhan** dan **kemampuan** institusi untuk mengelolanya dengan penuh tanggung jawab.

1. Bantuan PP-PTS dalam bentuk barang

Usulan belanja barang harus memenuhi ketentuan sebagai berikut:
a. Barang yang diusulkan hanya barang yang tersedia dalam daftar barang yang disajikan dalam **Lampiran C** pada Panduan Penyusunan Proposal ini;
b. Usulan pengadaan barang harus dilengkapi dengan rincian barang, jumlah unit, Rencana Anggaran Biaya (RAB), dan spesifikasi teknis;
c. RAB harus disusun berdasarkan harga pasar yang dapat dipertanggungjawabkan, dilengkapi data dukung dan brosur;
d. Usulan disusun sesuai dengan paket masing-masing.
e. PTS yang diusulkan oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi harus memiliki fasilitas pendukung yang memadai dan layak untuk pemanfaatan barang yang akan diterima, diantaranya ruang, daya listrik dan lainnya;
f. Barang yang diusulkan harus sesuai dengan rencana kegiatan belajar mengajar sesuai dengan program pengembangan yang disampaikan pada proposal.
g. Barang yang dapat diusulkan terdiri dari:

   I. Peralatan laboratorium dasar bersama: dapat mencakup Laboratorium Dasar IPA, Laboratorium Kesehatan Dasar, Laboratorium Teknik Dasar, Laboratorium Desain Dasar, Laboratorium *Microteaching*, dan Laboratorium Bahasa. Usulan barang harus relevan dengan pembelajaran pada prodi yang akan ditingkatkan mutunya dan **bukan** untuk mendukung proses pembelajaran magister, doktor, Profesi dan/atau penelitian dosen;
   II. Peralatan pendidikan dan TIK: relevan dengan peningkatan mutu proses belajar mengajar;

2. Pembangunan Gedung Baru

Bantuan PP-PTS Skema A dapat digunakan untuk membangun gedung baru yang terkait dengan peningkatan kualitas pembelajaran, berupa ruang kelas dan/atau ruang laboratorium. Pelaksanaan pembangunan gedung baru, harus mengikuti

ketentuan berikut:

a. Gedung/Bangunan yang akan dibangun dengan dana bantuan PP-PTS harus terletak di atas lahan milik Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi yang telah bersertifikat dan/atau didukung dokumen sah yang setara pada wilayah tertentu;

b. Pembangunan gedung baru hanya boleh untuk pembangunan ruang kelas dan atau laboratorium pada PTS yang diusulkan;

c. Usulan pembangunan gedung harus dilengkapi dengan dokumen perencanaan, spesifikasi, RAB dan rencana jadwal pelaksanaan;

d. Pembangunan gedung harus dilengkapi Ijin Mendirikan Bangunan (IMB) dan biayanya dibebankan pada Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi;

e. Pembangunan gedung dalam pelaksanaannya agar efektif dan efisien harus dibentuk tim pengelola pembangunan gedung yang sekurang-kurangnya terdiri dari 3 orang yang masing-masing mempunyai tanggung jawab dan wewenang untuk menguji tagihan, untuk memerintahkan pembayaran, dan untuk melaksanakan pembayaran. Tim pengelola ditetapkan dalam Surat Keputusan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi.

IV. PERSYARATAN INSTITUSI PENGUSUL

Penerima bantuan ini adalah Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. Persyaratan kelayakan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi yang dapat mengajukan proposal adalah sebagai berikut:

i. Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi yang telah disahkan oleh kementerian Hukum dan Hak Asasi Manusia;

ii. Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi mengusulkan PTS/Program Studi yang memenuhi persyaratan:

a. Merupakan PT yang berada pada Kluster 4 atau 5 sesuai dengan Surat Keputusan Direktur Jenderal Kelembagaan, Ilmu Pengetahuan, Teknologi dan Pendidikan Tinggi, Kementerian Riset, Teknologi dan Pendidikan Tinggi **No. 2217/C/KEP/VIII/2018** untuk PT yang berbentuk Universitas, Institut, atau Sekolah Tinggi dan **No. 2189/C/KEP/VIII/2017** untuk PT yang berbentuk Politeknik atau Akademi;atau

b. Merupakan PT yang terdata pada PD-Dikti dan belum dikelompokkan dalam kluster;

c. Akreditasi program studi yang diusulkan maksimum B dan masih berlaku;

d. PT telah melakukan pelaporan data kegiatan belajar mengajar melalui Pangkalan Data Pendidikan Tinggi dengan persentase 100% untuk TA 2017-1 dan 2017-2, kecuali bagi perguruan tinggi baru yang belum menyelenggarakan pendidikan 1 (satu) tahun akademik penuh;

e. Tidak sedang dikenakan sanksi oleh Direktorat Jenderal Kelembagaan Ilmu Pengetahuan dan Pendidikan Tinggi berdasarkan Permenristekdikti No. 100 tahun 2016 tentang Pendirian, Perubahan, Pembubaran Perguruan Tinggi Negeri, Dan Pendirian, Perubahan, Pencabutan Izin Perguruan Tinggi Swasta;

f. Tidak sedang dalam proses pengajuan perubahan bentuk perguruan tinggi dan perubahan badan hukum;

iii. Tidak sedang memiliki masalah internal dan tidak dalam sengketa hukum.

V. PENGAJUAN, SELEKSI DAN KRITERIA SELEKSI PROPOSAL

A. Pengajuan Proposal

i.   Proposal diusulkan oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. Setiap proposal berisi usulan untuk 1 (satu) PTS yang berada di bawah Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. PTS melakukan pendaftaran akun melalui website http://pppts.ristekdikti.go.id. Alur pengusulan PP-PTS disajikan pada Gambar 1.

ii. Direktorat Pembinaan Kelembagaan melakukan verifikasi eligibilitas (pemenuhan syarat) PTS yang diusulkan dan keabsahan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. Apabila PTS dan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi dinyatakan sah, maka PTS diberikan akun untuk menyampaian proposal PP-PTS dalam bentuk elektronik melalui *website*.

iii. Proposal disampaikan dalam bentuk elektronik oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi melalui website http://pppts.ristekdikti.go.id.

B. Seleksi Proposal

Evaluasi proposal dititikberatkan pada persyaratan administrasi dan **kemampuan pengusul dalam mengaitkan antara program pengembangan yang direncanakan dengan kebutuhan pembiayaan yang diperlukan.** Mekanisme seleksi proposal dilakukan secara akuntabel, objektif, dan transparan.

Proses seleksi akan dilakukan dalam tahapan: (1) Seleksi Administratif dilakukan oleh Direktorat Pembinaan Kelembagaan Perguruan Tinggi, (2) Seleksi Substantif dilakukan oleh *reviewer* independen, dan (3) Presentasi oleh PTS calon penerima bantuan untuk evaluasi kelayakan program, finalisasi program dan anggaran.

Evaluasi proposal menilai aspek persyaratan administrasi dan kemampuan pengusul dalam mengaitkan antara konmdisi dan kebutuhan saat ini, program pengembangan yang direncanakan dengan kebutuhan barang dan bangunan yang diusulkan.

C. Proses Seleksi Proposal

Seleksi proposal dilakukan dalam tahapan berikut:

1.   Evaluasi administratif terhadap pemenuhan persyaratan, kesesuaian format proposal dengan Panduan Penyusunan Proposal PP-PTS Tahun 2019 dilakukan oleh Direktorat Pembinaan Kelembagaan Perguruan Tinggi, dan verifikasi oleh LLDIKTI ;

2.   Evaluasi substantif dilakukan oleh reviewer independen. Satu proposal dinilai oleh sekurang-kurangnya dua orang reviewer yang ditunjuk. Reviewer juga akan menelaah proposal pada aspek program, kesesuaian jenis barang dan pembangunan gedung dengan kebutuhan pembelajaran pada program studi yang diusulkan. Evaluasi juga memperhatikan kapasitas PTS dalam rencana pengelolaan dan pemanfaatan bantuan yang diterima berdasarkan uraian yang diberikan dalam proposal dan data-data lain terkait dengan PTS/Program Studi yang diusulkan;

3. Presentasi: Pengusul yang lolos tahap evaluasi substantif akan diminta untuk mempresentasikan usulannya. Pada tahap ini akan dilakukan juga evaluasi kelayakan program, finalisasi usulan kebutuhan dan anggaran.

D. Kriteria Seleksi Proposal

Proposal yang memenuhi persyaratan administrasi sesuai dengan persyaratan umum institusi pengusul, akan diseleksi berdasarkan kriteria berikut:

KELENGKAPAN PROFIL PERGURUAN TINGGI (30%)

Penilaian dilakukan terhadap kelengkapan data profil perguruan tinggi dan uraian analisis data untuk mengidentifikasi permasalahan dan kebutuhan institusi dalam peningkatan mutu pembelajaran berdasarkan rencana pengembangan PTS. Kelengkapan data profil perguruan tinggi mencakup antara lain profil mahasiswa, profil lulusan, profil SDM, profil sarana dan prasarana. Selain itu juga dilakukan penilaian terhadap uraian dalam proposal terkait dengan analisis penetapan program studi yang diusulkan dari perspektif badan hukum nirlaba penyelenggara perguruan tinggi.

RENCANA PENGEMBANGAN STRATEGIS PERGURUAN TINGGI (20%)

Penilaian dilakukan terhadap kelengkapan dan kejelasan arah pengembangan institusi yang dinyatakan dalam pernyataan visi, misi dan tujuan institusi, serta program strategis serta indikator yang akan dicapai.

PROGRAM PENINGKATAN KUALITAS PENDIDIKAN (50%)

Penilaian dilakukan terhadap keterkaitan program pengembangan dengan program strategis dan kebutuhan institusi untuk mendukung peningkatan mutu program studi yang dipilih, target indikator yang akan dicapai, kesesuaian antara program pengembangan dengan usulan pengadaan, kesesuaian jenis dan kelengkapan spesfisikasi usulan pengadaan barang dan pembangunan gedung dengan Panduan Penyusunan Proposal PP-PTS Tahun 2019.

VI. FORMAT PROPOSAL

Setiap proposal yang disampaikan oleh badan hukum nirlaba penyelenggara perguruan tinggi berisi usulan untuk satu PTS. Proposal ditulis dalam **Bahasa Indonesia yang baik dan benar**, menggunakan *font **Times New Roman*** 12 point, dan spasi tunggal. Penulisan Proposal harus mengikuti struktur dan format berikut:

1. **Halaman judul/*cover***

    Memuat informasi tentang nama institusi, seperti contoh pada **Lampiran A**.

2. **Halaman identifikasi dan pengesahan**

    Halaman ini berisi informasi ringkas tentang nama dan alamat lengkap badan hukum nirlaba penyelengara perguruan tinggi dan PTS, nama dan alamat e-mail Ketua Pelaksana program di tingkat institusi, seperti contoh pada **Lampiran A**.

3. **Daftar isi**
4. **Ringkasan eksekutif (maksimum 1 halaman)**

    Memuat intisari Proposal, khususnya program peningkatan kualitas pendidikan dan keterkaitannya dengan usulan pengadaan dan pembangunan gedung yang disampaikan.

5. Bab 1: Profil Perguruan Tinggi

Bagian ini memuat informasi mengenai profil perguruan tinggi antara lain profil mahasiswa, profil lulusan, profil SDM, profil sarana dan prasarana, serta kegiatan pendidikan dan hasilnya yang dinyatakan dalam indikator kinerja. Lakukanlah analisis sesuai dengan data-data pada profil tersebut untuk mengidentifikasi permasalahan dan kebutuhan institusi dalam peningkatan mutu pembelajaran berdasarkan rencana pengembangan PTS. Berdasarkan hasil analisis tersebut, uraikan justifikasi dan perspektif badan hukum nirlaba penyelenggara perguruan tinggi dalam penetapan program studi yang diusulkan untuk ditingkatkan mutunya. Untuk menggambarkan profil perguruan tinggi dapat digunakan format pada **Lampiran B**.

Berdasarkan profil PT, Badan hukum nirlaba penyelenggara perguruan tinggi menguraikan analisis dari perspektif badan hukum dalam menetapkan prodi yang diusulkan untuk ditingkatkan kualitasnya.

6. Bab 2: Rencana Strategis Pengembangan Perguruan Tinggi

Bagian ini memuat informasi ringkas tentang rencana strategis pengembangan institusi yang saat ini dijalankan dan dijadikan landasan untuk penyusunan rencana program pengembangan. Informasi dimaksud paling tidak memuat jangka waktu renstra, visi dan misi institusi, strategi utama dan program pengembangan yang telah ditetapkan serta indikator kinerja untuk mengukur ketercapaian renstra paling tidak memuat indikator kinerja seperti disajikan pada Tabel 1 berikut ini.

Tabel 1. Nilai baseline indikator kinerja PT dan targetnya

Indikator Kinerja	Baseline (Data per-September 2018)	Target September 2019	Target September 2020
Status Akreditasi institusi			
Prodi dengan akreditasi A per total prodi			
Prodi dengan akreditasi B per total prodi			
Rata-rata Lama Studi Lulusan Tingkat PT **Prodi A** **Prodi B** **Dst**			
Rasio jumlah lulusan terhadap input Tingkat PT **Prodi A** **Prodi B** **Dst**			
Rata-rata IPK Lulusan Tingkat PT **Prodi A** **Prodi B** **Dst**			
Rata-rata penyelesaian tugas akhir Tingkat PT **Prodi A** **Prodi B** **Dst**			
Indikator lainnya sesuai dengan Renstra masing-masing PT			

7. Bab 3: Program Pengembangan Peningkatan Kualitas Pendidikan

Bagian ini berisi program pengembangan untuk peningkatan kualitas pendidikan yang direncanakan oleh perguruan tinggi dengan memanfaatkan barang dan gedung yang diusulkan. Program studi yang menjadi sasaran peningkatan kualitas pendidikan harus disampaikan secara jelas. Program pengembangan yang diusulkan dapat terdiri dari beberapa aktivitas. Setiap aktivitas disusun sesuai struktur berikut:

- Judul program pengembangan/aktivitas:
- Latar belakang:

  Jelaskan masalah yang ingin diatasi dengan mengacu pada analisis profil PT yang disajikan pada Bab 1.

- Tujuan:

  Jelaskan keterkaitan tujuan yang ingin dicapai dengan program pengembangan/aktivitas yang diusulkan. Tujuan harus dapat dijabarkan menjadi indikator kinerja yang terukur.

- Mekanisme/tahapan pelaksanaan:

  Jelaskan rincian tahapan yang akan dilaksanakan untuk menyelesaikan masalah dan mencapai tujuan.

- Kebutuhan sumber daya:

  Jelaskan sumberdaya yang dibutuhkan untuk pelaksanaan program pengembangn. Kebutuhan sumberdaya disusun dengan menggunakan Tabel 2 berikut:

  Tabel 2. Sumberdaya yang diperlukan untuk pelaksanaan Program

Jenis Sumberdaya*)	Perkiraan Biaya	Peruntukan/Pemanfaatan
Peralatan TIK		
Peralatan Lab……		
Ruang Kelas/Lab		
Total		

  *)Diisi jenis paket, bukan rincian jenis peralatan.

- Indikator Kinerja:

  Sajikan indikator kinerja yang akan dicapai dengan program ini. Indikator kinerja merupakan alat ukur pencapaian tujuan.

  Tabel 3. Indikator kinerja program pengembangan yang diusulkan

Indikator Kinerja	Baseline (data per-September 2018)	Target September 2019	Target September 2020

- Program studi sasaran:
  Sebutkan program studi yang menjadi sasaran program pengembangan.
- Penanggung jawab program/kegiatan:

8. **Bab 4: Usulan Belanja Barang, Pembangunan Gedung dan Rencana Anggaran Biaya**

   Bab ini berisi usulan belanja barang, pembangunan gedung dan Rencana Anggaran Biaya (RAB). RAB yang disajikan dalam format pada **Tabel 4** merupakan usulan anggaran total institusi yang didasarkan atas usulan anggaran untuk belanja barang dan pembangunan gedung.

   Usulan belanja barang dan pembangunan gedung harus disusun sesuai dengan format seperti tertera pada **Tabel 5-7** di bawah ini. Barang yang dapat diusulkan pada proposal ini hanya barang yang disajikan pada **Lampiran C** pada panduan ini.

Tabel 7. Rencana Anggaran Belanja PP-PTS Tahun Anggaran 2019

No	Komponen Biaya	Perhitungan Biaya Tahun 2019		
		Volume	Harga Satuan Paket (Rp.)*)	Jumlah Biaya (Rp.)
1	Pengadaan Barang			
	A. Pengadaan Alat Laboratorium Dasar IPA	1	Paket	
	B. Pengadaan Alat Laboratorium Kesehatan Dasar	1	Paket	
	C. Pengadaan Alat Laboratorium Teknik Dasar	1	Paket	
	D. Pengadaan Alat Laboratorium Desain Dasar	1	Paket	
	E. Pengadaan Alat Laboratorium Microteaching	1	Paket	
	F. Pengadaan Alat Laboratorium Bahasa	1	Paket	
	G. Pengadaan Peralatan Pendidikan Dan TIK	1	Paket	
2	Pembangunan Gedung Baru			
	A. Gedung kelas	…..	Ruang	
	B. Gedung laboratorium	…..	Ruang	
	TOTAL DANA PP-PTS YANG DIUSULKAN			

*)Harga paket pengadaan atau pembangunan gedung baru dihitung berdasarkan spesifikasi rinci pada Tabel 5-7.

Tabel 5. Spesifikasi Rinci untuk Peralatan Laboratorium Dasar IPA/Kesehatan Dasar/ Teknik Dasar/Desain Dasar/Mikroteaching/ Bahasa Tahun 2019

Nama Peralatan Laboratorium .... *)	Spesifikasi Teknis	Jumlah	Harga Satuan	Perkiraan Biaya (ribuan rupiah)	Laboratorium Terkait
1. ...					
2. ...					
n. ...					
Total					

*) Gunakan format terpisah untuk setiap usulan kelompok peralatan laboratorium

Tabel 6. Spesifikasi Rinci untuk Peralatan Pendidikan dan TIK Tahun 2019

Nama Peralatan	Spesifikasi Teknis	Jumlah	HargaSatuan (ribuan rupiah)	Perkiraan Biaya (ribuan rupiah)	Peruntukan*)
1. ...					
2. ...					
n. ...					
Total					

*) Diisi dengan nama laboratorium, pembelajaran di kelas,

Tabel 7. Spesifikasi Rinci Pembangunan Gedung Tahun 2019*)

Fungsi Ruang	Luas Ruangan (m²)	Perkiraan Biaya per unit luasan (m²)	Perkiraan Biaya (ribuan rupiah)
1. Gedung/Ruang Kelas			
2. Gedung/Ruang Laboratorium			
Total			

*) Harus dilengkapi dengan dokumen perencanaan, spesifikasi, RAB dan rencana jadwal pelaksanaan

9. **Lampiran-lampiran**

   Lampiran berisi kelengkapan proposal yaitu:

   1. Fotokopi Akta Notaris Pendirian Badan Penyelenggara dari PTS beserta semua perubahan yang telah dilakukan
   2. Fotokopi SK Pendirian Awal PT dan perubahannya dari Kementerian urusan pendidikan tinggi
   3. Fotokopi Akta Pengesahan badan hukum nirlaba penyelenggara perguruan tinggi yang telah dilegalisir oleh Kemenkumham,
   4. Bukti pelaporan PDDIKTI 2017-1 dan 2017-2, kecuali bagi perguruan tinggi baru yang belum menyelenggarakan pendidikan satu tahun akademik penuh,
   5. Fotokopi Sertifikat lahan kampus PTS atas nama badan hukum nirlaba penyelenggara perguruan tinggi (khusus bagi yang mengusulkan pekerjaan sipil),

6. Fotokopi IMB untuk pembangunan gedung yang diusulkan (khusus bagi yang mengusulkan pekerjaan sipil),
7. Surat pernyataan Rektor/Direktur/Ketua bahwa PTS tidak menyelenggarakan program yang bertentangan dengan kebijakan Ditjen Dikti seperti "kelas jauh", ijazah palsu, dan menyelenggarakan program tanpa izin, dll.
8. Surat pernyataan Rektor/Direktur/Ketua bahwa **PTS tidak sedang dalam proses pengajuan perubahan bentuk perguruan tinggi dan perubahan badan hukum nirlaba/yayasan.**
9. Surat pernyataan Rektor/Direktur/Ketua bahwa PTS tidak sedang memiliki masalah internal dengan yayasan dan tidak dalam sengketa hukum.
10. Fotokopi sertifikat akreditasi program studi atau bukti pengajuan akreditasi bagi yang sedang memproses.

VII. ADMINISTRASI PROPOSAL

Proposal ditulis dengan ukuran A4 dengan font *Times New Roman* ukuran 12pt, 1 spasi dengan format sampul depan seperti pada **Lampiran A.** Proposal dalam bentuk dokumen elektronik disampaikan oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi melalui http://pppts.ristekdikti.go.id. Tatacara pemasukan proposal dapat diunduh pada http://pppts.ristekdikti.go.id. Jadwal pemasukan dan proses seleksi proposal sebagai berikut:

No	Kegiatan	Jadwal
1	Pengumuman dan Registrasi	1 Nopember 2018
2	Batas akhir unggah proposal	22 Desember 2018
3	Evaluasi administrasi	2-9 Januari 2019
4	Evaluasi dokumen	16-29 Januari- 2019
5	Presentasi	5-15 Februari 2019
6	Penetapan penerima hibah	22 Februari 2019
7	Penandatanganan kontrak perjanjian pembangunan gedung	1 Maret 2019
8	Pelaksanaan PP-PTS	Maret s.d. Nopember 2019
9	Monev PP-PTS	Agustus s.d. Nopember 2019
10	Laporan Akhir PP-PTS	Nopember 2019

LAMPIRAN A

ADMINISTRASI PROPOSAL

Format Sampul Depan

RISTEKDIKTI

PROPOSAL
PROGRAM PEMBINAAN PTS
Skema A
Tahun Anggaran 2019

**LOGO
PT**

Perguruan Tinggi: ....
Badan Hukum Nirlaba Penyelenggara PT ....

Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi
KementerianRiset dan Pendidikan Tinggi
2019

Halaman Identifikasi Dan Pengesahaan

1. Nama Badan Hukum Nirlaba   : _____
   Penyelenggara PT

2. Alamat Badan Hukum   : _____
   Nirlaba Penyelenggara PT   _____
                                      _____

3. Penanggung Jawab[1]   : _____

5. Ketua Pelaksana[2]
   N a m a   : _____
   Alamat   : _____
   Telepon Kantor   : _____
   Telepon *Cellular(WA)*   : _____
   Fax   : _____
   e-mail   : _____

6. Nama Perguruan Tinggi   : _____

   Apakah PT pernah berubah bentuk: ya/tidak
   (diisi jika PT pernah berubah bentuk)
   Bentuk PT Sebelumya   :
   Tahun Perubahan   :

7. Alamat Perguruan Tinggi   : _____
                                      _____
                                      _____

8. Program Studi yang diusulkan   : 1.
   untuk ditingkatkan mutunya   2.
                                      3.

Mengetahui, <Rektor/Direktur/Ketua>	< Tempat, tanggal…………..> Penanggung Jawab, <Ketua Badan Hukum Nirlaba Penyelenggara PT)
(…………………………………………..)	(…………………………………………..)

[1]Penanggung jawab adalah Ketua Badan Hukum Nirlaba Penyelenggara PT.

[2]Ketua Pelaksana adalah ketua gugus tugas untuk implementasi hibah yang ditunjuk oleh Pemimpin Badan Hukum Nirlaba Penyelenggara PT.

LAMPIRAN B

FORMAT PROFIL PERGURUAN TINGGI

LAMPIRAN B

TABEL-TABEL INI UNTUK DIMASUKKAN PADA BAB 1 PROPOSAL

A. MAHASISWA

Tabel 1. Profil Penerimaan Mahasiswa Baru 3 Tahun Terakhir

No	Prodi	2015/2016			2016/2017			2017/2018			Rerata Keketatan
		Pendaftar	Diterima	Keketatan	Pendaftar	Diterima	Keketatan	Pendaftar	Diterima	Keketatan	
		1	2	3=1/2	4	5	6=4/5	7	8	9=7/8	10
1											
2											
3											
dst											

Tabel 2. Profil Mahasiswa Aktif Tahun 2018

No	Program Studi	Jumlah Mahasiswa Aktif Tahun 2018			
		D3	D4	S1	Profesi
1					
2					
3					
Dst					
	TOTAL				

Tabel 3. Profil IPK Mahasiswa Aktif Tahun 2017/2018

No	Program Studi	Rerata IPK Mahasiswa Aktif Tahun 2017/2018			
		D3	D4	S1	Profesi
1					
2					
3					
dst					
	TOTAL				

Tabel 4. Data Akreditasi Program Studi

No	Program Studi	Peringkat Akredtasi	SK Akreditasi	Masa berlaku Akreditasi
1				
2				
3				
dst				

B. LULUSAN

Tabel 5. Jumlah Lulusan tiga tahun terakhir

Tahun Lulus	Jumlah Lulusan				
	D3	D4	S1	Profesi	TOTAL
2015/2016					
2016/2017					
2017/2018					
TOTAL					

Tabel 6. Profil Lulusan Berdasarkan IPK dan Tahun Lulus

No	Prodi	2015/2016								2016/2017								2017/2018							
		<2.5		$2.5 \leq IPK < 3.0$		≥ 3.0		Jml Lulusan	Rerata IPK	<25		$2.5 \leq IPK < 3$		≥ 3.0		Jml Lulusan	Rerata IPK	<2.5		$2.5 \leq IPK < 3.0$		≥ 3.0		Jml Lulusan	Rerata IPK
		Jml	%	Jml	%	Jml	%			Jml	%	Jml	%	Jml	%			Jml	%	Jml	%	Jml	%		
1																									
2																									
3																									
dst																									

Tabel 7. Rerata masa studi lulusan S1 tiga tahun terakhir.

No	Program Studi	Rerata masa studi lulusan			Jumlah Lulusan	Rerata Lama Studi (tahun)
		2015/2016	2016/2017	2017/2018		
1						
2						
3						
Dst						
	Total Lulusan					

Tabel 8. Profil produktivitas program studi selama 3 tahun terakhir

No	Program Studi	2015/2016			2016/2017			2017/2018		
		Jumlah Mhs baru	Total lulusan	Produkti-vitas(%)	Jumlah Mhs baru	Total lulusan	Produkti-vitas(%)	Jumlah Mhs baru	Total lulusan	Produkti-vitas(%)
		1	2	3=2/1	4	5	6=5/4	7	8	9=8/7
1										
2										
3										
dst										
	PERGURUAN TINGGI									

C. SUMBERDAYA MANUSIA

Tabel 9. Profil Dosen Tetap berdasarkan jenjang pendidikan, usia dan jabatan fungsional

Prodi	Jabatan	Kelompok Umur (tahun)															Jumlah
		< 31			31 – 40			41 - 50			51 - 60			> 60			
		S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	
Prodi 1	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Prodi 2	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Prodi 3	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
dst	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
TOTAL																	

Tabel 10. Profil Dosen Tidak Tetap berdasarkan jenjang pendidikan, usia dan jabatan fungsional

Prodi	Jabatan	Kelompok Umur (tahun)															Jumlah
		< 31			31 – 40			41 - 50			51 - 60			> 60			
		S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	
Prodi 1	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Prodi 2	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Prodi 3	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
dst	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
TOTAL																	

D. FASILITAS

Tabel 11. Profil Sarana Ruang Kelas

No	Program Studi	Jumlah Ruang Kelas	Kepemilikan		Jumlah Penggunaan			Fasilitas Pengajaran yang terdapat pada ruang tersebut*			
			sendiri	Sewa	Shift/ hari	Waktu/ shift (menit)	hari/ minggu	Nama/Jenis Fasilitas	Jumlah	Kondisi	
										Baik	Rusak
1	2	3	4	5	6	7	8	9	10	11	12
1											
2											
3											
dst											

Tabel 12. Profil Sarana Ruang Laboratorium

No	Program Studi	Jumlah Laboratorium	Kepemilikan		Jumlah Penggunaan			Fasilitas Pengajaran yang terdapat pada ruang tersebut*			
			sendiri	sewa	Shift/ hari	Waktu/ shift (menit)	hari/ minggu	Nama/Jenis Fasilitas	Jumlah	Kondisi	
										Baik	Rusak
1	2	3	4	5	6	7	8	9	10	11	12
1											
2											
3											
dst											

LAMPIRAN C

DAFTAR PERALATAN YANG DAPAT DIUSULKAN

SPESIFIKASI RINCI BARANG

A.   LABORATORIUM DASAR IPA

No.	Nama Barang		Spesifikasi	Gambar
1.	Autoclave	a.	Electromechanical lock system, Dual-sensing interlock mechanism, Pulse exhaust system, Memory Function, Process status display | Outer Dimensions WDH (mm) : approx. 547 X 532 X 1046 | Chamber Size (Volume) : min. 300f x 710H (min. 54.2 Liter) | Effective capacity : min. 50 Liter | Power source : 220V, 50/ 60 Hz | Power consumption: min. 2.0 kW | Net Weight (Approx.) : 57 Kg | Chamber Material : Stainless Steel (SUS304) | Sterilization temperature range : approx. 105°C to 135°C | Maximum allowable pressure (Gauge pressure) : approx. 0.255 Mpa | Temperature display range : approx. 5°C to 137°C | Warming temperature range : approx. 45°C to 80°C | Sterilization timer : approx. 1 to 250 minutes | Pressure gauge : approx. 0 to 0.4 Mpa | Selective mode (cycle) : Agar sterilization (with Warming) : Preparation -- Heating -- Sterilization -- Exhaust (P0, P1, or P2) -- Warming – Completion; Liquid sterilization : Preparation -- Heating -- Sterilization -- Exhaust (P0, P1, or P2) – Completion; Sterilization of solid/ medical equipment : Preparation -- Heating -- Sterilization -- Exhaust (Forced) – Completion | Safety devices/ warning alarm : Double sensing interlock mechanism, Over-pressure power cut-offm, Over-temperature power cut-off, Heater malfunction checker, Temperature sensor wire breakage detector, Securely closed lid check function, Excess cooling check function, Exhaust bottle ready-to-use check system, Lack-of-water prevention device, Power failure check function, Electric leakage breaker and over current detector | Pressure safety valve, Product are manufactured by the company with ISO 9001/ 13485 and ISO 14001	

No.	Nama Barang		Spesifikasi	Gambar
		b.	Fast, 35 minute sterilizing cycle| Complete and Effective Sterilization at an Affordable Price| Heavy Cast Aluminum Cover and Bottom Construction| Aluminum Alloy Seamless Inset Container Cast Aluminum Rack| Flexible Metal Exhaust Tube| 3 Wire Grounded Plug for Safety| Calibrated Gauge that shows when sterilization cycle begins| Safety locking mechanism that prevents opening while the sterilizer is under pressure| Easy Steam Release Switch| Excess Pressure Relief Valve for Safety| Light, compact, portable and robust, top loading sterilizer| Cover alignment arrows| Lubricated Metal-to-Metal Seal which means| NO GASKETS TO REPLACE OR WEAR OUT| 240 Volts, 50/60 Hz, 1050 Watts / 4.38 Amps| Gross Capacity: 25 qt / 24 liters| Overall Height: 16¾ inches / 42.5 cm| Bottom Height: 12½ inches / 31.2 cm| Inside Diameter: 12½ inches / 32.1cm| Unit Weight: 26 lbs / 11.8 kg| Inner container: Height: 8½ inches / 21.6 cm, Diameter: 11 inches / 28.3 cm, Capacity: min 14.5 qt / 13.7 liters, Volume: 835 in³ / 13 688 cm³	
2.	Chemistry - Biology Experiments	a.	Contains all probeware needed to perform the 17 experiments in the Advanced Chemistry lab manual and all the probeware for 22 of the 28 labs from the Chemistry Through Inquiry Teacher Guide. Consist of : 1. Wireless pH sensor, 2. Wireless temperature sensor, 3. Wireless pressure sensor, 4. Wireless conductivity sensor, 5. Wireless colorimeter and turbidity, 6. High accuracy drop counter, 7. Voltage/current sensor, 8. Fast response temperature probes (3), 9. Oxidation reduction potential probe. Included : Universal Interface and Capstone Software with site lisence, branded personal computer with min. Processor core i3 and original windows min. SP1.	
		b.	Contains the essential sensor and probeware components to complete experiments found in the College Biology Instructor Guide-that's 26 challenging lab activities centered around topics including: The Cell, Biotechnology, Genetics, Animal and Plant Physiology, Ecology.; Consist of : 1. EcoChamber, 2. Metabolism Chamber, 3. Aquatic Productivity Bottles, 4. Wireless Carbon Dioxide Gas Sensor, 5. Wireless Pressure Sensor, 6. Wireless Colorimeter and Turbidity Sensor, 7. Oxygen Gas Sensor, 8. Wireless Temperature Sensor, 9. Optical Dissolved Oxygen Sensor, 10. Ethanol Sensor, 11. Blood Pressure Sensor, 12. Photosynthesis Tank. Include : Universal Interface and Capstone Software with site lisence, branded personal computer with min. Processor core i3 and original windows min. SP1.	

No.	Nama Barang		Spesifikasi	Gambar
3.	pH meter	a.	Model: benchtop; Measurement modes: pH, mV, relative mV (RmV) or ORP with temperature; temperature range: -5.0^0 to 105.0^0C; temp. operating: 5^0 to 45^0C (ambient); temp. probe calibration: 1 point temp. offset calibration; temp. selection: manual or automatic with TC temp. probe; weight: 900 gram; accuracy (pH): ±0.002pH; accuracy (mV): ±0.2mV or $\pm0.05\%$ of reading whichever is greater; accuracy (temp.): $\pm0.1^0$C; battery life: 800hr; Data points: 200 with date and time stamp; display type: LCD; resolution(pH); 0.1, 0.01, 0.001; range (pH): -2.000 to +20.000; IP rating: IP54; inputs: BNC (pH or ORP electrode), pin-tip (reference electrode), 8 pin MiniDIN (ATC temp. probe), stirrer input (Stirrer probe); Probe type: pH electrode; ORP electrode; reference half-cell electrode, ATC temp. probe, stirrer probe (includes 8302BNUMD ROSS ultra triode pH/ATC electrode); range (ORP): ±2000.0mV; range (relative mV): ±2000.0 mV; resolution (mV): 0.1mV; range (mV): ±2000.0mV; relative humidity range: 5 to 85%, non-condensing	
		b.	pH range: -2.000 to 16.000 pH; pH resolution: 0.001pH, 0.01pH; accuracy (pH): ±0.01pH, ±0.002pH, pH Calibration: 5 point (standard mode) 1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45 and two custom buffer; pH Temperature Compensation ATC: -5.0 to 100.0ºC; mV Range: ±1000.0 mV; ±2000.0 mV; mV Resolution:0.1 mV; mV Accuracy: ±0.2 mV (±999.9 mV); ±1 mV (±2000 mV); Relative mV Calibration Single point calibration; Temperature Range: -20.0 to 120.0 ºC; Temperature Resolution: 0.1 °C, 0.1 °F; Temperature Accuracy ±0.5 °C, ±0.9 °F; pH Electrode Diagnostics: Glass and reference junction diagnostics (HI 11311 & HI 12301 only), out of calibration range , probe condition, response time; GLP: Yes; Logging: up to 1000 records organized in: Manual log-on-demand (Max. 200 logs), Manual log-on-stability (Max. 200 logs), Interval logging (Max. 600 samples; 100 lots); Connectivity: 1 micro USB port for charging and PC connectivity, 1 USB port for storage; Environment: 0 to 50°, RH max 95% non-condensing; Battery Type/Life: Built-in rechargeable battery with up to 8 hours of continuous use; Power Supply: 5 VDC adapter (included); Dimensions: approx. 202 x 140 x 12.7mm; Weight: approx. 250 g; include: benchtop docking station with electrode holder, wall mount cradle, USB cable, glass body refillable pH electrode with temperature sensor, 2 sachets each of pH 4, 7, 10, cleaning solution, 5 VDC power adapter and instruction manual.	

No.	Nama Barang		Spesifikasi	Gambar
		c.	**pH:** Range: -2.00 to 19.99; Resolution: 0.1 / 0.01 / 0.001; Relative Accuracy: ±0.02; Auto-Buffer-Recognition: 4.00, 7.00, 10.00 | **Temperature:** Range: -10 to 110℃; Resolution: 0.1℃; Relative Accuracy: ±0.4℃ | **Millivolts:** Range: ±1999.9mV; Resolution: 0.1mV; Relative Accuracy: ±0.1mV | Temperature Compensation: Auto | Calibration: Auto (3 Points) / Manual (3 Points) | Datalog: 100 Point | Print Capability: Yes | Display: Custom LCD | Inputs: BNC, ATC, Power, RS232C | Outputs: Recorder, RS232C (Computer / Printer) | Power: AC/DC Power Adaptor | Certification: ISO9001, CE mark | Dimension: approx. 200(L) x 260(W) x 90(H) | Weight approx. 0.95kg |include: Combination pH Electrode; ATC Probe; Buffer Solution (pH 4.00, 7.00, 10.00)125ml; AC/DC Power Adaptor; Instruction Manual	
4.	Refractometer	a.	Measuring range nD : 1.3200 – 1.5000; Brix : 0 – 85%; HFCS42 : 0 – 76%; HFCS55 : 0 – 80%; Accuracy nD : ±0.0005; Brix : ±0.2%; HFCS42/55 : ±0.2%; Resolution nD : 0.0001; Brix : 0.1%; HFCS42/55 : 0.1%; Temperature range : 10 – 40°C; Display contents : Refractive index, Temp. comp. RI, Brix, HFCS42, HFCS55, and Temperature (&de°F); Wide measuring range Brix : 0 - 85%; Refractive index : 1.3200 - 1.5000; Data storage : 1,100 measurement results; Can display measurement results in Refractive Index (RI), Temperature compensated RI, Brix % and the like; Three different sucrose conversion tables Brix and isomerized sugar HFCS42, HFCS55; Automatic data saving and Automatic data output can be chosen; Applications : Measurement of sucrose concentration of fruits juices, Measurement of sucrose concentration of jam and honey, Brix measurement on beverages, Brix measurement on liquid seasoning, Concentration control on pharmaceutical and medical liquid sample; Sample number, Data storage, Data output, Data deletion, Battery alarm and the like; Temperature compensation : Up to 10 kinds of input for temperature compensation coefficients of measured samples and compensation temperatures	
		b.	1.3300-1.5080 Refractive Index range with +/- 0.0005 accuracy; 0-85% Brix range with +/- 0.2% accuracy; Simple one-button calibration; Automatic Temperature Compensation (ATC) and No Temperature Compensation Settings (NoTC); Sugar Content Range: 0.0 to 85.0% Brix; 1.3300 to 1.5080 nD; 1.3330 to 1.5040 nD_{20}; Sugar Content Resolution: 0.1 % Brix; 0.0001 nD; 0.0001 nD_{20}; Sugar Content Accuracy (@25ºC/77ºF): ±0.2% Brix; ±0.0005 nD; ±0.0005 nD_{20}; Temperature Range: 0 to 80°C (32 to 176°F); Temperature Resolution: 0.1°C (0.1°F); Temperature Accuracy ±0.3 °C (±0.5 °F); Temperature Compensation: automatic between 10 and 40°C (50 to 104°F); Measurement Time: approximately 1.5 seconds; Minimum Sample Volume: 100 μL (to cover prism totally); Light Source yellow LED; Sample Cell stainless steel ring and flint glass prism; Auto-off after three minutes of inactivity; Enclosure Rating IP65; Battery Type / Life 9V / approximately 5000 readings; Dimensions / Weight 192 x 102 x 67 mm (7.6 x 4.01 x 2.6") / 420 g (14.8 oz.)	

No.	Nama Barang		Spesifikasi	Gambar
		c.	Digital Refractometer, Brix, Salinity and Refractive Index; Brix Measuring range: 0-50%; Resolution: 0.1%; Salinity range: 0-28%; Resolution: 0.1%; Specific gravity range: 1.000-1.217; Resolution: 0.001; Refractive index: 1.3330-1.4200; Resolution: 0.0001; Precision of temperature measurement: 0.5°C, 0.9°C; Resolution: 0.1°C. Alarm of low battery	
5.	Conductivity Meter	a.	Range (Conductivity) 0.001 µS/cm to 3000 mS/cm; Resolution (Conductivity) 0.001 µS minimum, auto ranging up to 4 significant digits; Accuracy (Conductivity) 0.5% of reading ±1 digit > 3 µS; 0.5% of reading ±0.01 µS ≤ 3 µS; Range (TDS) 0.001 to 200.0 ppm; Resolution (TDS) 0.001 ppm minimum, auto ranging up to 4 significant digits; Accuracy (TDS) 0.5% of reading ±1 digit; TDS Factor Range Linear (0.02 to 9.99); Range (Salinity) 0.06 to 80.00 psu, 0.05 to 42.00 ppt; Resolution (Salinity) 0.01 psu or 0.01 ppt minimum, auto ranging; Accuracy (Salinity) 0.5% of reading ±1 digit; Salinity Measurement Modes Practical salinity (psu) or natural sea water (ppt); Range (Resistivity) 2 ohm to 100.0 meg-ohm; Resolution (Resistivity) 1 ohm or 0.1 meg-ohm, auto ranging; Accuracy (Resistivity) 0.5% of reading ±1 digit; Cell Constant 0.001 to 199.9cm-1; Compatible Probes 2-cell or 4-cell conductivity sensors with built-in temperature; Temperature Compensation Linear, nLFn (non-linear ultra pure water), nLFu (non-linear ultra pure degassed water), EP (off with warning) or off; Temperature (Metric) Reference 5, 10, 15, 20, 25°C; Calibration Conductivity with calibration editing option and temperature; Range (Temperature) -5.0° to 105.0° C; Resolution (Temperature) 0.1°C; Accuracy (Temperature) ±0.1°C; Temperature Selection Manual or automatic with ATC temperature probe; Temperature Probe Calibration 1 point temperature offset calibration; Channels 1; Display Type Graphic LCD with backlight; Backlight Option Yes, selectable; Keypad Comprehensive with menu-specific function keys and dual purpose scroll/shortcut keys; Measurement Modes Conductivity, TDS, salinity or resistivity with temperature; Stability Selectable fast, medium, slow or Smart Stability setting; Selectable off or Automatic Smart averaging setting; Data Management Details Transfer single, range or all data points to printer or computer; Data Points 2000 with date and time stamp; Log Function Type Automatic data logging with Auto-Read and Timed measure modes; manual data logging with Continuous measure mode; Memory Non-volatile memory preserves data log, calibration log and meter settings; Alarm Output High/low limit alarm, calibration due alarm; Methods 10 per channel with password protection; Languages English, Spanish, French, Italian, German and Chinese; Portuguese and	

No.	Nama Barang		Spesifikasi	Gambar
			Korean available with software update; Inputs 8 pin MiniDIN (conductivity sensor with built-in temperature), stirrer input (stirrer probe); Outputs USB, RS232; Probe Type Conductivity sensor, stirrer probe (includes 013005MD Orion DuraProbe 4-cell conductivity sensor); Power Supply Universal AC adapter (included) or 4 AA batteries (sold separately); AC Adapter Universal 50-60 Hz, 100-240 VAC power adapter (Cat. No. 1010003); Battery Type Four AA (sold separately); Battery Life 800 hours; IP Rating IP-54; Certifications/Compliance CE, TUV 3-1, FCC Class A; Temperature (Metric) Operating 5° to 45° C (ambient); Relative Humidity Range 5 to 85 %, non-condensing; Dimensions (LWH) approx. 24cm x 18cm x 11cm; Weight (Metric) approx. 0.9kg; Calibration Points (Conductivity) Up to 5; Include : Conductivity benchtop meter kit with 013005MD duraprobe (K=0.475) conductivity probe, Conductivity standard, Electrode stand, Universal power adapter	
		b.	Range 0.0 to 20.00, 200, 2,000.0 µS; Oto 2000, 200.0 ms; Resolution 0.01, 0.1, 1 µS, 0.01, 0.1 ms; Accuracy ±1 % full scale or ±1 digit; Calibration: up to 5 points (1 per range) for multi-point calibration, or 1 point for single point for entire range; Temperature Compensation: Automatic Temperature Compensation (ATC) fixed 2% per °C factor, adjustable 73%; Power: Four AA alkaline batteries (supplied), >100 hours continuous use, Display Single Custom LCD; Auto shut-off After 17 minutes; Operating Temperature 32 to 122°F; 0 to 50°C; Microprocessors have enabled meter manufacturers to combine many features into smaller designs with better accuracy: Push button operation, Up to five point calibration, Temperature readout, Automatic Temperature Compensation, Auto-off after 17 minutes; Hold function, Adjustable conductivity to TDS factor; Ideal for the following applications: Water and Wastewater, Industrial Water Boiling and Cooling, Drinking Water, Laundry and Sanitation, Food and Beverage; include case.	
		c.	EC Range 0.0 to 199.9 µS/cm; 0 to 1999 µS/cm; 0.00 to 19.99 mS/cm; 0.0 to 199.9 mS/cm; EC Resolution 0.1 µS/cm; 1 µS/cm; 0.01 mS/cm; 0.1 mS/cm; EC Accuracy ±1% FS (excluding probe error); EC Calibration manual, one point; Temperature Compensation automatic, 10 to 50°C (50 to 122°F) with β = 2%/°C; Electrode/Probe conductivity probe with internal temperature sensor, DIN connector and 1 m (3.3') cable (included); Battery Type/Life 9V / approximately 100 hours of continuous use; Environment 0 to 50°C; RH max 95%; Dimensions approx. 196 x 80 x 60 mm; Weight approx. 425 g; Features: Four-ring Probe, Four Measurement Ranges, Automatic Temperature Compensation, One-point Calibration, Battery Error Prevention System (BEPS).	

No.	Nama Barang		Spesifikasi	Gambar
6.	Furnace	a.	Capacity 3 liter; Temperature max. range: 100oC to 1200oC; Dimension: External W390 x D480 x H500mm, Chamber : W130xD250xH90mm; Material Internal : Ceramic Fiber with Heating wire, External : Powder Coated Steel; Controller: Digital PID Controller with Jog-Shuttle Switch (Turn+Push); Display : Digital LCD Display; Timer : 99 hour 59 min; Thermocouple : K-type; Safety Device : Over Temp. and Over Current Protector, Sensor Error Detector; Power : 1800W, 220V, 50/60 Hz	
		b.	Max temp [°C]: 1100; Heat-up time [mins]: approx. 28; Max. continuous operating temp. [°C] : 1000; Dimensions: Internal HWD [mm] : approx. 165 x 180 x 210; Dimensions: External HWD [mm] : 580 x 410 x 420; Temperature uniformity of ± 5 °C within HWD [mm] : approx. 125 x 140 x 140; Volume [litres] : min. 6; Max power [W] : 2000; Holding power [W] : approx. 900; Thermocouple type : K; Weight [kg] : approx. 24; 301 controller with single ramp to setpoint and process timer; Drop down door with air gap to minimise external temperature; Delayed start / process timer function as standard; Vacuum formed, low thermal mass insulation; Hard ceramic hearth fitted as standard; Ventilated via top mounted ceramic chimney. Include : Crucible Qty : 10 pcs	
7.	Heating Mantle	a.	Flask capacity 1000ml | polypropylene outer case | Use with round bottom flasks | "Cool-to-touch" design | Maximum element temperature 450°C | Built-in energy regulator | Replaceble insulated heater cartridge | Indicator lamps for power and heater operation | A chemically resistant polypropylene outer casing | A grounded earth screen and double fuses for extra safety	

No.	Nama Barang		Spesifikasi	Gambar
		b.	Flexible coiled heating elements absorb shock, minimizing the risk of flasks breaking| Heating element is attached to rigid thermal insulating cartridge to ensure maximum heat transfer and support| Heating elements and insulation form an easy-to-replace heating cartridge| Unique airflow through ventilation slots beneath and around the rim and heating cartridge keep the exterior "cool-to-the-touch"| Stainless-steel screen covering the heating element is grounded directly to the cable for added protection| Mantles are double fused for added safety| Nonskid feet and support clamps add stability| Flask capacity: 1000mL| Case Material: Powder-coated aluminium| Max Element Temperature: 450°C| Certifications/Compliance CE, CSA	
8.	Hotplate Magnetic Stirrer	a.	Permissible ambient conditions: 5-31^{0}C at 80% rel. humidity 32-40 ^{0}C decreasing linearly up to max. 50% rel. humidity; weight approx. 2.9Kg; protection class DIN EN 60529: IP32; Drive: EC-motor; Display: digital; rotation speed range: 100-1400rpm; ma. Stirring capacity (H2O): 20Liter; dimensions LWH: approx. 173x277x94mm; speed accuracy: $\pm$ 2%; heating power: 800W; Hotplate temperature: 20-300^{0}C; medium temp. max: approx. 250^{0}C; accuracy temp. setting: $\pm$ 1^{0}C; external temp. sensor: Pt1000; temperature control: micro controller; temp. accuracy hotplate: $\pm$ 5^{0}C; residual heat indicator: 1; safety circuit hotplate: 25^{0}C over hotplate temp.; max. load: approx. 25kg; power consumption 820W; plate diameter: approx. 145mm; plate material: silumin with ceramic coating; operating mode: continuous; smooth start:1	
		b.	Microprocessor Digital Feedback Control, Digital LCD and jog shuttle switch, Digital timer function included: 99hours 59minutes, Storage function for set values: temperature, RPM, and timer, Locking mode for experimental safety supported, Dimension plate approx. 180x180mm| overall approx. 205x280x110, temperature Ambient +5°C to 400°C Max, 60 to 1500 rpm| Electronic Solid State Controller| Ceramic Coated Stainless Steel Top Plate| Power Max. 500 watt, 3.0 amp	

No.	Nama Barang		Spesifikasi	Gambar
		c.	Ceramic heating place resistance to corrosion| Speed regulation: up to 1500rpm, 800W| Electronic temp control: from room temp to 550oC| Reading on the display of the set temperature| Dimension ceramic plate : approx. 200 x 200mm| Stirring Vol (H2O) : up to 15Lt| 230V/50Hz	
		d.	Number of stirring positions: 1	Stirring quantity max. per stirring position (H2O) : min 10 L	Stirring quantity max. (H2O) : 10 L	Motor rating input : 15 W	Motor rating output: 1.5 W	Speed display scale	Speed range : 100 - 1500 rpm	Heat output : 1000 W	Heating rate (1 l H2O in H15) : 5 K/min	Heating temperature range : approx. 50 - 500°C	Heat control LED	Heat control accuracy : ±10 K	Speed control : scale 0 – 6	Fixed safety circuit : 550°C	Set-up plate material: Glass ceramic	Set-up plate dimensions : approx. 180 x 180 mm	Dimensions WHD : approx. 220 x 105 x 330 mm	Weight : approx. 5 Kg	Permissible ambient temperature : 5 - 40°C	Permissible relative moisture : 80%	Protection class according to DIN EN 60529 : IP 21	Voltage : 230V| Frequency : 50/60 Hz	Power input : 1005 W	
9.	Incubator	a.	Gravity convection technology for gentle air flow air & minimal drying out| Rounded interior corners| Microprocessor control| Automatic overtemperature alarm| Stackable with optional stacking kit| Interior material: stainless steel 1.4016| RS232 Interface| Internal glass door| Easy calibration, routine check upon startup for optimum performance| Large vacuum fluorescent digital display for easy reading| Temperature range: ambient +5°C - 75°C| Temperature uniformity: ± 0.6°C| Temperature stability: ± 0.2°C| Spatial temperature deviation at 37°C: ± 0.6°C| Temperature deviation over time at 37°C: ± 0.2°C| Footprint: 0.3 m2| Chamber volume: 75 liter| Chamber dimensions: 354 x 508 x 414 mm (WxHxD)| Exterior dimensions: 530 x 720 x 565 mm (WxHxD)| Number of shelves: 2 pcs supplied, max. 13 pcs| Max. shelf load: 25 kg| Power: 230V, 50Hz, 300W, 1.3 A| Weight: 40 kg (empty)	

No.	Nama Barang		Spesifikasi	Gambar
		b.	Control COCKPIT adaptive multifunctional digital PID-microprocessor controller with high-definition TFT-colour display | Temperature 1 Pt100 sensor DIN class A in 4-wire-circuit | Timer Digital backwards counter with target time setting, adjustable from 1 minute to 99 days | temperature range in °C min. 5°C above ambient up to +80°C | Door inner glass door | Internals 1 stainless steel grids | Scope of delivery incl. works calibration certificate for +37°C | Housing rear zinc-plated steel | Interior easy-to-clean interior,made of stainless steel,reinforced by deep drawn ribbing with integrated and protected large-area heating on four sides | Volume 53 Liter | texture stainless steel casing WHD: approx. 585x784x514mm; power: approx. 1000W; max. loading of chamber: approx. 80Kg	
		c.	Performance Data Temperature: Temperature range 5 °C above ambient temperature to [°C] 100, Temperature variation at 37 °C [± K] 0.4, Temperature fluctuation at 37 °C [± K] 0.2, Heating-up time to 37 °C [min] 45, Recovery time after 30 seconds door open at 37 °C [min] 16| Electrical data: Rated Voltage [V] 230, Power frequency [Hz] 50/60, Nominal power [kW] 0.3, Unit fuse [A] 6.3, Phase (Nominal voltage) [ph] 1| Measures: Interior volume [L] 57| Net weight of the unit (empty) [kg] 39, permitted load [kg] 70, Load per rack [kg] 30| Measures – Doors: Unit doors 1| Measures - Internal Dimensions (WxHxD) 360x420x380mm| Measures - Outer dimensions (WxHxD) 560x625x565mm| Wall clearance sidewise [mm] 100, Wall clearance back [mm] 160, Energy consumption at 37 °C 25 Wh/h| Number of shelves (std./max.) 2/4| Temperature range: ambient temperature plus 5 °C to 100 °C| High temperature accuracy thanks to APT.line™ technology| Natural convection| Controller with LCD display| Electromechanical control of the exhaust air flap| Inner door made of tempered safety glass| 2 chrome-plated racks| Class 3.1 integrated independent temperature safety device (DIN 12880) with visual alarm| Ergonomic handle design	
		d.	This version of the incubator is suitable for incubate processes without airflow It is choice if you are looking for a incubator that comes within a budget. This equipment is fully focused on main incubating functions aside from other functions.; Temperature range : Ambient +5°C to 70°C (Ambient +9°F to 158°F); Air circulation type : Natural.; Temp. Control : Microprocessor PID Controller.; Time range : 00.00 to 99Hr59min (MIN SEC) Selectable Digital Display.; Temp. accuracy & stability : ±0.1°C.; Temp. Uniformity : ±1.5°C.; Capacity : 54 L.; Material Internal : Stainless steel.; Material external : Steel plate with powder heating coated.; Shelves : 2 supplied (12 maximum).; Heater : 480W.; Safety Device : Automatic reset function incoming power cut, Buzzer on when set time arrived, Door open alarm, Electric leakage breaker, Over temp. Controller.; Dimension Internal : 380Wx340Dx420H mm.; Dimension External : 525Wx485D x825H mm.; Weight : 41 kg.; Electrical requirements : 230V, 50/60Hz, 1phase, 2.1A.	

No.	Nama Barang	Spesifikasi		Gambar
10.	Lemari Asam	a.	Useful dimension (wxdxh): approx. 823x600x660 mm, Overall dimension (wxdxh): approx. 885x760x1120 mm, Exhaust duct ∅: 200, Working aperture: 200 mm, Max front aperture: 455 mm, Weight (approx.) w/o filter: approx. 85 kg; Filter: Pre-filter (particulate), Main filter (charcoal), Hepa Filter; Electrical Supply: 220-240/50-60 V/Hz; Power: 122 W; Lighting: 2x18 Watt; Air Flow : Vol/air treated m3/h: 400, Average face speed m/sec: >0,6; Controls: Power on/off, Light on/off, Microprocessor monitoring system checking airflow, pre-filter and filter efficiency, Variable speed air regulation, Audible and visual alarms alert the operator to low/high airflow, fan failure, filter and pre-filter condition, black-out, gas detector and anemometer failure. Construction : Head section: Epoxy coated, zinc plated steel ; Base section: Anodized, aluminium; Spill tray: PVC Acid and solvents resistant; Fan Motor: Centrifugal IP54; Microprocessor controlled monitoring system, Highly effective protection from toxic vapours, High filtration efficiency, Large adsorption capacity, Filter monitoring systems, Ductless. Designed with a microprocessor controlled system for a range of data which includes type and code number of the filter being used, installation date, maximum time allowance for filter use and a warning date for its replacement. Audible and visual alarms are also available to protect the operator. These alarms cover out of range minimum and maximum air velocity, filter saturation, pre filter clogging, anemometer failure, gas detector failure and motor fan malfunctioning. Equipped with fluorescent lighting as well as optional gas/vacuum tap and power point. BUILT IN SAFETY: All electronic components, switches, lighting and motor fan have been selected and installed fully isolated from air contaminated with solvents and therefore meet the most stringent safety requirements such as EN 61010/1. Current directives of the European Community are also covered as certified by the CE mark.	

No.	Nama Barang		Spesifikasi	Gambar
		b.	Exterior Dimension (WDH); 4 feet : 48 x 36 x 89 inch or 121.92 x 91.44 x 226.06 cm; Working Area Dimension (WDH); 4 feet : 40 x 25 x 37 inch or 101.60 x 63.50 x 93.98 cm; Sash Opening (WH); 4 feet : 40 x 28 inch or 101.60 x 71.12 cm; Sash Opening Sq. Ft. : 8.1; Total CFM and Static Pressure : 80 FPM S.P. 100 FPM S.P. 120 FPM S.P 650 0.15" 810 0.25" 980 0.35" Static pressures shown are for the pressure drop through the hoods only. The total pressure drop through the hood and the duct system must be calculated to select the proper exhaust fan. Certification: ASHRAE 110-1995| Superstructure Frame: A free-standing rigid frame structure of steel angle shall be provided to support exterior panels and interior liner and baffle panels| Interior Walls: Double wall ends, not more than 4" wide, shall be provided to maximize interior working area. Airfoil: A streamlined airfoil shall be integral at the bottom of the hood opening on bench and distillation hoods| Baffles: A stable, non-adjustable baffle with three fixed horizontal slots shall be provided to aid in distributing the flow of air into and through the hood. The baffle shall be spaced out 2-1/4" from the back liner. The baffle shall be removable for cleaning| Sash: A vertical rising sash of 1/4" laminated safety float glass shall be provided| Worktop: 25 mm thickness Epoxy Worktop with fully molded 6 mm depth marine edge	Liners: Interior liner panels shall be 1/4" thick fiberglass reinforced polyester sheet. Interior liner panels shall be fastened using stainless steel screws with plastic covered heads	Base Cabinet : Flammable/ Solvent Base Cabinet	Fitting : Laboratory grade water faucet for cold water, certified to BS EN 5412 : 1996, BS EN 248 : 2002, SS 375 : 2001, and AS/NZS 4020 : 2005 (Gas faucet is OPTIONAL, not supplied on standard configuration)	Cup sink: PP material, flushed installed with the worktop	Bottle Trap : PP material	Exhaust System : Chemical resistant centrifugal fan RPM : 1450, Capacity : 900CMH@540Pa, 4800CMH@180Pa, Power Rating : 1.1 kW, Voltage / Phase : 415V / 3-phase, Elec Frequency : 50 Hz	Housing / Casing : Single block strong high density UV treated and recyclable polypropylene (PPH) with no welded joint. Reversible and rot able to any the 8 standard discharge positions by 45° increments	Wheels: Forward curved centrifugal type impeller made, of injection molded PPH	Fan wheel supplied with hub cap constructed of PPH. Wheels electronically and dynamically balanced to ISO 1940	Motors : Direct drive, asynchronous, single or three phase, IP55. Single speed: three phase 230/400 V-50/60Hz, single phase 230V-50Hz. Explosion proof motors available on request. Motor is outside the airstream. Three phase motors speed adjustable by variable frequency inverter drive.	Performance: Fan performance based on tests conducted in accordance with AMCA 210-85 and ISO 5801. PPH casing and wheel recommended up to 60°C.	Ducting : Standard PVC pipe with 8 or 12 inch diameter	Illumination : Standard TL fluorescent lamp	Include : 4 Ft Supreme Air General Purpose Fume Hood Standard Package, Chemical Resistant Centrifugal Fan, Basic Exhaust System Installation Package, Flammable/ Solvent Base Cabinet	

No.	Nama Barang		Spesifikasi	Gambar
		c.	Dimensi (p x l x t) : approx. 1500 x 600 x 2400 mm	Material: Mild steel min 1.2 mm finishing epoxy coat	Alas Meja Kerja: Plenolic resin Black Tahan Larutan kimia dan asam	Pintu: Rail Stainless, Sliding dengan Kaca transparan	Lampu : TL 1 x 20 Watt	Voltage : 220 VAC	1 unit Blower : Chemical resistant min 1/2 PK	Include Pipa Blower : Terbuat dari PVC dia min 8"	Cerobong	Scrubber	Instalasi Listrik : Dirancang sedemikian rupa sehingga mudah diperbaiki	Pengaturan On/off listrik , blower : Terdapat disisi depan lemari asam	Water Outlet : Bench berbahan Khusus tahan kimia	Nozzle : Polypropylene dan tahan terhadap tumpahan larutan kimia	Sink : Polypropylene dilengkapi dengan bottle trap 1 set	Instalasi air : PVC	Pengaturan Kran air terdapat di sisi depan lemari asam	
		d.	Ukuran approx. 1500x750x2400mm| Dinding luar: Multiplex min 18mm dilapisi dengan HPL Sheet Germany yang tahan panas, tahan kimia, dan tahan gores. Dinding dalam phenolic resin 6mm| pintu dengan kaca tempered/safety laminated/acrylic dengan system sliding naik-turun yang dapat diatur tinggi rendahnya. Meja kerja dari Multiplex min 18mm dilapisi dengan phenolic resin. Terdapat stopkran gas, stopkran air, sink(wastafel), stop kontak lampu penerang, switch lampu dan switch blower, storage cabinet. Fume hood fans dibuat dari bahan fiber glass atau PVC polyethylene, diameter cerobong min 8 inch, kekuatan motor ½ PK, motor speed 1400 rpm.	
11.	Mikroskop Binocular	a.	CFI Infinity Optical System	40 – 1000 X	Quadruple click-stop nosepiece	Eyepiece tube (anti-mold): Binocular tube (inclination: 30°; 360° rotatable Siedentopf-type, Interpupillary distance: 47-75 mm)	Eyepoint height can be raised 34mm by swinging the eyepiece tube front part	E1-CFI 10X (F.O.V 18mm)	Coarse motion: 37.7mm per rotation, Fine motion: 0.2mm per rotation with 2µm scale increments	Abbe condenser (made of glass), N.A 1.25	CFI Plan Achromat 4x, 10x, 40x, 100x oil	High luminescent white LED illuminator with Fly eye lens is a low power	LED for 60,000 hours operation, Includes : E100 LED Main body (220-240V) |Binocular Eyepiece Tube, anti-mould	Eyepiece 10X with diopter adjustment on each eyepiece	Abbe condenser with objective position guide	Plan Achromat 4X, N.A. 0.10, W.D. 25mm (FOV18)	Plan Achromat 10X, N.A. 0.25, W.D. 6.7mm (FOV18)	Plan Achromat 40X, N.A. 0.65, W.D. 0.6mm (FOV18)	Plan Achromat 100X oil, N.A. 1.25, W.D. 0.14mm , spring- loaded (FOV 18mm)	Immersion oil A, 8cc	Power Cord BE	Anti-mold agent	

No.	Nama Barang	Spesifikasi		Gambar
		b.	Binocular Biological microscope, magnification : 40x-1000x, consist of: Optical System: UIS2(Universal Infinity System) optical system; Illumination: Built-in transmitted Kohler illumination system, 2.4 W LED; System Focusing: Stage height movement (coarse movement stroke: 15 mm) • Stroke per rotation for coarse adjustment knob: 36.8 mm, Focusing stopper • Torque adjustment for coarse adjustment knob • Fine focus knob (minimum adjutsment gradations: 2.5 ?m); Nosepiece: Revolving quadruple nosepiece Inward; Stage: Wire movement mechanical fixed stage, (W × D): 211 mm × 154 mm • Traveling range (X × Y): 76 mm × 52 mm • Single specimen holder• Specimen position scale • Stage XY movement stopper; Observation tube Eyepiece: 30º inclined binocular tube, interpupillary distance adjustment range: 48-75 mm; Condenser: A pair (10X), Field Number (FN) : 20 (anti-fungus), Abbe type with aperture iris diaphragm, NA : 1.25; Objective lens: Plan Achromatic 4X, NA: 0.10, WD: 18.5 mm (anti-fungus); Plan Achromatic 10X, NA: 0.25, WD: 10.6 mm (anti-fungus); Plan Achromatic 40X, NA: 0.65, WD: 0.6 mm (anti-fungus); Plan Achromatic 100X, NA: 1.25, WD: 0.13 mm (anti-fungus)	
		c.	Magnification: 40X- 1600X; Optical Head: Sliding Binocular Head, Interpupillary Distance 55 - 75 mm; Nosepiece: Quadruple revolving nosepiece; Eyepiece: Pair Eyepiece WF 10X /18 mm Widefield Pair Eyepiece P 16X; Objectives: BOECO Semi-plan Achromat DIN Objective 4x/0.10 BOECO Semi-plan; Achromat DIN Objective 10x/0.25 BOECO Semi-plan Achromat DIN Objective 40x/0.65, spring loaded BOECO Semi-plan Achromat DIN Objective 100x/1.25, Oil, spring loaded; Stage: Double layer mechanical specimen stage. 140 x 140 mm Travel area 75 x 50 mm, Right hand stage handle; Focusing: Low position, coaxial coarse and calibrated fine focus control, with graduation reading 2 microns per division. Total focusing range 20 mm., Safety autofocus stop unit. Condenser: Abbè Brightfield condenser, n.A. 1,25, Integrated Iris diaphragm and filter tray. With rack & pinion height adjustment; Illumination: 6V 20W Halogen, light intensity adjustable; Body /power: Sturdy body with supportive rubber and inbuilt power supply 110-240V; Supplied with: Dust cover, blue + green filter, immersion oil, 1 spare halogen bulb and instruction manual Dimension min. 170(W) x 250(D) x 375(H) mm; Weight: min. Netweight 7,65 kgs, Grossweight 9,5 kg; Packing: Two styrofoam shelves in a cardboard box, 290(W)x330(D)x530(H) mm	

No.	Nama Barang	Spesifikasi		Gambar
12.	Timbangan Analitik	a.	capacity (g) min. 210; Repeatability (Std Dev) 0,1mg; Readability d (g) 0,0001; Linearity (mg) 0,3; Application modes : weighing, part counting, percent; platform size (mm) approx. 90 dia. Cal Weight-Span (g) 100g or 200g; Cal Weight-Linearity (g) 100g+200g; Taring Time 1 Second; Stabilization Time 3 Seconds; Draftshield	
		b.	Capacity: min. 220 g; Minimum display: 0.1 mg; Pan size: ø 91 mm; Repeatability : $\pm$ 0.1 mg; Linearity : ± 0.2 mg; Durable, high-performance aluminum alloy mass sensor, Automated calibration can be started by pressing keys.	
		c.	Maximum Capacity min 220 g; Readability 0.1 mg; Repeatability (Test Weight) 0.1 mg (200 g); Minimum Weight (USP), Typical 0.16 g; Weighing Pan Diameter 90 mm; Interfaces RS232; Adjustment Internal; Resolution 0.1 mg; Housing Die-cast aluminum, plastic ABS; Dimensions (DxHxW) approx. 344 mm x 344 mm x 210 mm; Hygenic Design	
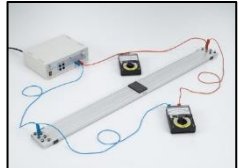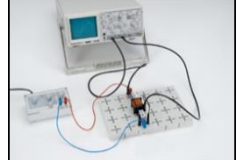
No.	Nama Barang	Spesifikasi		Gambar
13.	Universal Oven	a.	Gravity convection technology for gentle drying & heating with low air turbulences; Perfect for working with materials that are sensitive to airflow such as powders and foils; Interior material: stainless steel 1.4301; Rounded interior corners; Microprocessor control; Automatic overtemperature alarm; Stackable with optional stacking kit; Easy calibration, routine check upon startup for optimum performance; Timer function: choice of weekly / hourly / realtime; Fresh air damper: electronically controlled; Access port for independent data monitoring; RS232 Interface; Programmable ramps and dwells; Boost function for accelerated heat-up; Dry alarm contact for connection of alarm device; Large, easy to view vacuum fluorescent digital display; Temperature range: approx 50-330°C; Spatial temperature deviation at 150°C: ± 3°C; Temperature deviation over time at 150°C: ± 0.3°C; Footprint: 0.36 m2; Chamber volume: min 99 liter; Chamber dimensions: approx. 438 x 580 x 389 mm (WxHxD); Exterior dimensions: approx. 640 x 820 x 565 mm (WxHxD); Number of shelves: 2 pcs supplied, max. 16 pcs; Max. shelf load: 25 kg; Power: 230V, 50Hz, 3,100 W, 13.5A.	
		b.	Textured Stainless Steel Casing: w x h x d: approx 745 x 867 x 584 mm, fully insulated stainless steel door with 2-point locking (compression door lock), rear zinc-plated steel; Interior - Heating Concept: w x h x d: appox 560 x 480 x 400 mm, min 108 l, easy-to-clean interior,made of stainless steel,reinforced by deep drawn ribbing with integrated and protected large-area heating on four sides: • 2 stainless steel grids, • Max. loading of chamber: 175 kg; Temperature Range: • min. 5°C above ambient up to +300°C Voltage / Power Rating, • 230 V (+/- 10%), 50/60 Hz / approx. 2.800 W, • 115 V (+/- 10%), 50/60 Hz / approx. 2.200 W	

No.	Nama Barang	Spesifikasi		Gambar
		c.	Measures: Interior volume [L] min 114, Net weight of the unit (empty) [kg] min 54, permitted load [kg] 150, Load per rack [kg] 30; Temperature range 6 °C above ambient temperature to [°C] 300; Temperature variation at 150 °C [± K] 2.0; Temperature fluctuation at 150 °C [± K] 0.4; Heating-up time to 150 °C [min] 45; Recovery time after 30 seconds door open at 150 °C [min] 16; Electrical data: Rated Voltage [V] 230, Power frequency [Hz] 50/60, Nominal power 1250 Watt, Unit fuse [A] 6.3, Phase (Nominal voltage) 1~; Measures – Doors: Unit doors 1; Measures - Internal Dimensions: Width [mm] 510, Height [mm] 530, Depth [mm] 425; Measures - Outer dimensions: Width net [mm] 710, Height net [mm] 735, Depth net [mm] 605, Wall clearance back [mm] 160, Wall clearance sidewise [mm] 100; Energy consumption at 150 °C 250 Wh/h; Number of shelves (std./max.) 2/5; High temperature accuracy thanks to APT.line™ technology; Natural convection; Controller with LCD display; Electromechanical control of the exhaust air flap; 2 chrome-plated racks; Units up to 115 L are stackable; Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm; Ergonomic handle design; Excellent temporal and spatial temperature accuracy and high energy efficiency.	
		d.	It will also use a gravity-convection when drying minuscule samples such as those that come in powered form. This equipment can also be used for drying, baking, sterilizing, evaporating, heat-treating, annealing, testing, etc. Temp. Range : Ambient +10°C to 220°C (ambient +18°F to 428°F).; Air circulation type : Natural.; Time range : 00.00 to 99Hr 59min (MIN SEC) Selectable Digital Counter Timer.; Temp. & Time controller : microprocess PID membrane Touch Digital Controller.; Heater capacity : 1200 W.; Capacity : 100 L.; Material Internal : Stainless steel.; Material external : Steel Plate with powder heating coated.; Shelves : 2 supplied (15 maximum). Safety device : Automatic reset function incoming power cut, Buzzer on when set time arrived, Door open alarm, Electric leakage breaker, Over temp. Controller.; Dimension external : 630Wx540Dx930Hmm.; Weight : 50kg.; Electrical requirements : 230V, 50/60 Hz, 1phase, 5.2 A	
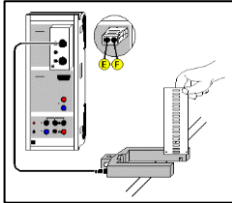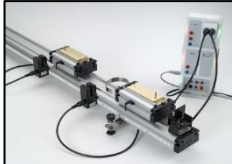
No.	Nama Barang	Spesifikasi		Gambar
14.	UV-Visible Spectrophotometer	a.	Optical Design : Dual beam; Spectral Bandwidth : 2 nm; Light source : Xenon Flash Lamp; Detector Type : Dual Silicon Photodiodes; Wavelength Range : 190 nm – 1100 nm; Wavelength Accuracy : ±0.5 nm; Wavelength Repeatability : < ±0.2 nm; Wavelength Scan Speed : Slow, medium and fast - up to 1600 nm/min; Wavelength Data Resolution : 0.2 nm, 0.5 nm, 1 nm, 2 nm, 5 nm; Photometric Range : −2A to +3.5A; Photometric Display : -3A to +5A; Photometric Accuracy Instrument : ±0.002A at 0.5A, ±0.004A at 1.0A, ±0.008A at 2.0A; Photometric Repeatability : ±0.001A at 1A; Noise : (RMS at 500 nm 60 consecutive measurements) ≤0.00020A at 0A at 260 and 500 nm, ≤0.00030A at 1A at 260 and 500 nm; ≤0.00040A at 2A at 260 and 500 nm; Drift : (At 500 nm after 1 hour warmup) <0.0005A/Hr; Stray Light : < 1.0%T 198 nm (KCl) , <0.05%T at 220 nm (NaI), <0.03%T at 340 nm (NaNO2); Baseline Flatness : ±0.002A; Display : 7-inch color touchscreen, tiltable, high definition, 800 × 1280 pixels; Keypad : Touchscreen; Dimensions (LWH): approx. 35.5 x 38.5 x 19.5 cm; Weight (Metric): approx. 7.5 kg; Power Requirements : External AC to DC converter. Voltage and Frequency (Hz) selected automatically, 100–240 volts, 50–60 Hz. Include : 8 Position Carousel for 10mm Pathlength Cells, Quartz cuvette; Qty : 8 pcs, Printer Assembly	
		b.	Optical System Split beam; Scan Speed Selectable; Wavelength range 190 – 1100nm; Wavelength Accuracy : ± 0.1 nm; Wavelength Reproducibility : ?0.2nm; Spectral Bandwidth : 2.0 nm; Photometric mode : Transmittance, Absorbance, Energy; Photometric Range : -0.3 – 3.0 Abs; Photometric accuracy : 0.002A (0-0.5A), 0.004A (0.5 -1.0A), 0.3%T (0-100%T); Photometric Reproducibility : 0.001Abs (0 – 0.5A), 0.002A (0.5 - 1.0A), 0.15%T (0 -100%T); Photometric Noise : 0.001A (500nm) 30min warm-up; Baseline Flatness : 0.002A (200 - 1000nm); Baseline Stability : 0.001A/h (500nm, 0Abs), 2hr warm-up; Stray Light : ? 0.05% T (220nm NaI, 340 nm NaNO2); Standard Functionality : Photometric Measurement (Quantitative, Multi-wavelength, Spectrum and Kinetic Measurement with program card); Detector : Silicon photo diode; Light Source : Tungsten Halogen and Deuterium arc lamps; Display : Digital LCD Display; PC Interface : RS232; Power Supply : Switchable 95 - 250VAC 50 - 60Hz; Software Support : Local and UV Win; Weight : 11 Kg; Dimensions (Width, Depth, Height) : 476 mm, 362 mm, 225 mm; FEATURE & FUNCTIONS: High performance fixed 2nm spectral bandwidth, Low stray light 0.05%T (T60U), Wavelength accuracy +/- 1nm (T60U), Holographic blazed grating 1200 lines /mm, Local control software for photometric fixed wavelength measurement, Easily upgraded to include quantitative analysis, multi wavelength spectrum & kinetics, Built in cell holder storage, Robust modular design with a small footprint. Included: Mini Printer; STANDARD ACCESSORIES : 8 position 10mm path length motorised cell holder, 10mm Quartz cells (2 pcs), Black block for dark current correction, Fuse (2A), Power Cord, Instruction manual, Dust Cover, Quantitative program card	
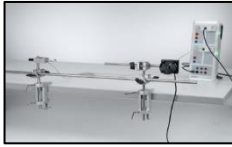
No.	Nama Barang	Spesifikasi		Gambar
		c.	Optical Design : Double Beam with sample and reference cuvette; positions; Czerny-Turner Monochromator; Spectral Bandwidth : 1 nm; Light Source : Xenon flash lamp; Detector : Dual Silicon Photodiodes; Scan Ordinate Modes : Absorbance, % Transmittance, % Reflectance, Kubelka-Munk, log (1/R), log (Abs), Abs*Factor, Intensity; Wavelength Range : 190 –1100 nm; Wavelength Accuracy : ±0.2 nm (541.9, 546.1 nm mercury lines) ±0.5 nm (full range 190–1100 nm); Wavelength Repeatability : ?0.01 nm (546.1 nm mercury line, SD of 10 measurements); Scanning Speed : <1 to 6000 nm/min; variable; Data Intervals : 10, 5, 2, 1.0, 0.5, 0.2, 0.1 nm; Photometric Range : > 3.5 Abs; Photometric Display Range : -0.3 to 4.0 A; Photometric Accuracy :1A: ±0.002 A; 2A: ±0.004 A; Measured at 440 nm using neutral density filters traceable to NIST; Photometric Repeatability : ±0.0002 A; Photometric Noise 0A: ?0.00008 A; 260 nm, 1.0 nm SBW, RMS; Photometric Drift (Stability) : <0.0005 A/hr; 500 nm, 1.0 nm SBW, 1 hour warm-up; Stray light : KCl, 198 nm: ?0.40% T, NaI, 220 nm: ?0.027% T, NaNO2, 340 nm: <0.025% T; Baseline flatness: ±0.0006 A; 200–800 nm, 1.0 nm SBW, smoothing, Keypad : Sealed Membrane, Electrical Supply : 100 – 240 V, 50 – 60 Hz, Selected Automatically; 150 W maximum, Include : Euro/US/UK power cords, Single Position Cell Holder, Stylus for touchscreen interaction, INSIGHT 2 software for Computer control of instrument and off-line data analysis, USB memory device, Quartz cuvette; Qty : 6 pcs, Personal Computer core i5 branded; Printer ink jet.	
		d.	Wavelength range 190 to 1100 nm; Spectral bandwidth 1 nm (190 to 1100 nm); Wavelength display 0,1 nm increment; Wavelength setting 0,1 nm increment (1 nm increments when setting scanning range); Wavelength accuracy ± 1,0 nm at D2 peak 656.1 nm, ± 0,3 nm for enire range; Wavelength repeatability ± 0,1 nm; Wavelength slew rate About 6000 nm/min; Wavelength scanning speed 3000 to 2 nm/min; Lamp interchange wavelength Automatic interchange linked to wvelength. The interchange wavelength can be set freely in the range of 295 to 364 nm; Stray light Less than 0,02% at 220 nm (NaI), Less than 0,02% at 340 nm (NaNO2), Less than 0,01% at 198 nm (KCl); Photometric system Double beam optics; Photometric range Absorbance: -4 to 4 Abs, Transmittance: 0% to 400%; Photometric accuracy ±0,002 Abs at 0,5 Abs, ±0.004 Abs at 1,0 Abs, ±0.006 Abs at 2,0 Abs; Photometric repeatability Less than ±0,001 Abs at 0,5 Abs, Less than ±0.001 Abs at 1,0 Abs, Less than ±0.003 Abs at 2,0 Abs; Noise level Less than 0,00005 Abs (700 nm); Baseline flatness Less than ±0,0006 Abs at 1100 nm to 190 nm (one hour after light source is turned ON); Baseline stability Less than ±0,0003 Abs/Hr at 700 nm (one hour after light source is turned ON); Light source 20-W Halogen lamp and Deuterium lamp (socket type). Built-in light source auto position adjustment. Monochromator Blazed holographic grating in Czerny-Turner mounting; Detector Silicone photodiode; INCLUDEED: Personal Computer (Desktop) BRANDED: Processor Core i3-6100, Memory 4GB DDR3, Hard disk 500GB, Chipset Intel H110 Express, Memory Up to 32GB DDR4 -2133, Integrated Intel HD Graphics , Integrated Realtek RTL8111G-	
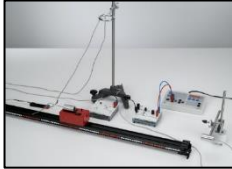
No.	Nama Barang	Spesifikasi		Gambar
			CG; Integrated Gigabit Ethernet Controller, HP Parallel Port Seral Port, HP USB Wired Keyboard & Mouse, DVD RW, PS 180 watt, 6 USB 2.0 | 2 USB 3.0, 1 DVI; Monitor 18.5"; Printer Inkjet; UV 10mm quart cell (2 pcs); UPS 1KVA (1 unit)	
15.	Waterbath	a.	Control microprocessor PID-temperature controller with integrated autodiagnostic system with fault indicator| solid state switching unit| one Pt100 sensor class A in 4-wire-circuit| integrated digital timer from 1 min. to 99,59 hours for: ON continuous operation, WAIT (delayed on for continuous and limited timed operation), HOLD digital display (LED) of set and actual temperature (0,1 °C resolution) and of (remaining) programme time, LEDs for indication of programme status, Overtemperature protection (double) in case of overtemperature due to failure, the heating is switched off at approx. 10°C above the set temperature (fixed value) mechanical temperature limiter TB protection class 1 switching the heating off at approx. 30 °C above max. temperature of the bath. Textured Stainless Steel Casing: LWH : 578 x 436 x 296 mm, material 1.4301 (ASTM 304), corrosion resistant| Interior - Heating Concept: LWH : 350 x 290 x 220 mm, 22 l, easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing, material no. 1.4301 (ASTM 304), laser-welded corrosion-proof large-area heating on three sides| Temperature Range: min. 5 °C above ambient up to +95 °C with additional boiling mode (+100 °C), Voltage / Power Rating: 230 V (+/- 10%), 50/60 Hz ca. 2.000 W (during heating)| Include: Flat stainless steel cover, with concentric ring sets (Number of openings : 6)	
		b.	Temperature working range Ambient Temperature + 5 °C to 80 °C; Capacity (Tank volume) 21 lt; Type of thermoelement NTC; Temperature control PID Digital control; Load switching element SSR (Solid State Relay); Thermostat setting increments in 0.1 °C steps; Thermostat working accuracy ± 0.1 °C; Thermometer display increments in 0.1 °C steps; Tank temperature accuracy ± 0.5 °C; Postpone I Process time 1 min - 99 hours 59 min; Timing begins When reached set temperature value; Fuse 6 Amps; Tank material Stainless steel; Casing material Stainless steel; Tube capacity 96 pcs; Number of tube support 4 pcs; Power rating 750W; Power supply AC 190-240 V/50-60 Hz	

No.	Nama Barang	Spesifikasi		Gambar
16.	Electromagnetism Experiments	a.	Comprehensive Electromagnetism Bundle: Alnico Bar Magnets (2 Pack)	Zero Gauss Chamber	AC/DC Electronics Laboratory	Faraday Ice Pail	Charge Producers and Proof Plane	Conductive Spheres	Conductive Shapes	Electrostatics Voltage Source	Basic Electrometer	Basic Variable Capacitor	Field Mapper Kit	PASPORT 2-Axis Magnetic Field Sensor	PASPORT Current Probe	Banana Plug Cord Sets, 30 cm Length	Plotting Compass Set (20 pack)	Dip Needle	Voltage Sensor (unshrouded)	BNC Function Generator Output Cable (unshrouded)	Resistor Capacitor Inductor Network (UI-5210)	included: universal interface with compatible software for windows/mac with site lisence and branded personal computer with min. Processor core i3 and original min. windows 7 SP1.
		b.	**Ohm's Law :** AC/DC Power supply 0 - 12 V| Apparatus for resistance measurement| Connecting lead 19 A, 100 cm, red/blue, pair| Connecting lead 32 A, 100 cm, black| Connecting lead 32 A, 25 cm, black| Multimeter analog	
		c.	**Impedance and phase shift:** Capacitor 0.1 μF| Capacitor 1 μF| Capacitor 10 μF| Capacitor 4.7 μF| Coil 1000 turns| Coil 500 turns| Connecting lead 19 A, 100 cm, red/blue, pair| Function generator S 12| Oscilloscope 40 MHz, two-channel, analogous| Plug-in board| Resistor 1 Ohm| Resistor 10 Ohm| Resistor 100 Ohm| Screened cable BNC/4 mm plug	
		d.	**Law of image:** Aspherical condenser with diaphragm holder| Bulb 6 V/30 W, E14, set of 2| Lamp housing with cable| Lens in frame, f = +100 mm| Lens in frame, f = +150 mm| Lens in frame, f = +200 mm| Lens in frame, f = +300 mm| Lens in frame, f = +50 mm| Lens in frame, f = -100 mm| Multiclamp| Objects for investigating images, pair| Plane mirror 14 cm x 9 cm, with ball joint| Screen, translucent| Small optical bench| Stand base V-shape, small| Steel tape measure, l = 2 m/78"| Transformer 6/12 V	
		e.	**Balmer series and Rydberg's constant:** Adjustable slit| Balmer lamp| Holder with spring clips| Lens in frame, f = +100 mm| Lens in frame, f = +50 mm| Multiclamp| Power supply unit for the Balmer lamps| Ruled grating 6000/cm (Rowland)| Screen, translucent| Small optical bench| Stand base V-shape, large Steel tape measure, l = 2 m/78"	

No.	Nama Barang	Spesifikasi		Gambar
17.	Mechanics Experiments	a.	Comprehensive Mechanics System: Force Accessory Bracket	Mini Rotational Accessory	Cart Adapter Accessory	Compact Cart Mass (2)	Pi Set Time-of-Flight Accessory	Photogate Mounting Bracket	Mini Launcher	Dynamics Cart Magnetic Damping	Mini Ballistic Pendulum Accessory	Spring Cart Launcher	1.2 m PAScar Dynamics System	Super Fan Cart	Density Set	Discover Friction Accessory| Large Rod Base	45 cm Stainless Steel Rod	90 cm Stainless Steel Rod	Picket Fences (Smart Timer) (2)	Mass and Hanger Set	Elastic Bumper	IDS Spring Kit	Picket Fence	Large Table Clamp	Photogate Head (2)	Pendulum Clamp	Multi-Clamp (2)	Car Sail	Variable Speed Motorized Cart	Centripetal Force Pendulum	PASPORT Motion Sensor (2)	PASPORT 3-Axis Accelerometer/Altimeter	PASPORT Rotary Motion Sensor	PASPORT High Resolution Force Sensor (2)	Pulley Mounting Rod	No-Bounce Pad	Braided Physics String	Comprehensive Physics System Experiment Manual	included: universal interface with compatible software for windows/mac with site lisence and branded personal computer with min. Processor core i3 and original min. windows 7 SP1.	
		b.	**Free Fall (with sensor-pc interface) :** Forked light barrier| g ladder| Multi-core cable, 6-pole, 1.5 m| Sensor-PC interface| Software| Timer S	
		c.	**Newton 2nd Law, one-dimensional motion (with pc-interface)|** Additional weights, pair| Combination spoked wheel| Connecting lead 19 A, 100 cm, red/blue, pair| Fishing line, 10 m, set of 2| Holder for combination spoked wheel| Holding magnet| Laser motion sensor S| Newton weights| Sensor-PC interface| Slotted mass hanger 10 g, small| Slotted weight 10 g, grey| Software| Stand base V-shape, small| Track, 1.5 m| Trolley	
		d.	**Collision Law - ellastic collision (with photogate and pc-interface):** Additional weights, pair| Combination light barrier| Impact spring for track| Multi-core cable, 6-pole, 1.5 m| Sensor-PC interface| Software| Timer S| Track, 1.5 m| Trolley	
		e.	**Moment of inertia and Steiner's theorem:** Ball for torsion axle| Circular disc for torsion axle| Cylinders for torsion axle, set| Hand-held stop watch I, mechanical| Stand base V-shape, small| Torsion axle	

No.	Nama Barang		Spesifikasi	Gambar
		f.	**Mechanical conservation of energy:** Counter S| Forked light barrier| Holding magnet adapter with a release mechanism| Maxwell's wheel| Multiclamp| Multi-core cable, 6-pole, 1.5 m| Saddle Base| Scale with Pointers| Stand base MF| Stand rod 100 cm, 12 mm Ø| Stand rod 50 cm, 10 mm Ø| Support block	
		g.	**Modulus of Elasticity (Young Modulus):** Copper wire, 0.2 mm Ø, 100 m| Force sensor S, ±50 N| Iron wire, 0.20 mm Ø, 100 m| Multiclamp| Rotary motion sensor S| Sensor-PC interface| Simple bench clamp| Software| Stand rod 100 cm, 12 mm Ø| Stand rod 25 cm, 10 mm Ø| Steel tape measure, l = 2 m/78"	
18.	Thermodynamics/Waves Bundle Experiments	a.	Comprehensive Thermodynamics/ Waves Bundle: Sound Sensor | Energy Transfer - Calorimeter | Precision Diffraction Slits | Basic Optics Geometric Lens Set | Concave/Convex Mirror | Green Diode Laser | Basic Optics Viewing Screen | Basic Optics Ray Table | Basic Optics Light Source | Adjustable Lens Holder | Adjustable Focal Length Lens | Color Mixer Accessory Kit | Color Mixer | 1.2 m Optics Track -- Basic Optics | Ray Optics Kit | Accessory Lens Set -- Basic Optics | Diode Laser -- Basic Optics | Polarization Analyzer -- Basic Optics | Linear Translator -- Basic Optics | PASPORT Absolute Pressure Sensor | PASPORT Quad Temperature | PASPORT High Sensitivity Light Sensor | Resonance Boxes: Sympathetic Resonance Box Set | Banana Plug Cord-Red (5 Pack) | Radiation Cans | Absolute Zero Sphere | Ideal Gas Law Apparatus | Economy Resonance Tube | String Vibrator | Open Speaker (WA-9900) included: universal interface with compatible software for windows/mac with site lisence and branded personal computer with min. Processor core i3 and original min. windows 7 SP1.	
		b.	**Simple pendulum**: Multiclamp| Physical pendulum| Rotary motion sensor S| Sensor-PC interface| Software| Stand base MF| Stand rod 25 cm, 10 mm Ø| Stand rod 50 cm, 10 mm Ø	
		c.	**Continuous transverse wave:** Attenuator for wave machine| Build-in brake for wave machine| Connecting lead 19 A, 100 cm, black, pair| Connecting lead 19 A, 100 cm, red/blue, pair| Connecting lead 19 A, 50 cm, black, pair| Drive module for wave machine| Hand-held stop watch I, mechanical| Low-voltage power supply| Steel tape measure, l = 2 m/78"| Transformer 2 to 12 V, 120 W| Wave machine, basic module 1	

No.	Nama Barang		Spesifikasi	Gambar
		d.	**Accoustic Doppler efect:** AC-amplifier| Accessories acoustic Doppler effect| Battery 1.5 V (AA), set of 4| Clamp rider, 5 pieces| Connecting lead 19 A, 100 cm, red/blue, pair| Connecting lead, protected, 8 m| Counter S| Feet for metal rails, pair| Generator 40 kHz| Hand-held stop watch I, mechanical| Multiclamp| Oscilloscope 40 MHz, two-channel, analogous| Precision metal rail, 1 m| Rail connector| Saddle Base| Screened cable BNC/4 mm plug| Set 6 two-way adapters, black| Stand base V-shape, small| Stand ring with clamp, 70 mm Ø| Stand rod 25 cm, 12 mm Ø| Stand rod 75 cm, 12 mm Ø| Trolley with electric drive| Ultrasonic transducer 40 KHz	
		e.	**Equation for ideal gases:** Beaker DURAN, 250 ml, squat| Clamp with jaw clamp| Gas thermometer| Hand vacuum pump| Hot plate| Mobile-PC interface| NiCr-Ni adapter S, Type K| Stand base V-shape, small| Stand rod 47 cm, 12 mm Ø| Temperature probe NiCr-Ni, 1.5 mm, Type K	
		f.	**Heat capacity for gases:** Aneroid barometer| Connecting lead 19 A, 100 cm, red/blue, pair| Connecting lead 19 A, 50 cm, blue, Connector, straight, PP, 4 ... 15 mm diam.| Fine regulating valve for Minican gas cans| Function generator P| Gas elastic resonance apparatus| Hand-held stop watch I, mechanical| Minican gas can, Carbon dioxide| Minican gas can, Neon| Multimeter analog| Oscillation tube with Mariotte's bottle| Plastic beaker, 1000 ml| Rubber tubing, 1 m x 4 mm diam.| Silicone tubing, 7 mm diam., 1 m| Stand base V-shape, small| Three-way valve, T-shaped, ST nozzles| Vaseline, 50 g	
19.	Digital Osilloscope	a.	Bandwidth : 50MHz; Channels : 4; Maximum Sample Rate: 1GSa/s (1 channel active), 500MSa/s (2 channels active), 250MSa/s (3 or 4 channels active); Maximum Memory Depth : 12Mpts standard, 24Mpts optional - See licence MEM-DS1000Z; Maximum Waveform Capture Rate : 30,000wfms/s; Time-Base Accuracy : ≤±25ppm; Time-Base Drift : ≤±5ppm/year; Time-Base Scale : 5ns/div to 50s/div; Input Impedance : 1MΩ ± 2% // 13pF ± 3pF ; Vertical Scale : 1mV/div to 10V/div; DC Gain Accuracy : ±2% Full Scale (Channel 1); ±3% Full Scale (Channels 2, 3 & 4); Bandwidth Limit : 20MHz; Real Time Waveform Record & Replay Function (Optional) : Up to 60,000 Frames; Standard Trigger Functions : Edge, Pulse Width, Slope, Video, Pattern, Duration	

No.	Nama Barang		Spesifikasi	Gambar
		b.	Channels: 2; Bandwith: 40MHz; sampling rate: 1Gsa/s; Equvalent: 50 Gsa/s; memory: single channel: 2Mpts, Double Channel: 1 Mpts; Rise time: <8.8ns; Input impedance: 1M ohm || 17Pf; sec/div range 10ns/div-50s/div; scan: 100ms-50s/div; display 7" Wide screen LCD Color; USB Host/Device: Support USB Printer and USB F lash Drive; PictBridge Function; Easy scope Software; 12 Languages; Industrial Power Design, Troubleshooting, Installation, and Maintenance; Electronics Design, Troubleshooting, Installation, and Maintenance; Circuit Design & Debug; Educational Lab & Training Institutions; Repair & Service; Production Test & Quality Inspection	
20.	Multimeter Digital	a.	Maximum voltage between any terminal and earth ground : 1000 V; Display (LCD) : 4000 counts, updates 3/sec; Battery type : 2 AA, NEDA 15A, IEC LR6; Battery life : 500 hours minimum; Operating : 0 °C to 40 °C; Storage : -30 °C to 60 °C; Temperature coefficient 0.1 X (specified accuracy) /°C (<18 °C or >28 °C); Fuse protection for current inputs : 440 mA, 1000 V Fast Fuse, Fluke specified part only; 11A, 1000V Fast Fuse, Fluke specified part only; Size (HxWxL) : 183 x 91 x 49.5 mm; Weight : 455 g; IP rating : IP 40; Safety : IEC 61010-1, IEC61010-2-030 CAT III 600 V, CAT II 1000 V, Pollution Degree 2; Electromagnetic environment IEC 61326-1: Portable	
		b.	Display LCD display, approx. 256 × 64 mm; DC voltage Range 200 mV - 1000 V; Accuracy 0.0035+0.0005; AC voltage: Range 200 mV - 750 V; Accuracy 0.06+0.03; DC current Range 200 µA - 10 A; Accuracy 0.050+0.005; AC current Range 20 mA - 10 A; Accuracy 0.10+0.04; Resistance (2-wire and 4-wire) Range 200 Ω - 100 MΩ; Accuracy 0.010+0.001 Capacitance Range 2 nF - 10000 µF Accuracy 1 + 0.5; Frequency Range 43 Hz - 1 MHz / 1 µsec – 0.33 sec, Accuracy 0.007; Interfaces GPIB, LAN, USB 2.0 device and host, RS-232C; Power AC 100 V - 120 V, 45 Hz - 440 Hz; AC 200 V - 240 V, 45 Hz - 66 Hz; Dimensions (H × W × D) 107 × 231 × 290 mm Real 5' digits readings resolution; Up to 123 rdgs/s measurement speed; True-RMS AC Voltage and AC Current measuring; Quickly Save or Recall the 10 groups of Preset Configuration; Preset 10 groups of Standard SensorConfiguration, built-in cold terminal compensation for thermocouple; Clone the instrument configurations into other	

No.	Nama Barang	Spesifikasi		Gambar
		c.	DC/AC Voltage, DC/AC current, resistors, Diode 6 functions; Resolution : 10mV, 10mA,10mW; All measure range has protected circuit; 0.03% DCV accuracy; 20A High current Range; 750V High Voltage range; AC true RMS or AC+DC true RMS; DC VOLTAGE: Range 200mV, 2V, 20V, 1200V 5 Ranges, Accuracy (0.03%rdg + 4 digits), Input Impedance 10M W; AC VOLTAGE: Range 200mV, 2V, 20V, 200V, 1200V 5 Ranges, Accuracy 200mV ~ 200V 4 ranges, 20Hz ~ 10KHz ± (1% ± 15digits), 10KHz ~ 20kHz ± (2%rdg + 30digits), 20kHz ~ 50KHz ± (5%rdg + 30digits), 1200V 45Hz ~ 1KHz 0.5% ± 15digits, Input Impedance 10M W; DC CURRENT: Range 200mA, 2mA, 20mA, 200mA, 2000mA, 20A 6 Ranges; Accuracy 200mA ~ 200mA 4 ranges, 5Hz ~ 2KHz ± (0.5%rdg + 15digits), 2KHz ~ 10KHz ± (1% ± 15digits), 10KHz ~ 20KHz (2% ± 15digits), 2000mA ~ 20A 2 ranges, 45Hz ~ 2KHz ± (0.5%rdg + 15digits); RESISTANCE: Range 200W, 2KW, 200KW, 2000KW, 20MW 6 ranges; Accuracy 200mA ~ 200mA 4 ranges, 45Hz ~ 2KHz ± (0.5%rdg + 15digits), 2KHz ~ 10KHz ± (1% ± 15digits), 10KHz ~ 20KHz (2% ± 15digits), 2000mA ~ 20A 2 ranges, 45Hz ~ 2KHz ± (0.5%rdg + 15digits); DIODE TEST: Test Current Ranges 2KW is the best range for Diode test, there is a diode, Open Voltage Mark on the front panel of instrument; CONTINUITY BEEPER: Description, Test Current, Open Voltage; DISPLAY: 0.5" LED Display; POWER SUPPLY: AC 230V + 10% 50Hz	
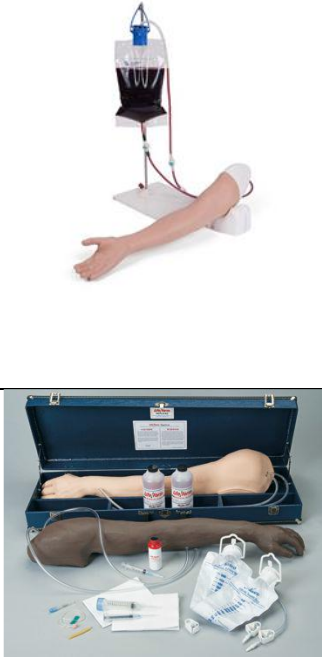
B. LABORATORIUM KESEHATAN DASAR

No	Nama Barang		Spesifikasi	Keterangan
1	Timbangan Bayi	a.	Capacity: 20 kg / 44 lbs| Graduation: 5 g < 10 kg > 10 g /0.2 oz < 22 lbs > 0.5 oz| Dimensions (WxHxD):638 x 105 x 300 mm / 25.1 x 4.1 x 11.8"| Dimensions/weighing platform (WxHxD):595 x 50 x 255 mm / 23.4 x 2 x 10"| Power supply:batteries / switch-mode power adapter included|Functions: TARE, BMIF, auto-HOLD,automatic switch-off, kg/lbs switch-over| **include: measuring rod|** Easy to operate with generouslysized cradle and easy to readLCD display.Reliable results due to theautomatic damping system.Handy and light formobile medical use	
		b.	Capacity:35 lbs, 16 kg| Graduation (g):5 g, 1/4 oz| Measure (W x H x D):550 x 180 x 290 mm , 21,7 x 7,1 x 11,4 inch| Net weight:6,4 kg , 14,1 lbs| Functions:Reset-to-zero function| CE:CE 012| Classic design and high-quality precision mechanics.Precise ascertainment of weightdue to zero adjustment.Softly curved weighing tray for maximum safety	
		d.	Kapasitas maksimal : 20kg| Akurasi pengukuran : 0.05kg (0-10kg) 0.1kg (10-20kg)| Ukuran nampan (P x L) : 54.5 x 27cm| Ukuran keseluruhan (P x L x T) 54.5 x 33.1 x 15.3cm	
2	Stadiometer	b.	Measuring range in cm:20 - 205 cm| Measuring range in inch: 8 – 81"| Graduation [Measuring Rod]: 1 mm / 1/8"| Measure (W x H x D):337 x 2.130 x 590 mm , 13.3 x 83.9 x 23.2"| Net weight: 2.4 kg , 5.3 lbs| Equipped with level for correct positioning.Simple and easy to set up – no wall fastening necessary.Large floor plate ensures stability.Result clearly visible while measuring.Convenient and easy to transport	

No	Nama Barang	Spesifikasi		Keterangan
3	electrocardiogram	a.	ECG interpretation: Marquette® 12SLTM ECG Analysis Program for Adults and Paediatrics, Computerized measurements: 12-lead analysis, ECG analysis frequency: 500 samples/second (sps),Digital sampling rate: 2,000 samples/second/channel,ECG on-screen preview: On-screen preview of acquired 10-second ECG waveform and optional 12SL measurement and interpretation, Acquisition mode: Pre-acquisition or post-acquisition, provide 10 seconds of instantaneous ECG acquisition ,Dynamic range: AC Differential ± 5mV, DC offset ±300 mV , Resolution: 4.88 µV/LSB @ 500 sps, Frequency response: −3 dB @ 0.01 to 150 Hz , Low cut-off frequency: 0.01 Hz, 0.02 Hz, 0.16 Hz or 0.32 Hz (-3 dB limits), High cut-off frequency: Configurable at 20 Hz, 40 Hz, 100 Hz or 150 Hz , Adaptive AC filter: 47 Hz to 53 Hz when set to 50Hz, 57 Hz to 63 Hz when set to 60 Hz , Common mode rejection: >100 dB (with AC filter switched on) , Input impedance: >10MΩ @ 10 Hz, defibrillator protected, Patient leakage: <10 µA, Special acquisition functions: Disconnected lead detection except RL, excessive AC noise, baseline wander and muscle tremor messages, Heart rate meter: 30 to 300 BPM ±10% or ±5 BPM, whichever is greater. Heart rates outside this range will not be displayed, Start-up time: Less than 7 seconds	
		b.	12 LEAD Interpretation algorithm, Additional short-term arrhythmia analysis mode ,Built-in Large LCD (320 x 240 dots), 3, 6, 12 Lead ECG Display, 3 Channel recorders with selectable recording formats, Internal Memory for ECG Storage	
4	Pasien Monitor	a.	10.4'' crystal-clear monitor displays up to sixwaveforms simultaneously,Resolution SVGA resolution, 800 x 600, Number of traces Up to 6, AC input 100 to 240V±10%, 50/60 Hz, 150VA, Battery Exchangeable lithium-ion,2 pcs max| Charging time 2 hours per battery pack, Run time Up to 4.5 hours| Waveform : ECG, IBP,SPO2, RESP, CO2| Measurement : HR,ST, VPC, IBP (max 2ch), SPO2, EE,PR, APNEA, NIBP, TEMP (max 4ch), CO2, CO	

No	Nama Barang	Spesifikasi		Keterangan
		b.	Dimension : 300mm (W)X265mm (H)X75mm(D)| Display : 10,2" wide colour LCD| Parameters: Waveform : ECG, IBP,SPO2, RESP, CO2| Measurement : HR,ST, VPC, IBP (max 2ch), SPO2, EE,PR, APNEA, NIBP, TEMP (max 4ch), CO2, CO| Power Supply : AC 100-250 V 50/60 HZ, 3 hours operation time on battery, weight 3kg,Resolutions 1024x600 WSVGA	
		c.	Power Supply : AC 100-250 V 6A/3A, Resolution : 1280x1024, Waveform : ECG, PLETH, RESP, CO2, IBP| Parameter : HR, ST, NIBP, IBP, SPO2, PR, RR, TEMP, ETCO2, Multi Gas| Display 12,1" colour touch screen.	
5	Tensi meter	a.	Desktop Mercury| Sphyg Accuracy:+/-3mmHg @ 50ºF(10ºC) - 104ºF(40ºC)| Sphyg Accuracy:at extended temperature range+/-3mmHg or 2% whichever is greater @<50ºF(10ºC) and >104ºF(40ºC)| Storage Temp:-4ºF (-20ºC) - 131ºF(55ºC)| Valve Type:ADFLOW| Number of tubes:2 Tubes| Cuff type:ADCUFF| Cuff size:Adult| Cuff Range:23-40cm	
		b.	Sphygmed Mercurial Sphygmomanometer| Rugged Aluminium Cashing with High Quality Coated Finishing| Black Cotton Cuff with Sphygmed Label, D-Ring, Adult| 0 - 300 mmHg Measurement Range| Latex Bulb with Valve Standard Assembly| 1 Year Calibration Warranty| ABS Mercurial Reservoir	
		c.	Housing: Terbuat dari Rugged Diecast Aluminium, ABN Begie Sandy Powder Coating Finishing| Design: Ergonomic, With bulb holder on box, Smooth open/close spring| Capillary System: 4.2 mm Glass Capilary with Red Scale Print, 99.99 % purity mercury, Hight quality plate scale with 27 O radius| Inflation system: Latex bulb with ABN Hot Stamp, Deluxe Air Release Valve with	

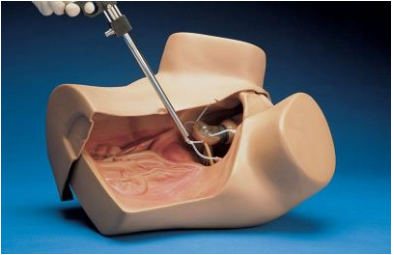| No	Nama Barang		Spesifikasi	Keterangan
			ABN Grafier, Deluxe End valve with filter, Metal Conector, ABN Cotton cuff with 2-tb latex bladder assy. Grey, bandage model Adult	
	Venipuncture Arm	a.	Soft, flexible skin| Underlying palpable veins: cephalic, basilic, dorsal metacarpal and median cubital| Realistic blood flashback| Arm allows for digital pressure to stem blood flow| Infusion tube allows for volume IV fluids to be administered| Skin is durable| Veins last for up to 500 insertions of 21g needle| Blood has been reformulated to improve leak resistance of veins. (Concentrated liquid to save you money and storage space)| Can be used with vacuum blood collection systems, needle and syringe and IV cannulas| Can be used for hybrid simulation and for professional-to-patient communication when using the optional Venipuncture Arm Harness| contains latex| Veins are easy to replace| Easy to clean, service and maintain| SkillsVenipuncture| IV Cannulation| IV Infusion| Professional-to-patient communication.1 AV Arm Vein, 1 AV Vein Module, 1 Bag & Stand Venipuncture Arm Mock Blood Supply, 1 Concentrated Venous Blood - Starter Pack, 1 Venipuncture Arm Infusion Tube, 1 Venipuncture Arm Rest, 1 Venipuncture arm skin, 3 Sachets water-based lubricant, 1 Arm shell.	
		b.	As closely as modern plastics technology allows| the simulation of the entire human arm from the shoulder to fingertips| Externally, the skin texture is realistic to touch, and the fingertips have fingerprints| the skin and veins can be easily removed and replaced when needed, providing literally, a brand new arm| The life of the replaceable skin and veins will be prolonged by utilizing smaller needle sizes (such as 20- to 25-gauge)| **contains:**Advanced Injection Arm Simulator| 3 cc Syringe with needle| 12 cc syringe with needle| 22-gauge needle| 2 fluid supply bags| infusion butterfly| pinch clamp| 2 small towels| infusion needle| intradermal sealant (2 oz.)| 2 pint bottle with blood powder| latex adapter.	
6	CPR Torso	a.	Realistic anatomy including head tilt, chin lift, chest resistance and chest rise.Sensor indicates correct hand placement.Ventilation system provides appropriate chest rise with BMV (Bag Valve Mask) and MTM (Mouth to Mouth).Enhanced measurement and feedback capabilities.Wireless connectivity with SimPad SkillReporter or Resusci Anne Wireless, SkillReporter software.Wired connectivity with SkillGuide or SimPad SkillReporter.Guidelines compliant.Simulate different chest stiffness's - 2 extra springs supplied, hard (approx. 60kg force) and soft (approx. 30kg force), with medium spring (approx. 45kg force) at guidelines depth installed at shipping.Compatible with ShockLink for more efficient and cost effective defibrillation training.Includes: Torso Manikin, 3 Decorated Resusci Manikin Faces, 2 Disposable Airways, 2 Extra Compression Springs (Hard and Soft), Semi rigid Carry Bag with integrated kneel mat, Jacket, 50 Resusci Manikin Wipes, USB cable, (for use with any USB power supply), User Guide, Important Product Information, SimPad with **Skillreporter** SW,	

No	Nama Barang		Spesifikasi	Keterangan
		b.	Realistic anatomy including head tilt, chin lift, chest resistance and chest rise.Sensor indicates correct hand placement.Ventilation system provides appropriate chest rise with BMV (Bag Valve Mask) and MTM (Mouth to Mouth).Enhanced measurement and feedback capabilities.Wireless connectivity with SimPad SkillReporter or Resusci Anne Wireless SkillReporter software.Wired connectivity with SkillGuide or SimPad SkillReporter.Guidelines compliant.Simulate different chest stiffness's - 2 extra springs supplied, hard (approx. 60kg force) and soft (approx. 30kg force), with medium spring (approx. 45kg force) at guidelines depth installed at shipping.Compatible with ShockLink for more efficient and cost effective defibrillation training.Includes: Torso Manikin, 3 Decorated Resusci Manikin Faces, 2 Disposable Airways, 2 Extra Compression Springs (Hard and Soft), Semi rigid Carry Bag with integrated kneel mat, Jacket, 50 Resusci Manikin Wipes, USB cable, (for use with any USB power supply), User Guide, Important Product Information, **Simpad SkillGuide**, User Guide, Important Product Information.	
		c.	it was designed with modular components that require no conversion kits. Individual student face masks provide maximum protection from cross contamination. The disposable face mask is designed with a one-way non-rebreathing valve. Molded hair requires no maintenance. Disposable tracheal airway and lower airway with lung bag eliminates time-consuming disinfection procedures. Five-year warranty.Quality Features: Adult and child CPR versions, Fully articulated head, neck, and jaw, Non-rebreathing airway system, Sanitary molded hair: CPR Training Capabilities: Constricted and dilated eye, Electronic monitoring options, Jaw thrust, Manual carotid pulse, Pliable abdomen for obstructed airway procedure, Xiphoid, navel, nipples, and ribcage landmarks, **Includes** basic adult torso, short sleeve jacket, sanitary face mask, disposable lower airway, disposable tracheal airway, and white fitting.	

No	Nama Barang		Spesifikasi	Keterangan
		d.	Designedwith modular components that require no conversion kits. Individual student face masks provide maximum protection from cross contamination. The disposable face mask is designed with a one-way non-rebreathing valve. Molded hair requires no maintenance. Disposable tracheal airway and lower airway with lung bag eliminates time-consuming disinfection procedures. Five-year warranty.**Quality Features**: Adult and child CPR versions, Fully articulated head, neck, and jaw, Non-rebreathing airway system, Sanitary molded hair | **CPR Training Capabilities**: Constricted and dilated eye, Electronic monitoring options, Jaw thrust, Manual carotid pulse, Pliable abdomen for obstructed airway procedure, Xiphoid, navel, nipples, and ribcage landmarks, Includes adult full-body manikin, long sleeve jacket, pants, sanitary face mask, disposable lower airway, disposable tracheal airway, white fitting, and hard carry case.	
		e.	Realistic anatomy including head tilt, chin lift, chest resistance and chest rise.Sensor indicates correct hand placement.Ventilation system provides appropriate chest rise with BMV (Bag Valve Mask) and MTM (Mouth to Mouth).Enhanced measurement and feedback capabilities.Wireless connectivity with SimPad SkillReporter or Resusci Anne WirelessSkillReporter software.Wired connectivity with SkillGuide or SimPad SkillReporter.Guidelines compliant.Simulate different chest stiffness's - 2 extra springs supplied, hard (approx. 60kg force) and soft (approx. 30kg force), with medium spring (approx. 45kg force) at guidelines depth installed at shipping.Compatible with ShockLink for more efficient and cost effective defibrillation training.Includes: Full Body Manikin, 3 Decorated Resusci Manikin Faces, 2 Disposable Airways, 2 Extra Compression Springs (Hard and Soft), Kneel mat, Jacket, Pants, 50 Resusci Manikin Wipes, USB cable (for use with any USB power supply), User Guide, Important Product Information, SkillGuide, User Guide, Important Product Information.	
		f.	Realistic anatomy including head tilt, chin lift, chest resistance and chest rise.Sensor indicates correct hand placement.Ventilation system provides appropriate chest rise with BMV (Bag Valve Mask) and MTM (Mouth to Mouth).Enhanced measurement and feedback capabilities. Wireless connectivity with SimPad SkillReporter or Resusci Anne Wireless SkillReporter software.Wired connectivity with SkillGuide or SimPad SkillReporter.Guidelines compliant.Simulate different chest stiffness's - 2 extra springs supplied, hard (approx. 60kg force) and soft (approx. 30kg force), with medium spring (approx. 45kg force) at guidelines depth installed at shipping.Compatible with ShockLink for more efficient and cost effective defibrillation training.Includes: Full Body Manikin, 3 Decorated Resusci Manikin Faces, 2 Disposable Airways, 2 Extra Compression Springs (Hard and Soft), Kneel mat, Jacket, Pants, 50	

No	Nama Barang		Spesifikasi	Keterangan
			Resusci Manikin Wipes, USB cable (for use with any USB power supply), User Guide, Important Product Information, SimPad with Skillreporter SW, Powers supply /charger with appropriate plug, USB cable, User Guide, Important Product Information.	
7	Resusci Baby QCPR	a.	Realistic anatomy including head tilt, chin lift, compression depth, compression force and chest riseSensor indicate correct hand placement| Ventilation system provides realistic chest rise with BVM (Bag Valve Mask) and MTM (Mouth to Mouth) and measures volume and rate to help train correct ventilation technique.Enhanced measurement and feedback capabilities.Wired connectivity with SkillGuide or SimPad SkillReporter. Guidelines compliant. Includes: Manikin, 2 Face masks, Manikin Face Shields (1 roll), Disposable Airway, Suitcase, Baby grow (body), Blanket, Pulse bulb, Manikin wipes, User Guide, Important Product Information, Manikin Battery, Standard USB cable (manikin to PC), **SkillGuide**, User Guide, Important Product Information.	
		b.	Realistic anatomy including head tilt, chin lift, compression depth, compression force and chest riseSensor indicate correct hand placement, Ventilation system provides realistic chest rise with BVM (Bag Valve Mask) and MTM (Mouth to Mouth) and measures volume and rate to help train correct ventilation technique.Enhanced measurement and feedback capabilities.Wired connectivity with SkillGuide or SimPad SkillReporter. Guidelines compliantIncludes: Manikin, 2 Face masks, Manikin Face Shields (1 roll), Disposable Airway, Suitcase, Baby grow (body), Blanket, Pulse bulb, Manikin wipes, User Guide, Important Product Information, Manikin Battery, Standard USB cable (manikin to PC), SimPad with **Skillreporte**r SW, Powers supply /charger with appropriate plug, USB cable, User Guide, Important Product Information.	
		c.	The most realistic and convenient infant CPR training manikin available. SkillGuideCPR Performance Indicator provides immediate feedback on ventilation duration and volume, compression depth, and finger placement. Head tilt/chin lift is required to open the airway. Brachial pulse simulation. Economical, disposable airways for quick and easy cleanup. Removable, reusable faces. Comes with three faces, six airways, six manikin wipes, pulse bulb, tubing, SkillGuide unit, and a plastic carry case	

No	Nama Barang	Spesifikasi		Keterangan
8	Injection Trainer	a.	SkillsProfessional-to-patient communication| Intradermal injection| Subcutaneous injection| Intramuscular injection| Management of tissue| Package Contents: 1 Strap-on Base Plate, 1 Soft Tissue Tray with liner, 1 Skin Pad & Muscle Block, 1 Epidermis for Injection Trainer (Pack of 2)	
		b.	Made form silicone| It is ideal for practicing:Intravenous injections, Correct puncture of peripheral veins for blood sampling. The following veins can be punctured: basilic vein, cephalic vein, median cubital vein, dorsal venous rete of hand, Positioning of a butterfly catheter, Delivered with stand, artificial blood, 2 replacement tubing systems, plastic bottle, syringe and deluxe storage carton.Weight 2.9 kg| Dimensions 74 x 19 x 14 cm	
9	Female Catheterisation Trainer	a.	Skills, Correct handling of female anatomy, Aseptic catheterisation technique, Catheter placement: accepts catheters from 12-16 French (female), Fluid management, Withdrawal of catheter, Intermittent self-catheterisation (ISC) using the optional Self, Catheterisation Stand, Suprapubic catheter insertion and catheter management when using Suprapubic Bung, Package Contents: 1 Female Catheterisation Unit, 1 Suprapubic Bung, 1 Standard Bung, 1 Antifungal Agent (250ml), 2 Aseptic Catheterisation Sleeves, 1 Mock LA Gel with Syringe, 1 pelvic shell, 1 drip tray, bag stand, 1 litre fluid bag & plastic kidney dish, 1 12 French foley catheter (female), 12 litre jug	

No	Nama Barang		Spesifikasi	Keterangan
		b.	Female catheterization with realistic resistance| Soft and movable labia| Liquid outflow if catheterization is successfully carried out| The situation can be checked through the transparent bladder| Stands securely on the table thanks to the non-slip feet| Magnetic connectors for quick set-up and dismantling| Easy to clean, and the inserts can be completely removed| Stands with magnetic connections for genital inserts: Catheterization set with transparent bladder, Bottle and tube connectors| Weight 2.3 kg| Dimensions 36 x 11 x 26.5 cm	
10.	Prompt Flex Standart	a.	Training and practice in the following types of birth: Normal, Vaginal breech, Shoulder dystocia, Vaginal assisted (forceps and vacuum devices), Third stage of labor.Cord prolapse. Urinary catheter placement. IM injection. Communication and teamwork skills. Includes 1 Birthing Mother (with upper legs), 1 Standard Baby, 1 Placenta, 1 Abdomen for PROMPT Flex, 1 Perineum & Birth Canal for PROMPT Flex, Carry Case	
		b	This module is an optional add-on for the PROMPT Flex Standard birthing simulator. It allows training in the management of post-partum bleeding, and offers a realistic simulation of an atonic and contracting uterus.Skills Gained:Management of post-partum bleeding: Fundal massage, Bi-manual compression, Haemostatic balloon insertion and management| Communication skills with mother when used with Simulated Patient| Intramuscular injection| Estimating blood loss. Includes 1 PROMPT Flex PPH Uterus Assembly, 2 Concentrated Venous Blood - Starter Pack, 1 PROMPT Flex PPH blood container	

No	Nama Barang		Spesifikasi	Keterangan
11	Gynecological	a.	This unique gynecological training model is ideal for demonstration purposes and for training realistic insertions of female barrier contraceptive devices, which are placed in the vaginal/cervical area. Include:Femidom, FemCap (cervical cap), Vaginal ring, Diaphragm.The second important function of this simulator is that it is possible to insert the various types of pessaries such as ring, bowl or cube which are used in the event of a prolapse or incontinence. It is also possible to demonstrate how to introduce a IUD (coil) and show where it should be located. The cervical cap can be detected with ultrasound and it is also possible to practice intrauterine insemination (IUI).	Gynecological
		b.	Features :Full size adult female lower torso with relevant internal anatomic landmarks, Bi-manual pelvic examination, Palpatio of normal and pregnant uteri, Vaginal Examination, including insertion of speculum, Visual recognition of normal and abnormal cervices, Uterine sounding, IUD insertion and removal, Distal end of vagina facilities introduction of a female condom or sizing a 75mm diaphragm, Removable introitus adds flexibility for addition of multiple ZOE options Laparascopic visualization and occlusion of fallopian tubes, Minilaparotomy, One anteverted and one retroverted parous uterus, One normal uterus with short fallopion tubes for palpation exercises, Early pregnancy uteri. One is 6-8 weeks and the other is 10 - 12 weeks. One twenty week pregnant uterus, Five normal cervices with patent os, Four abnormal cervices, Ten fallopian tubes, Realistically sculpted and anatomically accurate ovaries and fimbriae, Uterus and cervix feature patented "screw" design for fast and easy change out, Talcum powder, Instruction manual, Soft carrying bag.	
12	Litte Anne	a.	A realistic airway construction means that the airway naturally remains bstructed without the use of proper head tilt, chin lift or jaw thrust. This leads to more realistic training as chest rise will be seen when correct ventilations are made.Little Anne's anatomically correct torso and sternal notch allow the student to practice identification of all anatomical landmarks relevant to conducting adult CPR training.Realistic oral and nasal passages allow for mouth-to-mouth ventilation.Due to the highly realistic chest movement and compression resistance feedback devices, such as the CPRmeter, can be used to enhance training and ensurereal time feedback and quality debriefing is provided.Audible feedback reinforces correct compression depth. An optional "clicker" feature signals when the correct compression depth is achieved.Economical disposable airways for quick and easy clean-up.Removable and reusable faces for convenient and affordable maintenance.Includes:Little Anne Manikin, Soft Pack/Training Mat, 2 Manikin Faces, 2 Airways, 6 manikin wipes, User Guide and jacket.	

No	Nama Barang		Spesifikasi	Keterangan
		b.	A realistic airway construction means that the airway naturally remains obstructed| without the use of proper head tilt, chin lift or jaw thrust. This leads to more realistictraining as chest rise will be seen when correct ventilations are made.Little Anne's anatomically correct torso and sternal notch allow the student to practice identification of all anatomical landmarks relevant to conducting adult CPR training.Realistic oral and nasal passages allow for mouth-to-mouth ventilation.Due to the highly realistic chest movement and compression resistance feedback devices, such as the CPRmeter, can be used to enhance training and ensure real time feedback and quality debriefing is provided.Audible feedback reinforces correct compression depth. An optional "clicker" feature signals when the correct compression depth is achieved.Economical disposable airways for quick and easy clean-up.Removable and reusable faces for convenient and affordable maintenance.Includes:4 Individual Little Anne Manikins 4 Individual Training Mats, 1 Large 4-Pack Carry Case, 8 Manikin Faces, 8 Airways, 24 Manikin Wipes, and User Guide.	Litte Anne 4-Pack
13	Babby Anne	a.	Oral and nasal passages allow realistic nose pinch required for mouth-to-nose ventilation. Natural obstruction of the airway allows students to learn the important technique of opening the airway. Head tilt/chin lift and jaw thrust allow students to practice correctly all maneuvers necessary when resuscitating a real patient. Realistic chest compliance means students can experience the proper technique required for chest compressions on infants. Foreign-body airway obstruction feature allows the release of a foreign-body obstruction to be practiced through back blows and chest-thrust techniques. Economical disposable airways for quick and easy clean up. Removable and reusable faces for convenient and affordable maintenance. **Includes:**1 Manikin, Soft Pack, 6 Airways, 10 Foreign Body Practice Objects, and Directions for Use.	
		b.	Oral and nasal passages allow realistic nose pinch required for mouth-to-nose ventilation. Natural obstruction of the airway allows students to learn the important technique of opening the airway. Head tilt/chin lift and jaw thrust allow students to practice correctly all maneuvers necessary when resuscitating a real patient. Realistic chest compliance means students can experience the proper technique required for chest compressions on infants. Foreign-body airway obstruction feature allows the release of a foreign-body obstruction to be practiced through back blows and chest-thrust techniques. Economical disposable airways for quick and easy clean up. Removable and reusable faces for convenient and affordable maintenance. **Includes**:4 Manikins, Soft Pack, 24 Airways, 40 Foreign Body Practice Objects, and Directions for Use.	
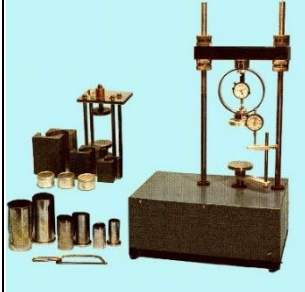
No	Nama Barang		Spesifikasi	Keterangan
14	Neonatal Intubation	a.	Neonatal Intubation Trainer allows teaching of intubation skills on the newborn baby. Robust and realistic, this model allows students to undertake training that is directly transferable to the clinical setting.Realistic anatomy of a newborn baby. Intubation (oral and nasal). Bag-Valve-Mask ventilation. Correct tube placement can be checked by practical inflation test. Includes: 1 Neonatal Infant Head and Upper Torso, 1 Can of Manikin Lubricant, 1 Base with Transparent Cover and Directions for Use.	
15	Infant Airway	a.	Infant Airway Management Trainer provides the realistic anatomy of a 3-month-old infant for teaching and practicing basic and advanced airway management skills. The realism is further enhanced by the elasticity of our new unique tissue and skin material.Product features: • Realistic anatomy of the tongue, oropharynx, epiglottis, larynx, vocal cords, and trachea • Practicing of oral and nasal intubation • Practicing use of LMA (Laryngeal Mask Airway) • Correct tube placement can be checked by practical inflation test • Bag-Valve-Mask ventilation can be practiced • Sellick Maneuver can be performed • Stomach inflation • Realistic tissue simulation	

C. LABORATORIUM TEKNIK DASAR

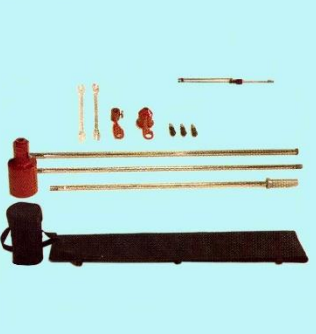| No.	Nama Barang	Spesifikasi		Gambar
1.	Waterpass	a.	"Termasuk : - 1 (satu) unit unit Aluminium Tripod - 1 (satu) unit Rambu Ukur 4,6 Meter + Instrument, lens cap, plumb bob, vinyl cover, cleaning cloth, tool kit, operator's manual, and carrying case." Specification :Magnification : 24X|Image : Erect|Standard Deviation : 1.0 mm Objective Aperture : 32mm Field of View : 1 25'|Minimum Focus : 0.3 m| Multiplication Constant : 100|Additive Constant : 0 Type of Compensator : Air Damped|Compensation Range : 15 Compensator Accuracy : 0.5 Water & Dust Proof : IPX6Sensitivity of Bubble : 10/ 2mm Circle Reading : 1 / 1 gon	
		b.	AT-B2 Termasuk : - 1 (satu) unit unit Aluminium Tripod - 1 (satu) unit Rambu Ukur 5 Meter + Nivo - 1 (satu) unit Hard Case + Plum Bob Specification : :Magnification : 32X|Image : Erect|Standard Deviation : 1.0 mm Objective Aperture : 42 mm Field of View : 1 20'|Minimum Focus : 0.3 m| Multiplication Constant : 100|Additive Constant : 0 Type of Compensator : Air Damped|Compensation Range : 15 Compensator Accuracy : 0.3 Water & Dust Proof : IPX6 Sensitivity of Bubble : 10/ 2mm Horizontal Circle Reading : 1 / 1 gon	(AT-B2)
2.	Theodolite		DT 209 Akurasi 5 detik|Pembesaran 30x| Optical Plummet,| Waterproof dan tahan debu |Masa hidup baterai 140jamPENGUKURAN SUDUT Akurasi 5" Metode Pembaca Mutlak Deteksi Horizontal. 2 sisi Vertikal 1 sisi| Min Pembaca 1""/5"" 0.5mgon/1mgon | Diameter Lingkaran 71mm (2.75"")| TELESKOP Pembesaran 30X| Panjang 149mm (5.8"")| Lensa Objektif 45mm (1.7"")| Sudut Pandang 1°30'| Daya Pemecah 2.5""| Fokus Min 0.9m (2.9') Rasio Stadia 100| Konstant Stadia 0| Penampakan Ganda| Tampilan 2 sisi LCD 7 segmen | Data Output RS-232C| Penerangan: Tampilan : Ya Reticle : Ya| Kompensator Tingkat kemiringan : Vertikal| Rentang kompensator : +3'| Optical Plummet| Pembesaran : 3X| Sudut pandang : 3°| Level Sensifitas | Tingkat Plat : 40""/2mm Tingkat Lingkaran : 10'/2mm Tingkat Tahan Air IP66 Power Supply Baterai : 4AA Operasi Waktu 140jam Suhu Operasi -20 to +50 degrees C| Berat 9lbs (4.1kg)	

No.	Nama Barang	Spesifikasi	Gambar
3.	Hand Bor	Hand Bor 1 set| Consist of : Drilling Rod 10 pcs| Solid/Hollow bar, 1 m length, 1 1/4" dia| Iwan Type Auger 1 pc| Welded steel, two radial blades, 4 dia| Straight Chopping Auger 1 pc| Steel pipe, hardened type, 45 mm width | T-Piece 1 pc| Welded steel| Turning Rod 1 pc| Machine steel, 1 1/4" dia, 60 cm length | Sampling Tube 10 pcs| 68 mm dia, 40 cm length, with 3 bolt holes| Rod Head 1 pc| Hardened, machined steel, 2 1/2" dia| Allen Key 1 pc| Hardened steel, 1/4" | Pipe Wrench 1 set| 24" length| Hammer 1 pc| 2 kg weight | Steel Wire Brush 1 pc| For cleaning laboratory/field apparatus, Steel wire, Wooden handle	
4.	Penetration Test	Standard Penetration Test (SPT) 1 set| ASTM D-1586 / AASHTO T-206 | Consist of : Split Barrel Sampler 1 pc| Hardened machined steel, 1 3/8" i.d., 18" length| Sampling Rod 10 pcs| Steel pipe, 1.5 m length | | Drive Weight Assembly 1 pc, 63.5 kg weight hammer | Anvil 1 pc| Machine steel| Guide Rod 1 pc| Steel, 76.2 cm drop height| | Tripod Stand 1 set| Steel pipe 6 m height| Pulley 1 pc. 20 cm dia.| Rope 15 mtr 3/4" dia x 15 meter | Adaptor 1 pc| Machine steel | Pipe Wrench 2 set. 24" length | Steel Wire Brush 1 pc| For cleaning laboratory/field apparatus| Steel wire, Wooden handle	
5.	Cone Penetrometer	Dutch Cone Penetrometer 2.5 Ton Capacity 1 set| ASTM D-3441| Consist of : Press Cone Penetrometer -In Apparatus 1 set| Steel construction, manually operated 2.5 tons capacity | Sounding Rod 20 pcs| Machined steel, 1 - 1/4" dia, 1 mtr effective length, tappered thread.| Plunger Rod 20 pcs| Round bar, 15 mm dia, 1 mtr length.| Push Adaptor 1 pc, Machined steel | Pull adaptor 1 pC, Machined steel | Spiral Anchor 4 pcs, Machined steel, welded 1.5 m length | Handle and T-piece 1 set, Machined steel, welded | Mantel Cone 1 pc, Precision machine steel, hardened tip,tappered thread | Friction Cone 1 pc, Precision machine steel, hardened, with friction jacket, tappered thread | Wrenches Set 1 set, Pipe wrench (2), adjustable wrench (1), spanner wrench (1) allen key (1), screw driver (1), oil can (1), steel brush (1), piston wrench (1), seals tape (2), oil seals (2), steel box | Long Fasten Press 2 pcs, 1.5 m length, 8 cm width | Short Fasten Press 2 pcs,1 m length, 12 cm width , Manometer 1 pc, 60 kg/cm2 capacity, 6" dia , Manometer 1 pc, 250 kg/cm2 capacity, 6" dia	

No.	Nama Barang	Spesifikasi	Gambar
6.	Liquid Limit Test Set	Liquid Limit Test Set 1 set| ASTM D-4318 / ASSHTO T-89 ,Consist of : Liquid, Limit Device 1 set, Hand operated, brass cup, hard rubber base ASTM Grooving Tool 1 pc, Machine steel, head gauge| Cassagrande Grooving Tool 1 pc, Brass Plate| AB-062/5 Glass Plate 1 pc, Glass, 30 x 30 cm square, 1 cm thick| Thin Box 12 pcs, Aluminium, 60 gr capacity| Graduated Cylinder 1 pc, Glass Made, 100 ml capacity| Evaporating Dish 1 pc, 12 cm dia., 250 ml capacity| Spatula 1 pc, Plastic handle, stainless steel blade, 150 mm blade length.	
7.	Plastic Limit Test Set	Plastic Limit Test Set 1 set| ASTM D-4318 / ASSHTO T-90, Consist of : Plastic Limit Plate, Glass made ,Consist of : Glass Plate 1 pc, Glass, 30 x 30 cm square, 1 cm thick| Reference Rod 1 pc, Stainless steel rod, 3.2 mm dia.| Thin Box 12 pcs, Aluminium, 60 gr capacity | Graduated Cylinder 1 pc, Glass Made, 100 ml capacity| Evaporating Dish 1 pc, 12 cm dia., 250 ml capacity | Spatula 1 pc, Plastic handle, stainless steel blade, 150 mm blade length.| Scraper 1 pc, Plastic handle, 100 mm stainless steel blade	
8.	Shrinkage Limit Test Set	Shrinkage Limit Test Set 1 set| ASTM D-427 / AASHTO T-92 , Consist of : Prong, Plate 1 pc, 3 mm har plastic, 3 needles | Monel Shrinkage Dish 1 pc, Flat bottom, 40 mm dia, 12 mm , height approx | Cristalizing Dish 1 set, Glass made 5 cm dia, 9 dia overflow | Glass Plate 1 pc, Glass, 30 x 30 cm square, 1 cm thick| Graduated Cylinder 1 pc, Glass Made, 100 ml capacity| Evaporating Dish 1 pc, 12 cm dia., 250 ml capacity | Spatula 1 pc, Plastic handle, stainless steel blade,150 mm blade length.| Scraper 1 pc, Plastic handle, 100 mm stainless steel blade| Thin Box 12 pcs, Aluminium, 60 gr capacity	
9.	Hydrometer Analysis Test Set	Hydrometer Analysis Test Set 1 set| ASTM D-422 / ASSHTO T-88 | Consist of : Hydrometer A (152 H) 1 pc, Glass, stream line, range 0 - 60 gr soil/ltr | Hydrometer 1 pc, Glass, stream line, range 0.995 - 1.038 | Mechanical Stirer 1 set, Electric, 220 Volt, cast aluminium frame, 10,000 rpm | Dispersion Cup 1 pc, Stainless steel, brass baffles| Jar Bath 1 pc, Glass / Plastic hard 60x30x40 cm | Water Heater 1 pc, Electric, range ambient to 60° C | Dispersing Agent 1 kg, Sodium hexa/sodium silicate| Hydrometer Jar 2 pcs, Glass, 1000 ml capacity | Graduated Cylinder 1 pc, Glass Made, 1000 ml capacity	

No.	Nama Barang	Spesifikasi	Gambar
10.	Moisture Content Test Set	Moisture Content Test Set 1 set	Consist of : Cent O-Gram Balance 1 set, 311 gr capacity 0.01 sensitivity	Drying Oven 1 set, 53 ltr capacity, 220 volt - 1400 watt, Single door	Thin Box 12 pcs, Aluminium, 60 gr capacity	Dessicator (Non Vacuum) 1 pc, Transparent glass, 24 cm dia. approximately	
11.	Gravity Test Set	Specific Gravity (Vacuum Method) 1 set| ASTM D-854 / AASHTO T-100 |Consist of : Mixing Bowl 1 pc, Stainless steel, 25 cm diameter approx	Picnometer Flask 1 pc, 500 ml capacity, vacuum	Funnel 1 pc, Glass, narrow mouth| Wash Bottle 1 pc, 250 ml capacity	Pipette 1xn pc, Glass, 5 ml capacity	Thermometer Glass 1 pc, Range 0 - 50° C	Vacuum Pump 1 pc, Rotary pump 0 - 76 cmHg	
12.	Compression Machine	TN-220.E Unconfined Compression Machine 1 set| ASTM D-2166 / AASHTO T-208| Consist of : Unconfined Compression Machine 1 set, Electric, 220 V-AC, 200 W, variable, Speed, adjustable height	Sample Tubes| Consist of : Sample Tubes 1 pc, 35.0 mm dia x 70 mm height| Sample Tubes 1 pc, 47.5 mm dia x 95 mm height| Sample Tubes 1 pc, 70.0 mm dia x 140 mm height	Split Sample Tubes |Consist of :Split Sample Tubes 1 pc, 35.0 mm dia x 70 mm height	Split Sample Tubes 1 pc, 47.5 mm dia x 95 mm height| Split Sample Tubes 1 pc, 70.0 mm dia x 140 mm height| Extruder| Consist of : Extruder 1 pc, 34.5 mm dia x 71 mm height| Extruder 1 pc, 47.0 mm dia x 96 mm height| Extruder 1 pc, 69.5 mm dia x 141 mm height	TN-220.5 Trimmer 1 set, Steel frame, 3 tubes size	Proving Ring 1 set, 100 kg capacity| Dial Indicator 1 pc, Range 30 mm x 0.01 mm	Thin Box 12 pcs, Aluminium, 60 gr capacity| Wire Saw 1 pc, For preparing soil sample, 100 mm blade length approx	

No.	Nama Barang		Spesifikasi	Gambar
13.	Consolidation Test Set	a.	Consolidation Test Set 1 set| ASTM D-2435 / AASHTO T-216	Consolidation Frame 3 set, Welded steel, 2 test unit, 1:10 lever ratio	Consolidometer 3 set, Brass, 65 mm sample dia., porous, stone, loading cap.| Loads, Slotted 6 pcs, machined steel 830 gr |Slotted 3 pcs, machined steel 1660 gr| Slotted 3 pcs, machined steel 3320 gr |Slotted 3 pcs, machined steel 6640 gr	Slotted 3 pcs, machined steel 13280 gr| Sample Tubes 3 set, Machine steel, 50.5 mm dia, galvanized, with extruder	Dial Indicator 3 pcs, 10 mm x 0.01 mm	Wire Saw 3 pcs, For preparing soil sample, 100 mm blade length approx|	
14.	Direct Shear Test	a.	Digital Direct Shear Test Set 1 set| ASTM D-3080 / AASHTO T-236, Consist of : Loading machine 1 set, Welded steel frame, hand operated| Shear Box 1 set, Brass, 63.5 mm sample dia, porous stone, loading cap.| Loads, Consist of :Slotted 2 pcs, machined steel 3167 gr weight, Slotted 1 pc, machined steel 6334 gr weight| Sample Tube 1 pc, Machined steel, 63 mm dia extruder| AB-001/1 Load Cell 1 set, 5 kN| Digital Dial Indicator 1 pc, 10 mm x 0.01 mm| Digital Dial Indicator 1 pc, Range 30 mm x 0.01 mm| Wire Saw 1 pc, For preparing soil sample ,100 mm blade length approx	
15.	Triaxial UU Test	a.	Triaxial Test 1 set t	Consist of : Triaxial electromotor 1000 kg capacity Proving ring 200 kg	capacity Dial deformation 20 mm Triaxial cell for sample 38 mm & 50 mm	Pore water pressure	Water tank	Air compressor 1/4 HP |Sample preparation	
		b.	Triaxial UU Test 1 set t	Consist of : Triaxial electromotor 1000 kg capacity Proving ring 200 kg	capacity Dial deformation 20 mm Triaxial cell for sample 38 mm & 50 mm	Pore water pressure	Water tank	Air compressor 1/4 HP |Sample preparation	
		c.	Triaxial UU Test 1 set t	Consist of : Triaxial electromotor 1000 kg capacity Proving ring 200 kg	capacity Dial deformation 20 mm Triaxial cell for sample 38 mm & 50 mm	Pore water pressure	Water tank	Air compressor 1/4 HP |Sample preparation	

No.	Nama Barang	Spesifikasi		Gambar
16.	Compaction Test	a.	Compaction Test Set 1 set	ASTM D-698 / D-1557	ASSHTO T-99 / T-180 Consist of : Standard Proctor Mold 1 pcMachine steel, plated 4" i.d. 4.584" height, 2" height of collar.	TN-200.2 Modified Proctor Mold 1 pc Machine steel, plated 6" i.d. 4.584" height, 2" height of collar.	Standard Proctor Hammer 1 pc Machine steel, plated 12" drop height, 5,5 lbs weight	Modified Proctor Hammer 1 pc Machine steel, plated, 18" drop height, 10 lbs weight	Extruder 1 set Steel frame hydraulic jack	Square Pan	1 pc Galvanised steel 65 x 65 x 7.5 cm	Thin Box 12 pcs Aluminium, 60 gr capacity	Graduated Cylinder 1 pc Glass Made, 1000 ml capacity	Round Scoop 1 pc Round bottom, large size, cast aluminium	Trowel 1 pc Wooden handle, pointed type	Straight Edge 1 pc 30 cm length	Rubber Mallet 1 pc Rubber head, wooden handle 1.0 kg weight	Steel Wire Brush 1 pc For cleaning laboratory/field apparatus, Steel wire, Wooden handle	
17.	CBR Test	a.	Electrical Laboratory CBR Test Set 1 set	ASTM D-1883 / AASHTO T-193	Consist of : Electrical General Description The Machine features a rigid two coulomn, frame with upper crossbeam, which can be ajust in height and locked in position with locknuts. The drive force is provided by an linkage of motor, worm and worm wheel housed in the base cabinet, which also accommodates the motor and the electric panel. Can operated both by motor and manual handle. Electrical Loading Machine 1. Max. load: 30KN ,50KNcapacity.	2. Test speed: 1 mm/min (BS model) or 1.27 mm/min (ASTM/EN model) 3. Size of the penetration rod: Dia. 50×100mm	Loading Machine 1 set consists off : CBR Mould 3 pcs Machine steel, 6" i.d., 7" height, 2" height of collar Spacer Dish 1 pc Machine steel, 5 15/16" dia, 2.416" height	Cutting Edge 1 pc Machine steel, sharp edge Circular Surcharge Weight 3 pcs Machine steel, 5 7/8" dia 5 lbs weight	Slotted Surcharge Weight 3 pcs Machine steel, 5 7/8" dia 5 lbs weight	Modified Proctor Hammer 1 pc Machine steel, plated, 18" drop height, 10 lbs weight	Filter Paper 1 box 6" dia, 100 sheets/box	Proving Ring 1 set 6,000 lbs capacity	Dial Indicator 1 pc 10 mm x 0.01 mm	Square Pan 1 pc Galvanised steel 65 x 65 x 7.5 cm	Thin Box 12 pcs Aluminium, 60 gr capacity	Graduated Cylinder 1 pc Plastic Made, 1000 ml capacity	Round Scoop 1 pc Round bottom, small size, cast aluminium |Trowel 1 pc Wooden handle, pointed type	Straight Edge 1 pc 30 cm length |Dial Indicator 1 pc Range 30 mm x 0.01 mm	

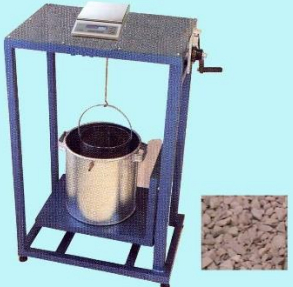| No.	Nama Barang		Spesifikasi	Gambar
		b.	Field CBR Test Set 1 set ASTM D-4429 Consist of :	Mechanical Jack 1 pc Cast alumunium housing, 5 tons capacity operated, 2 speeds.	Swivel head 1 pc Cast aluminium	Field Penetration Piston 1 pc Machined steel, plated, 3 sq.in.cross section area	Extention Set 1 set Machined steel, plated, 5 cm, 10 cm , 20 cm, 30 cm, and 60 cm, with connecting adaptor	Reference Beam 1 set Steel pipe, 150 cm span	Circular Surcharge Weight 1 pc Machine steel, plated, 10" dia, 10 lbs weight	Slotted Surcharge Weight 1 pc Machine steel, plated, 8" dia, 10 lbs weight	Slotted Surcharge Weight 1 pc Machine steel, plated, 8.5" dia. 20 lbs weight	Proving Ring 1 set 2,000 lbs capacity	Proving Ring 1 set 10,000 lbs capacity	Dial Indicator 1 pc Range 30 mm x 0.01 mm	Dial Holder/Dial Stand 1 pc Magnetic/Screw Ring	
18.	Sand Cone Test	a.	Sand Cone Test Set 1 set	ASTM D-1556 / AASHTO T-191 **Consist of :**	Sand Cone Bottle 1 pc Transparent glass, 4 ltr cap. Approx	Sand Cone Funnel 1 pc Seamless metal, turning stopper, 6 1/2" dia bottom, 1/2 neck dia.	Base Plate 1 pc Cast aluminium, 12" x 12"	Graduated Sand 1 zak Uncommented sand, passing # 10, retained # 60, 25 kg capacity Sample Bag 6 pcs	Plastic bag	Round Scoop 1 pc Round bottom, small size, cast aluminium	Spoon 1 pc Stainless steel, Small size	Trowel 1 pc Wooden handle, pointed type	Chisel 1 pc 30 cm length approx., Hardened type	Rubber Mallet 1 pc Rubber head, wooden handle 0.5 kg weight	
19.	Dynamic Cone	a.	Dynamic Cone Penetrometer 1 set	Consist of : Handle 1 pc Stainless steel	Hammer 1 pc Machined steel, painted 8 kg weight	Guide Rod 1 pc Stainless steel, 16 mm dia drop height 575 mm Anvil 1 pc Machined steel, painted	Penetration Rod 1 pc Stainless steel, 16 mm dia 107 cm length	Cone 3 pcs Hardened steel, 60 angle, 20 mm dia	Penetration Scale 1 set Stainless steel, 16 mm dia 100 mm scale	Carrying Bag 1 pc Water proof cloth	Open and Wrench 2 pcs Hardened steel	

No.	Nama Barang	Spesifikasi	Gambar
20.	Speedy Moisture Tester	a. Speedy Moisture Tester 1 set AASHTO T-217 Consist of :	Speedy Gauge 1 pc M/C range 0-20%, sens.:0.2%, sample weight 20 gr	Speedy Balance 1 pc Pocket digital balance Calcium carbide 1 can	Canned	Measuring Spoon 1 pc Cast Aluminium	Cleaning Brush 1 pc Wooden/plastic Holder	Carrying Case 1 pc Wooden/Plastic case	Steel Ball 2 pcs	
21.	Specific Gravity (Vacuum Method)	a. Specific Gravity (Vacuum Method) 1 set ASTM D-854 / AASHTO T-100	Consist of : Vacuum Hose 1 set Plastic hose with rubber bung, 1 valve	Mixing Bowl 1 pc Stainless steel, 25 cm diameter approx	Graduated Cylinder 1 pc Glass Made, 500 ml capacity Erlenmeyer Flask 1 pc 500 ml capacity	Funnel 1 pc Glass, wide mouth	AB-031/2 Wash Bottle 1 pc 250 ml capacity	Pipette 1 pc Glass, 5 ml capacity	Thermometer Glass 1 pc Range 0 - 50° C	Vacuum Manometer 1 pc For measuring vacuum condition, 4" dia. 0-76 cm Hg	Vacuum Pump 1 pc Rotary Pump	
22.	Marshall Test Set	a. Marshall Test Set 1 set Complies to ASTM D1559 1. Capacity:0-50kN precision:1% 2. Resolution:0.1kN,0.01kN 3. Twin displacement structure, displacement resolution: 0.01mm 4. Environment temperature: -10℃-40℃ 5. Test speed 50.8mm/minute 6. Supplied with one breaking head, diameter 101.6mm or 152.4mm **Features:** Adopt European design, equipped with one S shape load cell and displacement sensors, peak value automatically preserved and printing, the principal axis automatically fall after printing	AS-180.2 Compaction Mould 1 set Machine steel, plated, 4" dia., 3" height, with collar and base plate.	AS-180.3 Stability Mould 1 set Cast alumunium, split type 4" I.d., 4" wide.	AS-180.4 Campaction Hammer 6" 1 set Machine steel, plated 10 lbs, hammer weight, 18" drop height.	AS-180.5 Campaction pedestal 6" 1 set Wooden base with steel platen.	AS-180.6 Compaction Mould Holder 4" 1 set Machine steel, quick clamping system	AS-180.7 Extruder 1 set Steel frame, hydraulic system.	AS-180.8 Flow Meter 1 set Cast alumunium, clamping bolt, with dial indicator 30 x 0.01 mm	AS-180.9 Water Bath 1 set Stainless steel, water heater, 220 V-AC thermostat 30 -85° C		

No.	Nama Barang		Spesifikasi	Gambar
			AB-001/6 Proving Ring 1 set 6,000 lbs capacity	AS-180.2A Compaction Mould 1 set Machine steel, plated, 6" dia., 3" height, with collar and base plate.	AS-180.5 Campaction pedestal 6" 1 set Wooden base with steel platen.	AS-180.4 Campaction Hammer 6" 1 set Machine steel, plated 10 lbs, hammer weight, 18" drop height.	AS-180.6A Compaction Mould Holder 6" 1 set Machine steel, quick clamping system	AS-180.3A Stability Mould 6" 1 set Cast alumunium, split type 4" I.d., 4" wide.	
		b.	Automatic Marshall Compactor 1 set Manufactured in accordance with BS Standards. Supplied complete with wood base. For 4" sample	
23.	Centrifuge Extractor Test	a.	Electric Centrifuge Extractor Test Set 1 set ASTM D-2172 / AASHTO T-164 Consist of : Centrifuge Extractor 1 set Electric, 220 V-AC, variable speed DC Motor up to 3600 rpm, alumunium housing, removable cover and bowl, 1500 gram capacity	Filter Paper 1 box For centrifuge 50 pcs, low ash filter paper	

No.	Nama Barang	Spesifikasi		Gambar
24.	Reflux Extractor Test	a.	Reflux Extractor Test Set 1 set ASTM D-2172 / AASHTO T-164 Consist of : Reflux Extractor Consist of : Glass Jar 1 pc Pyrex, 6" I.d approx.	Funnel 1 pc Two wire mesh screen cone	Condensor 1 pc Brass/ copper	Hot Plate 1 set Electric, 500 W, 220 V Single burner plate	Filter Paper 1 box For centrifuge 50 pcs, low ash filter paper	Asbestos Wire Gauze 1 pc asbestos wire, 15 x 15 cm	
25.	Core Drilling	a.	Core Drilling Test Set 1 set Consist of : Core Drilling Machine 1 set Cast alumunium frame, gasoline engine 7 HP, 4 cycle vertical drilling position : rubber caster, up to 4" dia bit	Diamond Bit 1 pc 4" inner dia	Field Sample Tong 1 pc 4" dia	Extension Shaft 1 pc 9" capacity	Strap Wrench 1 pc 18" capacity	Expanding Adaptor 1 pc	
26.	Sample Splitter	a.	Sample Splitter 1 set Stainless steel, chute width 1" 12 holes, supplied complete with scoop and pans.	
		b.	Sample Splitter 1 set Stainless steel, chute width 2" 8 holes, supplied complete with scoop and pans.	

No.	Nama Barang		Spesifikasi	Gambar
27.	Sand Equivalent Test	a.	Sand Equivalent Test Set 1 set	ASTM D-2419 / AASHTO T-176 Consist of : Graduated Cylinder 2 pcs Transparent fibre glass, 1 1/4" I.d, 1 1/2" o.d 17 " height, with scale	Stopper Assembly 1 set Rubber stopper, irrigation tube, hose, shipon	Weight Foot Assembly 1 set Machine steel. galvanized, 1000 gr weight, sand reading indicator	Stock Solution 1 btl Calcium chloride, glycerine and formaldehyde solution. Supplied in a plastic container (1 ltr)	Carrying Case 1 pc Wooden case with handle	Thin Box 2 pcs Aluminium, 60 gr capacity	Funnel 1 pc Plastic, narrow mouth	
28.	Los Angeles Abrasion Machine	a.	Los Angeles Abrasion Machine 1 set ASTM C-131 / AASHTO T-96 Consist of : Los Angeles Abrasion Machine 1 set Frame : Welded steel frame 8 and 12 cm (- steel profile) Drum : 1/2" thick steel plate 28" inner dia 20" inner width Automatic Counter : Digital, module system for easy maintenance Panel button : ON-OFF-RUN-STOP JOG-RESET-500-1000 Power : Electromotor, dual voltage 110-220 V, 750 watt, 1 phase Heavy duty speed reducer. Drum speed : 30 - 33 rpm	Steel Ball 12 pcs Steel 1 7/8" diameter Catching Pan 1 pc Galvanized steel	
29.	Bulk Density Test	a.	Bulk Density Test Set 1 set ASTM C-29 / AASHTO T-19 Consist of : Vibrating Table 1 set Variable speed up to 3600 rpm, separate control box, 50 x 50 cm table Consist of : Container 1 pc Machined steel, galvanized, 3 ltr., cap	Container 1 pc Machined steel, galvanized, 10 ltr., cap	Container 1 pc Machined steel, galvanized, 15 ltr., cap	Container 1 pc Machined steel, galvanized, 30 ltr., cap Mesh 0.090 mm opening	

No.	Nama Barang	Spesifikasi	Gambar
30.	Gravity and Absorption of Fine Aggregate Test	a. Specific Gravity and Absorption of Fine Aggregate Test Set 1 set ASTM C-128 / AASHTO T-84 Consist of : Cone and Tamper Consist of :	Cone 1 pc Brass, 40 mm I.d at the top 90 mm I.d at the bottom, 75 mm height.	Tamper 1 pc Machine steel, galvanized, 340 gr weight, 25 mm dia.	Glass Plate 1 pc Glass, 30 x 30 cm square, 1 cm thick Mixing Bowl 1 pc Stainless steel, 25 cm diameter approx	Volumetric Flask 1 pc 500 ml capacity	Scraper 1 pc Plastic handle, 100 mm stainless steel blade	
31.	Gravity and Absorption of Coarse Aggregate Test	a. Mechanical Specific Gravity and Absorption of Coarse Aggregate Test Set 1 set ASTM C-127 / AASHTO T-85 Consist of :	Mounting Table 1 pc Welded steel frame, painted PA-210.2 Water Container 1 pc 20 ltr capacity, approx, overflow	Heavy Duty Solution Balance 1 set 20 kg capacity, 1 gr sensitivity Supplied complete with weights.	Sample Basket 1 pc # 8 mesh, 200 mm dia. 200 mm heights.	
32.		b. Digital Specific Gravity and Absorption of Coarse Aggregate Test SeDigital Specific Gravity and Absorption of Coarse Aggregate Tt 1 set	ASTM C-127 / AASHTO T-85 Consist of : PA-210.1 Mounting Table 1 pc Welded steel frame, painted	Water Container 1 pc 20 ltr capacity, approx, overflow	Digital Balance 1 pc 6,100 gr cap. 0.1 gr sensitivity	Sample Basket 1 pc # 8 mesh, 200 mm dia. 200 mm heights.	

No.	Nama Barang		Spesifikasi	Gambar
33.	Concrete Cylinder Mould	a.	Concrete Cylinder Mould 1 set 15 cm dia x 30 cm heigth.	
34.	Concrete Cube Mould	a.	Concrete Cube Mould 1 set 15 x 15 x 15 cm	
35.	Digital Concrete Compression Machined	a.	Digital Concrete Compression Machined 1 set ASTM C-39 2000 kN capacity,10 kN increments. The digital readout, compression machine is technology calling control instrument with facilities for data calculation and presentation. The digital read can connect to computer for calculate for data and completed with computer	
		b.	ADR Touch 2000 Standard Compression Machine with Digital Readout. 220-240V 50/60 Hz 1Ph. Frame Class (stability) n/a , Frame Type Welded, Capacity 2000kN, Max Vertical Clearance 340mm, Max Horizontal Clearance 325mm, Platen Sizes Lower, Upper 222mm dia, Max Ram Travel 50mm, Samples: Cubes (Concrete) Up to 150 mm, Cylinders (Concrete) Up to 160x320 mm Blocks n/a, Flexural Testing Via Flexural Frame, TFV & ACV, Hydraulics : Pump Type Variable Output, Data Comms : Printer, PC download, USB, RS232 (option to print), Screen : 145 mm (5.7") Touch Screen with Graphical Display, Misc: Sample Alignment Engraved Cross Hairs, Pace Rate 'Bar' Indicator, Load v Time, Goodness of Test, Analysis of Trend Data, Languages English, French, German, Spanish, Memory of Test Results 2GB Standard Distance Piece 20mm Effective Height. 1pc, Standard Distance Piece 50mm Effective Height 1 pc, Standard Distance Piece 80mm Effective Height 1 pc, Standard Distance Piece 100mm Effective Height 1pc, Impact Printer RS232 serial connection 1set Supplied complete with serial RS232 communications cable and one paper roll. For 220 – 240 V AC, 50 - 60 Hz, 1 ph, Printer Ribbon(Black/Red) 1pc, Paper Roll 76mm Wide (Box of 20) 1pc	

No.	Nama Barang		Spesifikasi	Gambar
36.	Vertical Cylinder Capping Set	a..	Vertical Cylinder Capping Set 1 set ASTM C-617 Consist of :	BE-130.1 Vertical Cylinder Capper 1 set Cast alumunium frame, rotating ground table, for 150 mm dia concrete cylinder.	BE-130.2 Capping Compound Warmer 1 set Approx 3 ltr cap., heating temperature up to 200 c, 220 V-AC.	Capping Ladle 1 pc Stainless steel ladle, wooden handle Cylinder Carrier 1 pc Double handle, snap clamp, for 150 mm dia, concrete cylinder. Capping Compound 1 kg Powder, approx 115 C Pouring. 25 kg Temperature	
37.	Hydraulic Concrete Beam Testing Machine	a.	Hydraulic Concrete Beam Testing Machine 1 set ASTM C-78 For determining the flexural strength of concrete beam by using a simple beam with third point loading. 100 kN cap., hydraulic hand pump, manometer reading, sample size 15 x 15 x 60 cm welded steel construction. Dimension (l x w x h) : 100 x 50 x 100 cm.	
38.	Slump Test Set 1	a.	Slump Test Set 1 set ASTM C-143 / AASHTO T-119 Consist of :	BE-150.1 Slump Cone 1 pc Heavy gauge sheet steel, 4" top dia, 8 bottom dia,12" height.	BE-150.2 Inspection Scale 1 pc Machine steel,0-15 cm slump measurement, 1 cm increment.	BE-150.3 Base Plate 1 pc Steel sheet, carrying handle, 600 x 600 x 5 mm	AB-047/2 Round Scoop 1 pc Round bottom, large size, cast aluminium	AB-051/1 Trowel 1 pc Wooden handle, pointed type	AB-055/1 Steel Wire Brush 1 pc For cleaning laboratory/field apparatus, Steel wire, Wooden handle	BE-150.4 Tamping Rod 1 pc Machine steel, galvanized 16 mm dia, 600 mm length.	

No.	Nama Barang	Spesifikasi	Gambar
39.	Air Content of Fresh Mixed Concrete	a. Air Content of Fresh Mixed Concrete ASTM C-231 / AASHTO T-152 Consist of :	BE-160.1 Air Entraiment Meter 5 ltrs capacity. 2" maximum aggregate size, direct reading 0 – 105 manometer hand pump.	AB-047/1 Round Scoop Round bottom, small size, cast aluminium	AB-051/1 Trowel Wooden handle, pointed type	AB-053/2 Straight Edge 40 cm length	AB-054/1 Rubber Mallet Rubber head, wooden handle 0.5 kg weight	BE-160.2 Tamping Rod Macine steel, galvanized 16 mm dia, 600 mm length.	
40.	Modulus of Elasticity In Concrete Test Set	a. Modulus of Elasticity In Concrete Test Set 1 set For measuring average axial deformation of concrete cylinder sample during compression test, cast alumunium, dial indicator 0.1 X 30 mm Dimension (l x w x h) : 30 x 30 x 35 cm.	
41.	Laboratory Concrete Mixer 1 set	b. Laboratory Concrete Mixer 1 set For mixing trial bathes of concrete for mix design. pprox 70 ltr cap,, 4 mixing blades, welded steel frame, 2 wheels for easy movement, electromotor /3 HP, 220 V-AC, 1 phase. Dimension (l x w x h) : 20 x 20 x 30 cm.	

No.	Nama Barang		Spesifikasi	Gambar
42.	Digital Concrete Compression Machined	a.	AB-064/46 Pan and Cover 2000 kN capacity,10 kN increments.|The digital readout, compression machine |is technology calling control instrument |with facilities for data calculation |and presentation. The digital read |can connect to computer for calculate |for data and completed with computer | Includeded Dudabes Sofware |Capacity 2000 kN Standard ASTM |Lower Platens Dim. Ø165 mm |Upper Platens Dim.Ø165 mm |Vertical Clearance 370 mm |Horizontal Clearance 360 mm |Max. Piston Movement 50 mm |Max. Working Pressure410 Bar |Oil Capacity 18 L | Power 750 W |Dimensions (wxlxh) 740x500x1350 mm |Weight 770 kg |	
43.	Welding Machine	a.	Feature: Small size light weight, high quality and energv saving. Good arc-starting and arc force, stable arc and little spattel. High welding quality, deep penetration. Auto protection of over-voltage and over-current. Be able to work continuously, it can balance automatically when voltage is fluctuation. Suitable for welding all kinds of basic welding rod. Technical Data: Power voltage(V) 120/230 Rated input power(KVA) 7-Mar Input voltage frequency(HZ) 50/60 No-load voltage(V) 76 Output current range(A) 30-110/30-200 Rated output Voltage(V) 24.4/28 Duty cycle(%) 80/25 Efficiency(%) 85 Insulation class F Weight(KG) 11 Measurement(MM) 460x270x345 Protection class IP21S Usable electrode(MM) 1.6-2.5/1.6~4.0 Including Instruction Manual	

No.	Nama Barang	Spesifikasi	Gambar
44.		b. Technical Data : Rated Input Voltage 1PH ~ 230V ±15% Max. Load Power Capacity TIG: 7.81KVA MMA: 5.63KVA Rated Duty Cycle(40oC) 60% TIG: 250A/20V MMA: 200A/28V 100% TIG: 200A/18V MMA: 160A/26.4V Welding Current/Voltage Range TIG: 3A/10.1V~250A/20V MMA: 20A/20.8V~200A/28V Open Circuit Voltage 70V~80V Power Factor 0.8 Efficiency 80% TIG Pulse Frequency Pulse Width (Ratio) 1%~100% Arc-starting Curren 5A~250A Crater-ling Current 5A~250A Current Up-slope Time 0.1S~15S Current Down-slop Time 0.1S~15S Pre-Gas Time 0.1S~15S Flow-Gas Time 0.1S~15S Spot Arc Time 0.1S~10S MMA Arc Force Hot Start Time 0.1~3S Hot Start Current 10A~200A Dimension (LxWxH) 410x190x305mm Weight (KG) 15KG	
45.		c. Precision Arc Performance: • Built-in arc control lets you get in tight without sticking the electrode. An electrode compensation circuit ensures consistent arc control performance regardless of the electrode size. • Hot Start Function reliably ignites the electrode and melts perfectly to ensure the best quality even at the start of the seam. • Arc Force makes it easier to weld large-drop melting electrode types at low current strengths with a short arc in particular. • Thermal overload protection light indicates power shutdown. Helps prevent machine damage if the duty cycle is exceeded or airflow is blocked. • Expert of vertical-down welding with cellulose electrodes. • Special designed for carbon arc gouging. • Fast, precise, clean arc ignition and arc ending. • 10 channels memory capacity Technical Data: Rated Input Voltage 3PH ~ 400V ±15% Max. Load Power Capacity 19.93KVA Rated Duty Cycle(40) 60% 400A/36V 100% 315A/32.6V Welding Current/Voltage Range 20A/20.8V~400A/36V Open Circuit Voltage 70V~80V Power Factor 0.85 Efficiency 85% MMA Arc Force 1%~100% Hot Start Time 0.1-2S Hot Start Current 1%~100% Dimension 680x310x650mm Weight 45KG Including Instruction Manual Control Panel Parameter Values: 1.Hotstart current rotary dial Increased ignition current during the set hotstart period to optimise the arc ignition. Setting from 20 A to 200 A. 2.Welding current setting rotary dial Infinite setting of the welding current across the whole power range. 3.Arcforce rotary dial To adjust the welding parameters to the electrode type used. Infinite setting from rutile (soft arc) to cellulose (hard arc) electrode types.	

No.	Nama Barang	Spesifikasi	Gambar
46.		d. Technical Data: Rated Input VoF672:G698 3PH ~ 400V ±15% Max. Load Power Capacity 26.99KVA Rated Duty Cycle(40oC) 60% MIG: 500A/39V MMA: 500A/40V 100% MIG: 350A/31.5V MMA: 350A/34V Welding Current/Voltage Range MIG: 10A/14.5V~500A/39V MMA: 10A/20.4V~500A/40V Open Circuit Voltage 70V~80V Power Factor 0.85 Efficiency 85% Pre-Gas Time Preset Flow-Gas Time Preset Wire-feed Mechanism 4 Rollers Wire-feed Speed Range 0~25m/ min Wire Spool Capacity 300mm (15kg) Filler Wires Ø (mm) Fe, Ss: 0.6~1.6 mm Dimension: 960x420x1400mm Weight 85KG Water-cooling Unit Operating Voltage 230V 50/60Hz Rated Power 260W Cooling Power 1.5KW(1L/MIN) Maximum Pressure 0.3MPA/60HZ Recommended Cooling Liquid 20%~40% ethanol/water Tank Volume 6.5L Including Instruction Manual	

D. LABORATORIUM MICROTEACHING

No	Nama Barang	Spesifikasi	Keterangan
1	Laboratorium Microteaching	a. Kapasitas 20 mahasiswa | **Ruang Praktikum Pengajaran dan Pembelajaran: Meja Master:** model U, uk. Min 218x118x70cm, multiplek min.18mm, dilapisi paper sheet| **Mic Wireless:** 2 buah mic genggam, 1 buah receiver, Kabel min. 1 meter dengan ujung TRS 1/4"| **Kursi Guru:** Kursi Putar dengan 5 roda dilengkapi sandaran tangan model manager |**2 unit Camera Control Indoor:** 3,6mm Sony Effio -700 TVL, Lens : 3.6 mm, IR CUT, IR LED, min. 1.3MP, NIGHT VISION| **Speaker room:** 2 unit, Surround Speaker ADC 5 ST 50, 60 W, 8 Ohm, Dual Way bass reflek speaker, Wofer : 5 Inch, Tweeter : 0.75 Inch| **Kursi Mahasiswa:** 20 unit, ukuran approx. 430 x 450 x 770 mm, Pipa Bulat min. 22,7 mm, Finishing : Nickel Chrome Plating, Upholstery : PVC Vinyl, Memo table: multiplek min. 18mm | **Pendingin ruangan (AC):** 2 unit, AC Split min. 1PK| **LCD Touchscreen:** Display Size min. 55inch, Screen Type LED, Aspect Ratio 16:9, Display Area approx. 1209.6(H) x 680.4(V)mm, Resolution: approx. 1920(H) x 1080(V), Android System Version: min. Android 4.2.1, CPU min. ARM Cortex A9 Dual Core, RAM min. 1.5GB, Operation System original Windows 7 and above, USB2.0, 3 USB3.0, 1LAN(RJ45), 1VGA Output, 1Earphone Output, 1Microphone Input, 1Mini Display Port, 1HDMI Output, 1Power Requirements 100-240V~ 50/60Hz | **Ruang Operator**: **Audio Mixer+Amplifier:** 4 Mic inputs and individual volume adjustable, 1 Ch Equalizer control, High, middle ,low of the tone and echo effect adjustable, OutputPower (RMS):70W*2 (4 ohms), Frequency Response: 20Hz-20KHz 3dB, Sensitivity:120 mV, S/N Ration:65dB, T.H.D.: 0.1% (1KHz)| **Komputer:** 1 unit, processor min. core i3 4150, min. DDR3 2GB, HDD min. 500GB, DVDRW, monitor min. LED 20", Keyboard+Mouse USB, min. Original windows 7 Professional| **Headset:** Microphone: 9x7/58±2dB Impedance max. 32 Ohm at 1 Khz, Sensitivity: 105dB/mW, Frequency response : 20~20,000Hz, Cord length: Approx.2~3M, Cable : Swivel| **DVR:** min. 960h, min. 4cH, 1 audio, vga, Ptz, network, usb, HDD min. 1 TB, online via smartphone, android, blacberry, windows live, CHANNEL 600KIT | **UPS:** min. 600VA, Frequency : 550Hz or 60Hz ±1Hz, Transfer Time : 2-8ms, Baterai Recharge Time : 2– 4 hours recover to 90% capacity| **LED Monitor:** min. 47", 16:9, min. 1920 x 1080px| **Meja operator:** 2 unit, Warna : River Teak – Black, Height: min 750 mm, Width: min 1200 mm, Depth: min 530 mm, multiplek min 18mm, Lapisan PVC tahan air, Ada laci berkunci| **1 unit Camera Control Indoor:** 3,6mm Sony Effio -700 TVL, Lens : 3.6 mm, IR CUT, IR LED,min. 1.3MP, NIGHT VISION| **Kursi Operator:** Kursi Putar dengan 5 roda dilengkapi sandaran tangan model manager | **Ruang Observasi Hasil Praktikum Mahasiswa**: **1 unit Camera Control Indoor:** 3,6mm Sony Effio -700 TVL, Lens : 3.6 mm, IR CUT, IR LED, 1.3MP, NIGHT VISION| **Meja observasi:** 1 unit, Warna : River Teak – Black, Height:min 750 mm, Width: min 1200 mm, Depth: min 530 mm,	

No	Nama Barang	Spesifikasi	Keterangan
		multiplek min 18mm, Lapisan PVC tahan air, Ada laci berkunci| **LED TV:** min 32", Input USB|HDMI|Optical, Resolusi Layar min 1366 x 768, USB Port 1, include bracket| **Kursi Mahasiswa:** 5 unit, approx. 430 x 450 x 770 mm, Pipa Bulat min. 22,7 mm, Finishing : Nickel Chrome Plating, Upholstery: PVC Vinyl, Memo table: multiplek min. 18mm | **Karpet:** min. 3roll, 60m2, Fiber : Polypropylene, Thickness : min. 3 mm, Backing : Latex, roll size: 2x20m| **DVD Player:** Multi Format Playback, USB Content Playback, Karaoke | **Sekat Ruangan:** Bahan rangka min. hollow galvalum lapis gypsum dan dicat, Kaca menggunakan kaca film one way. | Instalasi dan Training	
		b. Kapasitas 20 Mahasiswa. **A. Ruang Praktikum**. **1 unit Meja Komputer guru**: Bahan multiplek dilapisi HPL min. 18mm, Ukuran approx. 142 x 60 x 73 cm | **20 buah Kursi Mahasiswa**: Rangka, Pipa bulat, kaku belakang, bentuk U, Finishing: chrome plating, dudukan cat, Cover PVC Vinyl, Memo table: multiplek min. 18mm, lapis formika putih | **4 buah Camera CCTV** (Day and Night Camera) with back light sensor and iris sensor) min. 1/3" 2 Megapixel 960p AHD, Number of Pixels : min. 1280(H) x 1024(V), Illumination : 0.01Lux / F1.2 , 0Lux / F1.2 (IR LED ON), Video Frame Rate : min. 25/30fps@960p, Electronic Shutter : Auto : 1/45 to 1/45,000 sec), Lens: Built-in min. 4 mm / F2.0 Fix Lens, Array IR LED: 4 pcs, Array IR Effective Distance: Up to 25m, Day & Night: Auto (ICR) / B&W / Color, Gain Control: Auto, Sync. System: Internal, Video Output: Composite signal (1.0 Vp-p composite, 75Ω), Power Source: DC 12V, Working Temperature : -10°C to 50°C, Working Humidity: 0 to 95% RH (non-condensing) | **1 unit interactive whiteboard:** Infrared technology, Support Windows/Mac/Linux system, Ten users write at the same time ,infrared sensor technology ,with finger touch directly for operation; Strong anti- resistance to light, work directly under sunlight, Module design, simple combination, installation and parts exchange after sale actively; Nano surface ,write by normal EXPO pen ,both normal brush and even wet cloth can clear well; Oxidized aluminum out frame, exquisite and elegant noble sense design; Intelligent gesture-recognition like: start software by palm, turn page by hand-waving, moving writing on page by fingers, fist work as eraser, USB works as direct power supply, update and data transfer; Free software update for lifelongFingers write directly, min. 10 users writing,min. 10 points touchScale: 4:3, Active area(mm): min. 1642*1109, Outline area(mm): min. 1776*1245, Boards Material: Alumunium honey comb, Technology: infrared, Writing Type: finger or pen, Positioning Accuracy: max. ≦0.2mm, Touch Preciseness: min. 32768*32768, Cursor Speed: min. ≥125dots/second, Transferring Rate: min. 12m/s, stand USB Length 6m,	

No	Nama Barang	Spesifikasi	Keterangan
		working environment: direct under the sunlight, pen and pointer, software CD, usb cable, wall mount, auto scanning form, updated firmware version, usb data port	**1 unit LCD Projector Short Throw**, Contrast ratio min. 3000:1, Brightness min. 3100 lumens, Aspect ratio: 4:3/16:9, Projection method: rear, front, ceiling, Projection distance range 0,5 – 4 m, Include Bracket LCD bahan alumunium dan Kabel VGA Gold	**2 unit Speaker Pasif:** 2 ways 3 speakers, bass reflex type, Max. Allowable input 600 W, approx. 304,8 mm cone type (woofer), approx. 76mm cone-type x4 (tweeter) 10, Impedance max. 8, Frequency range 48 Hz-20KHz, Rate sensitivity 92dB (1W/1m), Crossover frequency: max. 3KHz, Anti-magnetic type	**1 buah software management pembelajaran:** Software managemen pembelajaran (berbasis PHP, dashboard admin, dashboard teacher,dashboard student, user managemen, upload dan download materipelajan, jadwal penggunaan lab online, support upload video hasil rekaman dalam lab microteaching, pengumuman hasil tes lab microteaching online, Multi user (pengguna tidak terbatas), sorting data by name, date, size, uploader, dapat berjalan sesuai dengan sistem operasi yang ada pada Laptop atau Tablet, Account Log-in dan dilengkapi dengan username dan password tiap user, Teknologi server – client ready (hanya diinstal di server, client dapat menjalankan program dari perangkat masing-masing, free domain, free hosting 4 GB, dilengkapi video tutorial), Sertifikasi ISO 27001:2013 **| 1 buah Kursi Master:** dapat diputar dan mempunyai sandaran lengan, Tinggi dapat diatur**| Karpet seluas ruangan** (maksimal 8x9 m), bahan terbuat dari serabut plastik, tebal min. 4mm polypropylene	**software managemen pembelajaran	B. Ruang Operator (Pengolah Data): 1 unit Komputer Master:** min. core i7, min. 1TB HDD, min. 8 GB DDR 3, Branded, original Windows 10	**1 unit TV Tuner Card HDMI** 75 Ω TV Antena (IEC) /Video Composite (RCA)/HDMI 9720 p/180i) Component (YPbPr, 720p/a080i) Analog Audio L/R X 2/ Remote sensor Support Resolusion : 480i/ 480P/576i/576p/720p/1080i (50/60 Hz), include **kabel LCD min. 15 meter Gold Plate**	**1 unit Speaker Aktif**, USB, Jack 3,5 mm, 1W RMS 200 Hz-18 KHz, 5090 full range 4 70dB	**1 unit Meja Komputer operator**, Bahan Multiplek di lapisi HPL Ukuran PXLXT approx. 180 cm X 60 cm x 73 cm	**1 unit TV LED:** min. 32 Inch, Resolusi layar approx. 1,366 X 768, Dolby digital plus, clear motion rate: 100; motion refresh rate: 50 Hz, Mega contrast wide color enhancer, Include rak TV Ukuran approx 80 X 54 X 70 Cm, dengan putaran di bagian atas dan ukuran yang lebar	**1 unit Amplifier**: 200WX2 (8 Ohm), 350WX2 (4 Ohm), 500WX2 (2 Ohm), bridge 950W, toroidal trafo	**1 unit Mixer audio 8 channel:** 2 Stereo Return, 2 X 1/4"" TRS ALT 3-4 Output, 2 X 1/4"" TRS Control Room Output, 3 Band EQ on Every Channel, 12-Segment Stereo LED Meters, 110 dB A-Weighted (0 dBu In @ = 22 dB Gain , 0,005% / 0,004% A-Weighted	**2 buah Mic Wireless:** frekuensi UHF, Audio frequency response (+/-2 dB), Minimum: 45 Hz/Maximum : 15 Khz, Dynamic Range : less than 100 dB A Weigthting	

No	Nama Barang	Spesifikasi	Keterangan
		Temperature range : -18 to + 50 degrees Celsius, High- Impedance 1/4 inch output head-end voltage is generated | **1 buah Kursi Operator**, Kursi dapat diputar, mempunyai sandaran lengan, tinggi dapat di atur | **1 unit UPS:** Capacity min. 1200 VA | **1 unit Audio Video Splitter 4 Channel:** Video Input : Rated signal Voltge & Impedance : 0,8 -1,0 Vp-p/75 ?, Video Output : Rated signal Voltage & Impedance 1 .0-1.4 Vp-p/75 ?. Frequency : Bandwith : 50 Hz-5,5 Mhz. Audio Input : Rated signal Voltage & Impedance : 2V rms/47 K?. Frequency : Bandwidth : 10 Hz - 20 KHz, 0 dB | **1 unit Digital Video Recorder:** min. 8 channel, Network DVR, HDMI, VGA, NO NEED DDNS registration, support min. 1 SATA HDD - 2 TB, max Impressive | **C. Ruang Observasi (Pengamatan)**: 5 unit Kursi Sekretaris: Kursi dapat di putar dan memiliki sandaran lengan | **1 unit TV LED**: min. 32 Inch, Resolusi layar approx. 1,366 X 768, Include rak TV Ukuran approx. 80 X 54 X 70 cm, Rak TV dengan putaran di bagian atas dan ukuran yang lebar Rak TV | **Sekat ruang**: Bahan rangka min. hollow galvalum lapis gypsum dan dicat, Kaca menggunakan kaca film one way. INCLUDE INSTALASI DAN TRAINING	

E. LABORATORIUM BAHASA

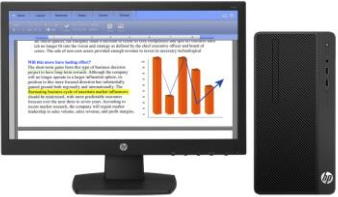| No	Nama Barang	Spesifikasi	Keterangan
1	Laboratorium Bahasa Digital	a. Kapasitas 24 mahasiswa | **A. MASTER SIDE: Master Kontrol (1 unit):** Seat quantity maximal 120 seat with computer and mobile keyboard connection jack which is available to realize Dual control of the main console, "A" (is not built-in amplifier, that means if need to connect, to external speaker, the speaker should hsve amplifier), "B" (is not built-in amplifier, which is no request, additional amplifier for speaker), **Software:** produksi tahun berjalan, yang dibuktikan dari tahun produksi yang muncul di tampilan perangkat lunak tersebut yang sudah terinstal di dalam computer / notebook (preloaded), Fitur : a. Multi user (pengguna tidak terbatas), b. Mempunyai fitur controller level callbacks (before and after filter dan before Render), c. Dapat berjalan sesuai dengan sistem operasi yang ada pada Laptop atau Tablet, d. Account Log-in dan dilengkapi dengan usernamedan password tiap user, e. Editable (seluruh konten dapat ditambah/diperbaharui), f. Teknologi server – client ready (hanya diinstal di server, client dapat menjalankan program dari perangkat masing-masing, jika ada pengembangan dari sekolah), g. Upload konten tidak terbatas (Dapat menampung ribuan bahkan puluhan ribu konten), h. Home/ Halaman Utama; **Komputer Master (1 paket):** min. Core i3 7100; RAM min. DDR3 4GB; Hardisk min. WD 1 TB GB, DVDRW, MONITOR min. 19,5", KEYBOARD +MOUSE, min. original windows 10 profesional 64bit; **Headset teacher (1 unit):** microphone : 9x7/58±2Db, Impedance : max. 32Ohm at 1 KHz, Sensitivity: approx. 105dB/mW, Frequency response : 20~20,000Hz, Cord length : Approx. 2~3M, Weight : Approx. 200g (without cord), Menggunakan kabel ulir atau swivel; **UPS** (1 unit): Capacity : min. 650 VA, Input : Voltage Range : 25%, Frequency : 50 or 60Hz (Auto Sensing), Output : Battery Mode : 10%, Frequency : 550Hz or 60Hz 1Hz, Transfer Time : approx. 2-8ms, Baterai Recharge Time : 2-4 hours recover to 90% capacity, General: Noise Level : Less than 40dBA, Humidity : 0-90% relative Humidity, 0C - +40C, Dimensi: min. 287 x 100 x 142, Berat: approx. 4,45 kg; **Mic Wireless (1 unit):** 1. Jangkauan frekuensi: 180-270mHz, VHF high band, 2. Mode: FM, 3. Tanggapan frekuensi: 50Hz - 15kHz, 4. Power: 110V - 220V, 5. Polar Pattern Mic: Unidirectional, 6. Emisi: Lebih dari 45dB, 7. Power Consumption: 5Watt, Produk Termasuk: 2 buah mic genggam, 1 buah receiver, Kabel 1 meter dengan ujung TRS 1/4"" (akai-akai), 2 buah baterai 9V; **Meja Master (1 unit):** Partikel Board min. 18 mm, Bahan Pelapis PVC sheet, Ukuran min. 220 x 120 x 75 cm; **Kursi Master (1 unit):** Kursi Putar dengan 5 roda dilengkapi sandaran tangan dan hidrolik, model manager. **B. STUDENT SIDE: Student Console (24 unit):** Two channel program for option, Rob to answer function, LCD Display, Severel Examination function, 4 Level of volume, Rob to answer function; **Headset Siswa** (24 unit): microphone : 9x7/58±2Db, Impedance : max. 32 Ohm at 1 KHz, Sensitivity: approx. 105dB/mW, Frequency response : 20~20,000Hz, Cord length : Approx. 2~3M, Weight : Approx. 200g(without cord), Menggunakan kabel ulir atau swivel; **Meja Siswa (twinbooth) (12 unit):** Partikel board min. 18 mm, Bahan pelapis PVC Sheet, Ukuran min. 120 x 54 x 115 cm; **Student Chair (24 unit):** Kursi lipat tipe stainless stell	

No	Nama Barang	Spesifikasi	Keterangan
		C. KELENGKAPAN RUANGAN: Karpet (1 rool): Polypropylene min. 3 mm, Backing: Latex, ukuran min. 40m², pemasangan karpet; **Room Speaker (2 unit):** Rated Input Selection/Impedance : 6W, 3W, 1.5W, 0.8W (100V Line), Frequency Response : approx. 100 ~ 12, 000 Hz, Sound Pressure Level (1W/ 1m) : 90dB, Speaker Components : min. 12cm Dynamic Speaker, External Dimensions (WxHxD) : approx. 290 x 214 x 150mm, Weight : approx. 2.1kg, Material : Enclosure: Wood, grille: Cloth, Color : Enclosure: Light Grey, Grille : Light Grey; **Box Stage dan Panggung (1 paket):** Box stage Bahan Partikel dan kayu dilapisi karpet warna berbeda dengan karpet lantai; **Pendingin Ruangan (AC) + Pasang (1 unit):** Split min. 1,5 PK, Standard R410a, Produk SKU, Kapasitas Pendinginan min. 9000 BTU/h, ukuran Pipa Cair & Gas (Inch) ∅1/4 ∅3/8, Daya Listrik (Watt) approx. 895 Watt, Dimensi (l x w x h) approx. 84 x 27 x 18 cm, Voltase 220 V, Hertz 50 Hz, termasuk perlengkapan dan pemasangan AC. **D. KELENGKAPAN TAMBAHAN: LCD Proyektor min. 3200 lumens (1 Unit):** Native Resolution min. SVGA (800 x 600), Brightness min. 3200 Lumens, Aspect Ratio Native 4:3 (5 aspect ratio selectable), Lens F=2.56-2.8, f=21-23.1mm, Zoom 1.1:1 (Powered), Interfaces Computer In (D-sub 15pin) x 2 (Share with component), Monitor Out (D-sub 15pin) x 1, Composite Video In (RCA) x 1, S-Video In (Mini DIN 4pin) x 1, Audio In (Mini Jack) x 1, Audio Out (Mini Jack) x 1, Speaker 2W x 1, USB (Type mini B) x 1 (Download & Page/down) RS232 (DB-9pin) x 1, IR Receiver x 1 (Front), Power AC100 to 240V, 50 to 60Hz, Dimensions 283 x 95 x 222mm (include feet), 283 x 88.7 x 222mm (exclude feet), Weight approx. 1,8 kg; Screen Projektor Tripod min. 70" (1 unit); Bracket (1 unit), Kabel VGA min. 15 meter (1 unit); **Kelengkapan Instalasi** (1 paket): Kabel listrik min. 3x0,75 mm; TC 6-, Ties 15", Clam 8", Kabel RCA 2 in 1, Ampli eko, Stop Kontak Lubang 6, Stop Kontak Lubang 4, Steker Listrik, Gantungan Headset + Scrup, No Meja 1-40, Kabel Audio dan Power.	

No	Nama Barang	Spesifikasi	Keterangan
		b. Kapasitas 24 mahasiswa, **MASTER SIDE:** Master Kontrol + Software: Pengendali utama sistem lab bahasa yang berbasis software komputer. Bisa dilengkapi dengan sistem *touchscreen* (optional), SYSTEM CONTROL: Micro Control System with internal memory, RS 232 Control, Digital Circuit Operating Voltage 5 VDC +/- 3% TTL Level, Data Speed 19200 Kbps, High Power Amplifier, Tone Control DC Voltage, Pre Amplifier DC Voltage, Output Headset Earphone 8-16 Ohm | Output Room Speaker min. 8 Ohm | Power Supply: 220/240V - 50 Hz | Power Consumption: 300 - 400 Watt | Input: Headset 30-60 Ohm Master Tape, DVD Computer, Audio Recorder, Auxiliary | Frequency Response: 100 - 10.000 Hz S/N Ratio 50dB | Maximum absolute ratings, 1. Operating Voltage: 24 VDC (Audio Circuit) | 6 VDC (Digital Circuit), 2. Operating Temperatures 85 Degrees Celcius, 3. Stand by Temperature 30 Degree Celcius | **SOFTWARE CONTROL:** 1. Listening function; 2. Intercom function; 3. Writing function with keyboard control; 4. Conversation; 5. Video Repeater; 6. Recording audio format mp3; 7. Visualized Attender names and layout; 8. Preprogrammbale Seat Layout; 9. User Friendly Graphical User Interface (GUI); 10. Database class, teacher, student as user entries; 11. Evaluator Quiz; 12. Keyboard Control; 13. Inzo Features; 14. Group Selector; 15. Autorun with Adjustable Delay | **Online Power Monitor:** Description: Online Language Lab Power, Temperature and Humidity Monitor for Master Control . Also mantain the temperature of Master Control for a longer lifetime. Features: Communication over 3G | Can be accessed via Android/IOS/Laptop/PC | WPA/PSK Encrypted | Monitor Power Consumption, temperature, humidity | Maintain temperature in controller for long lifetime use | Sensor Features: Measures kWh, Kvarh, KW, Kvar, KVA, PF, Hz, dmd, V, A, etc | Bi-directional measurement IMP & EXP | Two pulse outputs | RS485 Modbus | Din rail mounting 17.5mm | 45A direct connection | Better than Class 1 accuracy | **Komputer Master:** min. Core i3-3.7, RAM min. 2GB, HDD min. 500GB, dvdrw, Reader/HDMI, led min. 20", No speaker, garansi resmi, min. original Windows 10 Home | **Master Tape Deck**: DVD / SVCD / VCD / CD / MP3 / MPEG4 / MPG / JPEG, 8 Preset Equalizer dan 2 user setting, Surround, Bazzoke, Echo, Clock, Audio, AM/FM with 20 ch memory, Karaoke (AVC dan PMX), Sleep Timer, ON/OFF Timer, Single Deck Cassette Recorder, Band function: Bass, Guitar, Keyboard, SD/MMC/MC Card Slot, USB port, Docking Terminal, Remote Control, Power Consumption: 100w | **Headset teacher**: MIC: type condenser; freq response: 30 - 16.000 Hz; impendece max. 32 Ohm; sensitivity -58 +/- -3 dB, EARPHONE: freq response: 20-16.000 Hz; impendence max. 32 Ohm; sensitivity: 105 dB/mW; cable length: min. 1.5 m; connector/plug: 3 pin | **UPS:** Capacity min. 600 VA 160-240V, AC 50 Hz + input voltage 10%, output voltage : 220 V, AC 50 Hz | **Mic Wireless:** Frequency Stabilization: <±30, Dynamic Range: > 80dB, Total Harmonic Distortion: > 0.5%, Frequency Response: 40Hz - 18 KHz ± 3 dB, Signal-to-Noise Ratio: ≥ 100dB, Signal/Noise Ratio: >82dB | **Meja Master:** Bahan: particle board min. 15 mm dengan laminasi PVC sheet warna beech model U/Standart, ukuran model U: min. 210 x 120 x 75 cm, ukuran model standart : min. 180 x 80 x 75 cm, barang buatan pabrik (knock down system). Merk terdaftar di depkumham | **Kursi Master:** Kursi dapat diputar, mempunyai sandaran lengan, tinggi dapat di atur | **Document Camera:**	Skema dan Spesifikasi Standar Laboratorium Bahasa Sistem Computerized Type LUX

No	Nama Barang	Spesifikasi	Keterangan
		Document Camera, 8X digital zoom, freeze, output VGA & DVI, 850K pixel, Resolution min. XGA | **Audio Recorder:** Support MP3, WMA, WAV, Support USB/SD Memory, Recorder rate: higher bit rate for 192 Kbps, LCD Display, support multilateral languages, enter subdirectory, scan folders, display lyrics, line in record, the external audio source can be recorded into the SD card or U disk, Connect computer, USB sound card. Additional function: Calendar, clock, alarm clock, can by USB cable connect to computer to download SD card, IR remote control, support multi language, reach to 24 countries | **Mouse Pen Tablet:** min. 8"x6" working area, comfortable for easy drawing, painting, and using the PC, Cordless mouse and pen design gives you unlimited freedom, 3D scroll wheel for fast browsing on the internet and in windows documents, make handwriting notes/drawings on the internet & any application program, 1024-level pressure sensitivity for all kinds of shapes and thickness control | **Central Control:** Power Supply: 220/240V, Signal Interface: Audio/video input & output, VGA input (exclude laptop, VGA output, 3.5 stereo output, Power Control: Built -in projector power off protection, Delay time can be modified, built-in electronic screen's power supply, Control Method: DB9 standard learning interface, infrared RS485 bilateral control | **Online class software:** Guru bisa meng-upload materi pembelajaran secara online dan siswa bisa mengunduh materi tersebut secara online | **STUDENT SIDE:** Student Console Frequency Response: 63-10.000 Hz, S/N Ratio: > 50 dB, Distortion : < 3 %, Input Mic : - 60 dB, Intercom: - 15 dB, 5000, Headset: - 10 dB, Student Console + Evaluator Quiz with mini keyboard and LCD Display | **Headset Siswa:** MIC: type: condenser; frequence response: 30 - 16.000 Hz; impendence max. 32 Ohm; sensitity -58 +/- -3 dB, EARPHONE: frequence response: 20-16.000 Hz; impendence max.. 32 Ohm; sensitity: 105 dB/mW; cable length: 1.5 m; connector/plug: 3 pin | **Meja Siswa:** model twinbooth, bahan particle board min. 15 mm dengan laminasi PVC sheet warna beech dengan kaca + nomor siswa di bagian depan, ukuran: min. 123 x 118 x 54 cm, barang buatan pabrik (knock down system) | Student Chair: Bahan stainless steel; jenis lipat (folding chair); min. tinggi 810 mm x lebar 375 mm x panjang 395 mm | **Audio Recorder:** Support MP3, WMA, WAV, Support USB/SD Memory | Recorder rate: higher bit rate for 192 Kbps, LCD Display, support multilateral languages, enter subdirectory, scan folders, display lyrics, line in record, the external audio source can be recorded into the SD card or U disk, Connect computer, USB sound card. Additional function: Calendar, clock, alarm clock, can by USB cable connect to computer to download SD card, IR remote control, support multi language, reach to 24 countries | **KELENGKAPAN RUANGAN:** Karpet plus pemasangan: Bahan terbuat dari serabut plastik, tebal min. 4mm polypropylene, lebar min. 4 meter dan panjang mengikuti ukuran ruangan lantai pada ruang lab. Dilapisi karpet | Room Speaker: Speaker size: min. 8 inch (Three Way); Power: min. 20.000 PMPO | Box Stage Kabel dan Box Stage Master: Box Stage Master: bahan multiplex dilapisi karpet warna berbeda karpet lantai, ukuran approx. 240x180x12cm, **Box Stage Kabel:** bahan multiplex dilapisi karpet berwarna beda dengan lantai, ukuran approx. 240x60x12cm | **Parabola + Digital Receiver with TV Record:** Parabola with digital receiver dengan antena type fulldish, 6 feet, penggerak	

No	Nama Barang	Spesifikasi	Keterangan
		sampai dengan 99 memori position, digital receiver dengan PIP mode | **Smartboard Multitouch:** Perangkat pengajaran interaktif dapat mengubah permukaan yang rata dan keras seperti whiteboard, glassboard, dinding rata menjadi layar digital yang interaktif. Daerah tayang interaktif pada permukaan keras/whiteboard hingga 400cm. Perangkat terdiri dari 1 buah receiver, 1 buah transmitter berupa pena tulis elektronik (stylus pen) yang sekaligus dapat berfungsi sebagai mouse computer dan keyboard wireless. Koneksi perangkat receiver interaktif ke komputer PC/Laptop menggunakan kabel USB. Dapat bekerja pada sistem operasi Window 7, Macintosh, dan Linux. Data atau text maupun gambar dapat dianotasi, di high-light, di-edit, disimpan maupun dihapus. File/Data pengajaran harus dapat disimpan dalam format: PDF, Vector PDF, HTML, Bitmap, JPEG, TIFF, Metafile, dan Power POint. Perangkat dapat merekam tayangan di layar komputer baik audio maupun video ke dalam format file avi, hasil rekaman dapat disimpan dan ditayang ulang dengan window media player | **Pendingin Ruangan (AC):** Cooling capacity min. 1,5 PK; Voltage 200 V/SHz; Dimension indoor approx. 810x220x151 mm; dimension outdoor approx. 660x540x260 mm | **Internet Modem:** Compliant to 3GPP/R99/R5/R6; Support HSDPA / UMTS 2100Mhz (850MHz / 900MHz/ 1900MHz optional); GSM/GPRS/EDGE Quad-Band 850/900/1800/1900 Mhz; SMS Message, Data Service, Phonebook, SIM Management | **KELENGKAPAN TAMBAHAN: Projector:** Resolution: min. SVGA(800 x 600), Brightness: min. 32000 ANSI Lumens, Display Color: 1.07 Billion Colors, Lamp Type: 190W, Horizontal Frequency: 15K-102KHz, Resolution Support: VGA min. (640x480) to UXGA (1600x1200), Vertical Scan Rate: 23-120 Hz, Dimensions (WxHxD): min. 283 x 95 x 222 mm, HDTV Compability: 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, Video Compability: NTSC, PAL, SECAM, include bracket mounting + screeen projector min. 70 inch | Instalasi Kabel Audio dan Power: kabel : LAN, Connector : RJ 45, kabel RCA, kabel listrik	

F.   PERALATAN PENDIDIKAN DAN TIK

No	Nama Barang	Spesifikasi		Keterangan
1	Desktop PC	a.	Desktop PC; min. Intel® Core™ i5-7500 Processor (3.40 GHz, 6M Cache) up to 3.80 GHz; Chipset Intel H110; Memori Standar min. 4GB DDR4; Memori Slot min. 1; Tipe Grafis min. Intel® HD Graphics; Audio Integrated; Hard Drive min. 1TB; Optical Drive DVD-RW; Networking Integrated; Kecepatan Jaringan 10 / 100 / 1000 Mbps; Ragam Card Reader min. 6 in 1 Media Reader; Antarmuka / Interface min. 4 USB 2.0, 4 USB 3.0, 1 DVI-D, 1 VGA, 1HDMI, 1 RJ-45, Pararel & Serial Port, USB Optical Keyboard & MOUSE, Sistem Operasi min Microsoft Windows 10 Professional 64-bit; Monitor min. 18.5" LED; Chassis Form Factor Microtower; Daya / Power 180 Watt	
		b.	Desktop PC, min. 6th Generation Intel Core i5-6400 (6M Cache, up to 3.30 GHz); Operating System min. Windows 10 Single Language (64bit); Memory min. 4GB (4GBx1) min. DDR3L 1600MHz; Hard Drive min. 1TB 7200RPM Hard Drive; DVDRW Optical drive; Monitor min. 18.5"; Graphics min. NVIDIA Geforce 705 2GB GDDR3; Bluetooth + WiFi 802.11bgn + Bluetooth 4.0; LAN 10/100/1000 Ethernet Port; Side Ports min. 2x USB 3.0, Universal Audio Jack; Rear Ports min. 4x USB 2.0, RJ-45, HDMI, VGA, 3-stack audio jacks supporting 5.1 surround sound; Media Card Reader min. 5in1 Memory Card Reader; min. Wired Keyboard; min. Wired Mouse	
		c.	Desktop PC; min. Intel® Core™ i5-7500 Processor (3.40 GHz, 6M Cache) up to 3.80 GHz; Memori Standar min. 4GB DDR4; min. Intel HD Graphics; min. Audio Integrated; Hard Drive min. 1TB HDD; Optical Drive DVD±RW; Networking Integrated; USB Keyboard; USB Mouse; interface: Bagian Depan: 4 x USB 3.0, 2 x USB 3.1 Type C, Card reader min. 5 in 1; 2 x audio; Bagian Belakang: 2 x USB 3.0, 2 x USB 2.0, VGA, 2 x DP, 1 x serial port, LAN, 3 x audio, 2 x PS2, Sistem Operasi min. Microsoft Windows 10 Professional 64-bit; Monitor min. 19.5 Inch	

No	Nama Barang	Spesifikasi	Keterangan
		d. Desktop PC; Intel® Core™ i7-7700 Processor (3.60 GHz, 8M Cache) up to 4.20 GHz; min. 8GB DDR4; min. Intel HD Graphics; Audio Integrated; Hard Drive min. 1TB HDD; Optical Drive DVD-RW; Networking Integrated ; Wired Keyboard; Wired Mouse; Power supply 180 W AC power adapter; External I/O Ports: 1microphone/headphone jack; 2 USB 3.0; 1 SD reader, One 5.25" slim-height bay supporting an optical disk drive, 1 HDMI; 1 power connector; 1 RJ-45; 1 VGA; 2 USB 3.0; 4 USB 2.0; 1 security lock slot; 1 audio in connector; 1 audio out connector; 1 padlock slot; Conexant CX20632 codec with universal audio jack and 2W internal speaker, headset and headphone front ports (3.5 mm), multi-streaming capable; Microsoft Windows 10 Professional; Monitor min. 20 Inch	
		e. Desktop PC; Intel® Core™ i7-7700 Processor (3.60 GHz, 8M Cache) up to 4.20 GHz; min. 8GB DDR4; min. AMD Radeon R7 450X 4GB; Audio Integrated; Hard Drive min. 1TB HDD; Optical Drive DVD-RW; Networking Integrated; Wired Keyboard; Wired Mouse; Antarmuka / Interface: USB; RJ-45 LAN Port; Serial Port; Display Port 1.2; HDMI 1.4; Universal Audio Jack; Sistem Operasi Windows 10 Pro 64bit; Monitor min. 21.5 Inch	
		f. Desktop PC; Intel® Core™ i7-7700 Processor (3.60 GHz , 8M Cache) up to 4.20 GHz; Intel® B250 Express Chipset; Memori Standar min. 8GB DDR4; min. Intel HD Graphics; Audio Integrated; Hard Drive min. 1TB HDD; Networking Integrated; Keyboard USB Keyboard; USB Mouse; Ragam Slot 2x PCI Express®x16, 1x PCI Express®x1, 1x PCI slot; Antarmuka / Interface: Back: 4x USB 3.0 Ports, 2x USB 2.0 Ports, 2x Display Port Ports, VGA Port, HDMI Port, Ethernet (RJ-45) Port, Front: 2x USB 3.0 Ports, 2x USB 2.0 Ports; Headphone and Microphone Jacks; Sistem Operasi min. Microsoft Windows 10 Home 64 bit, Monitor min. 21.5 Inch	

No	Nama Barang	Spesifikasi		Keterangan
2	All in One PC	a.	All in One PC; 7th Generation Intel Core i3-7100U (3MB Cache, 2.4GHz) Processor; Hard Drive min. 1TB SATA 7200RPM; Memory min. 4GB DDR4; min. Integrated Intel HD Graphics 630; DVD-RW; Integrated stereo speakers; Gigabit Ethernet 10/100/1000 Mbps + 802.11ac/b/g/n wireless LAN and Bluetooth 4.0 LE; min. 21.5" 1250nits 16:9 LED Backlight; Hinge : Panel Tiltable from -5 to 30 degree; I/O Ports: 2x USB 3.0, USB 2.0, HDMI, GLAN, Audio; Integrated 2.0MP HD high-sense webcam; 3-pin 135W AC Adapter; Microsoft Office 2016 Professional Plus; SD Card Reader; USB Mouse & USB Multimedia Keyboard; Intrusion alert (via BIOS), One-button recovery (OBR), Kensington Lock Slot, 100% solid capacitors, DASH 1.1, Hard Drive password protection (via BIOS); Microsoft Windows 10 Professional	
		b.	All in One PC; Hard Drive min. 500GB SATA 7200RPM; 7th Generation Intel® Core™ i3 7100T (3MB Cache, 3.4Ghz) processor; min. Intel® B250 Chipset; Memory min. 4 GB DDR4 2400MHz; Two SODIMM slots - Maximum memory is 32GB; min. Integrated Intel® HD Graphics 630; 8x DVD+/-RW 9.5mm Optical Disk Drive; Integrated Waves Maxx Audio; Gigabit Ethernet 10/100/1000 Mbps + Wireless Intel® 3165 802.11ac/b/g/n + Bluetooth 4.2; min. 19.5 inch Non Touch Wide Viewing Angle WLED, HD+ 1600x900 resolution with anti-glare coating; Articulating Easel Stand for OptiPlex 3050AIO; Dimension approx.. 482.6 (W) x 58 (D) x 328.7 (H) mm (19.0 x 2.32 x 12.94 inches); I/O Ports min. 4x USB 3.1 (1 port USB 3.1 with PowerShare), 2x USB 2.0 , 1x DisplayPort 1.2, GLAN, Audio Jack; Developed Recovery Environment, Data Protection System Tools Digital Delivery, Support Assist; Client Command Suite for In-Band systems management; ENERGY STAR 6.1 qualified, EPEAT Registered, TCO Certified, CEL, WEEE, Japan Energy Law, China RoHS; 1.0MP 720P HD Webcam with privacy cover; 3-pin 130 W AC adapter; Microsoft Office 2016 Professional; SD 3.0 Card Reader; Wired Mouse Black & Wired Keyboard; Microsoft Windows 10 Professional.	
		c.	All in One PC; Hard Drive min. 1TB 7200 rpm SATA; Intel Core i3-7100U (2.4Ghz, 3MB Cache, 2 Cores); min. 4 GB DDR4-2133 SDRAM (1x4 GB); min. Intel HD Graphis 620 (Kabylake); DVD-Writer; 2x2 W / channel speakers; Integrated 10/100/1000 GbE LAN, 1 x Ethernet card; 802.11b/g/n (1x1) and bluetooth 4.0; min. 21.5" diagonal FHD IPS anti - glare WLED - backlit (1920x1080); Weight 5.53 KG; Dimension approx. 539 (L) x 185 (W) x 398.8 (H) mm; I/O Ports Rear I/O : 2 x USB 2.0; Headphone/microphone combo; HDMI-Out v1.4 / 1 x VGA Port; VGA Integrated; Integrated Intel KabyLake - U; USB Wired Keyboard; USB Wired Optical	

No	Nama Barang		Spesifikasi	Keterangan
			Mouse; webcam; 65 W external AC power Adapter; Office 2016 Windows 10; HP 3-in-1 Media Card Reader	
		d.	Desktop All In One; Intel® Core™ i3-6006U (2.0 GHz, 3M Cache); Memori Standar 4GB DDR4; Kapasitas Harddisk 1000 GB HDD; Audio Integrated; AMD ATI Radeon 530 2GB; Speaker Integrated; Wired Keyboard; Wired Mouse; Kecepatan Jaringan 10 / 100 / 1000 Mbps; Optical Drive DVD-RW; Microsoft Windows 10 Home; Monitor 21.5 Inch	
		e.	Display NON TOUCH SCREEN Full HD 1920 x 1080 resolution 21.5" LED-backlit LCD; Hard Drive min. 1TB SATA HDD; Intel Core i5-7200U, 3MB cache, up to 3.1 Ghz; Memory min. 4GB DDR4 (Up to 16GB); min. Intel HD Graphics 620; Ethernet LAN; External DVD RW (bundled); WLAN 802.11 ac/a/b/g/n + Bluetooth 4.0; Dimension approx. 489.7 mm X 362.5mm X 10.95 mm; I/O Ports 2 USB 3.0 port ; 2 USB 2.0 port ; 1 HDMI out; 1MP HD USB External Webcam; Power Supply Adapter 65W; SD Card Reader; USB Keyboard and Mouse; Win 10 Home	
		f.	All in One PC; min. 7th Generation Intel® Core™ i5-7200U Processor(3M Cache, up to 2.80 GHz); 8GB Single Channel DDR4 1600MHz (8GBx1); Hard drive min. 1TB 5400 rpm Hard Drive; min. Intel HD Graphics; Tray load DVD Drive; Display 21.5-inch FHD (1920 x 1080) Anti-glare LED-Backlit Touch Display with IPS; 802.11 a/c + Bluetooth 4.0 Dual Band 2,4&5 GHz, 1x1; Wireless Keyboard; Wireless Mouse Black; 10/100/1000 Ethernet Port; port side 2x USB 3.0, 4:1 MCR, 1x Microphone/Headset jack; Ports Rear 2x USB 2.0, RJ-45, Audio Line Out, DC power, HDMI-In (Intel), HDMI-out (AMD); Media Card Reader 4in1 Memory Card Reader; Windows 10 Single Language (64bit); Integrated Widescreen HD 720P Webcam with Dual digital microphone	
		g.	Processor: Intel® Core i5-7200U, Display: 19.5" diagonal FHD UWVA anti-glare WLED-backlit, Memory :4 GB DDR4-2133 SDRAM (1 x 4 GB) Memory slots: 2 SODIMM, Memory card device: 3-in-1 memory card reader, Hard drive: 1 TB 7200 RPM SATA, Keyboard: HP White Wireless Keyboard with volume control, Ports: 2 USB 2.0; 2 USB 3.0; 1 headphone/microphone combo, OS : Windows 10 Pro 64bit + WPS Office 2017	

No	Nama Barang	Spesifikasi	Keterangan
		h. Intel® Core™ i5-7400T Processor (2.40 GHz, Up to 3.00 GHz, 6M Cache); Sistem Operasi Microsoft Windows 10; Networking Integrated; Monitor 21.5 Inch; Memori Standar 4GB DDR4; Audio Integrated; Hard Drive 1TB HDD; Tipe Grafis AMD ATI Radeon 530 2GB; Speaker Integrated; Memori / RAM 4 GB; Optical Drive DVD-RW	
3	Projector	a. Sistem Projector DLP Technology; Resolusi Native WXGA (1280x800); Brightness 3300 Lumens ANSI; Rasio Kontras 20,000:1 (DynamicEco Mode); Rasio Aspek 16:10; Rasio Besaran (Zoom) Optical Zoom: 1.1x ; Digital Zoom:0.8X-2.0X; Input: RGB Input : VGA Input x2, Composite Video : RCA-1 x1, S Video : Mini-Din 4 pin x1, Component Video : Share with VGA x2, Digital : HDMI: 1.4 x 1, Audio input:3.5mm Mini-Mono Jack x1, Control : RS-232(DB-9) x1, Output RGB Output : VGA Output x1, Audio output:3.5mm Mini-Mono Jack x1, Speaker 2W cube x 1, Daya / Power 100-240Vac 50/60Hz (Auto Switching), Konsumsi Daya 265 W (Max.); Dimensi Kemasan: 316 x 103.7 x 228 mm, Berat Produk 2.2 kg	
		b. Technology DLP; WXGA(1280x800); Rasio Kontras 15000; Rasio Aspek 4:3; Tipe Lampu SP-LAMP-086; Input: DMI 1.4, VGA x 2, Composite video, S-Video, 3.5 mm, stereo in x 2, 3.5mm stereo out, RS232C, USB Type B (control & firmware); Kesesuaian Video NTSC / NTSC4.43 / PAL / PAL-M / PAL-N / SECAM, SDTV (480i, 576i), EDTV (480p, 576p), HDTV (720p, 1080i, 1080p); Daya / Power 260W; Dimensi Produk 8.7in x 11.5in x 4.3in (220mm x 292mm x 108mm); Lumens (Eco/High): 5000/3500; Supports 3D content from Blu-ray, cable boxes, dish services and more (over HDMI) at 144Hz and PC-based, 3D content at 120Hz. DLP Link 3D glasses required; Closed Captioning: Yes; Audible Noise (Eco/High, dBA): 29/30; Keystone: ± 40º; Lamp Hours (Eco/High): 6000/5000; Image Offset: 15; Throw Ratio: 2.2~1.9	
		c. Sistem Projector RGB liquid crystal shutter projection system (3LCD); Resolusi Native XGA (1024 x 768); Brightness 3000 Lumens ANSI; Rasio Kontras 10,000:1; Rasio Besaran (Zoom) Type : Optical Zoom (Manual) / Focus (Manual); F-Number : 1.51 - 1.99; Focal Length : 18.2 - 29.2 mm; Zoom Ratio : 1 - 1.6; Throw Ratio : 1.38 - 2.24 (Wide - Tele); Tipe Lampu 200W UHE; Input: Video : 1 x RCA (Yellow), 1 x S-Video, 2 x Component (via D-sub 15-pin), Computer : 2 x D-sub 15-Pin (RGB), 1 x USB 2.0 type B, USB Memory Device : USB Type A Ver.2.0 , Three-In-One USB Display : 1 x USB 2.0 type B, Digital : 2 x HDMI (1 x MHL), Audio : 1 x RCA (Red/White), 2 x Stereo mini jack, Control : 1 x USB 2.0 type B, RS232C, Epson USB Document Camera : 1 x USB 2.0 type B, Network I/O: 1 x RJ45 (100Mbps), Wireless Connectivity :	

No	Nama Barang		Spesifikasi	Keterangan
			Optional (ELP-AP07), Output Video: D-sub 15 pin (black molding), Audio: Stereo mini jack x 1, Speaker Speaker Output : 16 W, Lamp On (Normal / Eco) : 287W / 215W	
		d.	Sistem Projector LCD Technology; Resolusi Native XGA (1024 × 768); Brightness 3000 Lumens; Rasio Kontras 15000:1; Tipe Lampu 10.000 (EcoMode); Input: 1 x RGB In, 1 x USB A, 2 x HDMI, LAN, 1 x RCA, 1 x Mini Jack, Berat Produk 3.0 Kg, Direct Power Off, Auto Keystone Correction	
4	Screen Projector	a.	Manual Wall, Format 4:3, Diagonal size 100" / 150×200 cm	
		b.	Manual Wall, Format 4:3, Diagonal size 100" / 150×200 cm	
5	Printer Laserjet	a.	Print speed black (normal, A4) : Up to 18 ppm, Print speed black (normal, letter) : Up to 19 ppm| First page out black (A4, ready) As fast as 8.5 sec| Recommended monthly page volume 250 to 1500| Duty cycle Up to 5000 pages| Resolution (black) Up to 400 x 600 x 2 dpi (600 dpi effective output)| Paper trays, standard 1 (plus 10-sheet priority feed slot)| Paper trays, maximum 1 (plus 10-sheet priority feed slot)| Connectivity, standard 1 Hi-Speed USB 2.0, 1 WiFi 802.11b/g, Mobile printing capability, Network ready Standard (built-in WiFi 802.11b/g), Ports 1 Hi-Speed USB 2.0| 1 WiFi 802.11b/g| Fax transmission speed 6.4 B(A)| Control panel 3 LED indicator lights (Wireless, Attention, Ready), 2 buttons (Wireless, Cancel), Memory Ram 8 MB| Paper handling input, standard 10-sheet priority feed slot, 150-sheet input tray, Paper handling output, standard 100-sheet output bin, Duplex Print Manual, Finished output handling Sheetfed, Media types Paper (laser, plain, photo, rough, vellum), envelopes, labels, cardstock, transparencies, postcards, Media sizes supported A4, A5, A6, B5, postcards, envelopes (C5, DL, B5), Envelope input capacity Connection and Communication, Supported media weight 60 to 163 g/m²,	

No	Nama Barang		Spesifikasi	Keterangan
			Power consumption 370 watts (Printing), 2.7 watts (Ready), 2.0 watts (Auto-Off), 0.6 watts (Manual-Off), Energy efficiency ENERGY STAR® qualified, Operating temperature range 15 to 32.5º C, Acoustic power emissions 6.4 B(A), Acoustic pressure emissions bystander (active, printing) 50 dB(A)	
		b.	Printing Method Monochrome Laser Beam Printing| Print Speed A4: Up to 18ppm, Letter: Up to 19ppm, Print Resolution 600 x 600dpi, Print Quality with Image Refinement Quality 2400 (equivalent) × 600dpi, Warm-Up Time (From Power On) 10secs. or less, First Printout Time (FPOT); Approx. 7.8secs. Recovery Time (From Sleep Mode) Approx. 1secs., Print Language UFR II LT, Paper Input (Standard) 150 sheets (based on 80g/m2), Paper Output 100 sheets (face down) (based on 80g/m2), Paper Size A4, B5, A5, Legal, Letter, Executive, 16K, Envelope COM10, Envelope Monarch, Envelope C5, Envelope DL, Custom: Width 76.2 to 215.9mm x Length 188 to 355.6mm, Paper Weight 60 to 163g/m2, Paper Type Plain paper, Heavy Paper, Transparency, Label, Envelope.| USB Interface USB 2.0 High Speed| Operation Panel 2 LED Indicators, 2 Operation Key, Device Memory 32MB| Noise Level*4 During Operation: Sound Power Level: 6.53B or less, Sound Pressure Level: Approx. 49.3dB, During Standby: Sound Power Level: Inaudible, Sound Pressure Level: Inaudible, Maximum Power Consumption 840W or less, Average Power Consumption During Operation: Approx. 320W, During Standby: Approx. 1.8W, During Sleep: Approx. 0.8W, Energy Star TEC (Typical Electricity Consumption) 0.48kWh/week, Operating Environment Temperature: 10~30°C, Humidity: 20% to 80% RH (no condensation), Power Requirement 220 - 240V (±10%), 50 / 60Hz (±2Hz)| Monthly Duty Cycle Up to 5,000 pages	© Bhinneka.Com
		c.	Technology Electrophotographic/Laser| Memory 32 MB| Function Compact, Print, Wireless Networking| Interface Hi-Speed USB 2.0, Wireless| Print Speed Up to 20ppm, Print Resolution Up to 2400 x 600 dpi, Manual Duplex| Paper Input (Standard Tray) 150-sheet| Paper Handling Sizes A4, Letter, A5, A5(Long Edge), Executive, Legal, Folio, B5, Paper Output 50-sheet| Power Consumption Ready: 40W, Printing: 380W, Deep Sleep: 0.7W| Noise Level Printing 51dBA	
6	Printer InkJet	a.	Input Tray #1: 100 sheets, A4 Plain paper (75 gsm); Compatible Media Sizes: A4, A5, A6, B5, 10 x 15 cm (4 x 6 in), 13 x 18 cm (5 x 7 in), 9 x 13 cm (3.5 x 5 in), Letter (8½ x 11 in), Legal (8½ x 14 in), Half Letter (5½ x 8½ in), 13 x 20 cm (5 x 8 in), 20 x 25 cm (8 x 10 in), 16:9 wide size, 100 x 148 mm, Envelopes: #10, DL, C6; Photo Printing: Photo Draft - 10x15 cm/4x6 : Approx. 27 sec per photo (W/Border); Photo Default - 10x15 cm/4x6 : Approx. 69 sec per photo (W/Border) , Copier Function: Copy Speed, ISO 29183, A4, Simplex : Approx. 7.7 ipm / 3.8 ipm (Black/Colour) , Copy Quality : Standard copy mode, Maximum Copies from Standalone : 20 copies , Maximum Copy Size : A4, Letter , Scanner Function: Scanner Type : Flatbed colour image scanner ; Sensor Type: CIS , Optical Resolution : 600 x 1200 dpi , Maximum Scan Area : 216 x 297 mm (8.5 x 11.7 Inch) , Scanner Bit Depth, Colour : 48-bit input, 24-bit	

No	Nama Barang	Spesifikasi		Keterangan
			output , Grayscale : 16-bit input, 8-bit output , Black & White : 16-bit input, 1-bit output , Scan Speed (Flatbed / ADF) 300 dpi, Monochrome : 11 sec , Colour : 28 sec , Power Consumption: Operating : 13W ; Standby : 3.8W , Sleep : 0.8 W , Power off : 0.3 W , AC Adapter: AC 100-240V ; Dimensi Produk: 482 x 300 x 145 mm ; Berat Produk: 4.4 Kg	
		b.	Platform: Color Inkjet ; Metode Cetak: InkJet ; Maks. Besaran Kertas: A4 ; Maks. Resolusi4800 , Effective Print Resolution: 4800 (horizontal)*1 x 1200 (vertical) dpi ; Kecepatan Cetak B/W8.8 ipm , Kecepatan Cetak Warna5.0 ipm , Konektivitas: USB, Wireless ; JaringanAvailable , Network DeviceProtocol TCP/IP , Compatible Media SizesA4, A5, B5, Letter, Legal, 4 x 6 , Photo PrintingApprox. 60secs., Copier Functionavailable , Power ConsumptionOFF : Approx. 0.3W , Standby (scanning lamp is off) : Approx. 1.7W , Copying (USB Connection to PC) : Approx. 14W ; AC AdapterAC 100-240V, 50 / 60Hz , Dimensi ProdukApprox. 445 x 330 x 163mm (W x D x H) , Dimensi Kemasan : 48 x 53 x 25 cm ; Berat Produk: Approx. 5.8kg	
		c.	Platform: Multifunction ; Metode Cetak: Thermal Inkjet ; Teknologi Cetak: Thermal Inkjet ; Maks. Besaran Kertas: A4 ; Maks. Resolusi: 4800 ; Kecepatan Cetak B/W: Up to 7.5 ppm ; Kecepatan Cetak Warna: Up to 4.5 ppm ; Konektivitas: 1 Hi-Speed USB 2.0 , Wireless ; Memori Standar: Integrated ; Maks. Memori: Integrated ; Input Tray #1: Paper handling input, standard: 60-sheet input tray , Paper handling output, standard: 25-sheet output tray ; Media: Plain paper, Photo paper, Brochure paper ; Compatible Media Sizes: Media sizes supported: A4, B5, A6, DL Envelope , Media sizes custom: 76.2 x 127 to 215 x 355 mm ; Duplex Printing: Manual ; Copier Function: Copy resolution (black text): Up to 600 x 300 dpi , Copy resolution (color text and graphics): Up to 600 x 300 dpi , Copies, maximum: Up to 9 copies ; Scanner Function: Scanner type: Flatbed , Scan file format: JPEG, TIFF, PDF, BMP, PNG, Scan resolution, optical: Up to 1200 dpi , Bit depth: 24-bit , Scan size (flatbed), maximum: Scan size (flatbed), maximum ; Power Consumption: 10 watts maximum, 0.07 watts (Off), 2.1 watts (Standby), 0.88 watt (Sleep) ; AC Adapter: Input voltage 100 to 240 VAC (+/- 10%), 50/60 Hz (+/- 3 Hz). High voltage: Input voltage 200 to 240 VAC (+/- 10%), 50/60 Hz (+/- 3Hz) ; Dimensi Produk: Minimum dimensions : 525 x 310 x 158 mm , Maximum dimensions : 525 x 553.5 x 256.6 mm , Dimensi Kemasan : 525 x 310 x 158 mm ; Berat Produk: 4.67 kg	
		d.	,200 x 6,000 dpi ; Kecepatan Cetak B/W: 11ppm , Kecepatan Cetak Warna: 6ppm ; Konektivitas: USB 2.0 Hi-Speed ; Memori Standar: 64 MB ; Input Tray #1: 100 sheets ; Compatible Media Sizes: A4, A5, A6, Exe, LTR, LGL, Photo 4X6 ; Copier Function: Copy Resolution :Print: Max. 1200x2400 dpi ,Scan: Max. 1200x1200 dpi ,N-in-1 Function : Compress 2 or 4 pages onto a single sheet (including ID Copy); Scanner Function: Scanning Resolution : Up to 1,200 x 2,400 dpi , Scanning Capability : Colour & Monochrome , Scan to Feature : E-mail, Image, File; Power Consumption: Copying Mode: Approx. 16W , Ready Mode:	

No	Nama Barang		Spesifikasi	Keterangan
			Approx. 2.5W , Sleep Mode: Approx. 0.7W ; Lain-lain: Wireless Network Connection , Mobile Printing iPrint & iScan , AirPrint ; Dimensi Produk: (W x D x H) 435 x 374 x 161 mm ; Berat Produk: 7.1 Kg	
		e.	Color Inkjet	Maks. Resolusi 9600| Effective Print Resolution Black: 600 x 600 dpi| Color: 9600 x 2400 dpi| Kecepatan Cetak B/W 15 ppm| Kecepatan Cetak Warna 10.4ipm ppm| Monthly Usage Volume up to 12,000 pages / month| Konektivitas USB, Wireless| Compatible Media Sizes A3+, A3, A4, A5, B4, B5, LTR, LGL, LDR, 4 x 6", 5 x 7", 8 x 10", 10 x 12", Envelopes (DL, COM10), Custum size (width 55mm - 329mm, length 91mm - 676mm)| Print Head / Ink : Individual Ink Tank| Number of Nozzles : Total 5,120 nozzles| Printable Width : Up to 322.2mm (12.7inch), Borderless: Up to 329mm (13inch)| Ink End Sensor : Optical sensor + Dot count	
		f.	Multifunction| Thermal Inkjet| A3| Maks. Resolusi 4800| Effective Print Resolution 4800 x 1200| Kecepatan Cetak B/W Up to 33 ppm| Kecepatan Cetak Warna Up to 29 ppm| Monthly Usage Volume Up to 12,000 pages| Konektivitas: 1 USB 2.0, 1 Ethernet, 1 Wireless 802.11b/g/n, 1 USB host port, 2 RJ-11 fax| Prosessor 500 MHz| Memori Standar 256 MB| 250-sheet input tray| Duplex Printing Automatic| Facsimile| Copier| Scanner Flatbed, ADF, Digital sending standard features: Scan to PC| Scan to Memory Device| Scan to email	
		g.	A3+| 5760 x 1440 dpi| Black/White 30 ppm| Color 17 ppm| Tray 1# 100| Double-sided Printing: Yes (Manual)| Print Method: On-demand ink jet| Nozzle Configuration: 360 nozzles Black, 59 nozzles each colour (Cyan, Magenta, Yellow)| Print Direction: Bi-directional printing, Uni-directional printing| Maximum Resolution: 5760 x 1440 dpi (with Variable-Sized Droplet Technology)| Minimum Ink Droplet Volume: 3pl| Paper Feed Method: Friction feed| Number of Paper Trays: 1| Connectivity: USB 2.0 Hi-Speed| A4 Plain paper (75gsm)| 20 sheets, Premium Glossy Photo Paper| Output Capacity: 50 sheets, A4 Plain paper 30 sheets, Premium Glossy Photo Paper| Paper Size: A3+, A3, B4, A4, A5, A6, B5, 10x15cm (4x6), 13x18cm (5x7"), 16:9 wide size,Letter (8.5x11"), Legal (8.5x14"), Half Letter (5.5x8.5"), 9x13cm (3.5x5"), 13x20cm (5x8"), 20x25cm (8x10"), Envelopes: #10 (4.125x9.5") DL(110x220mm), C4 (229x324mm, C6(114x162mm)| Maximum Paper Size: 12.95 x 44"	
7	Printer Dotmatrix	a.	Printing Method: Impact dot matrix; Pixel Resolutions Max.: 9 pin, 160 columns max, up to 240 x 216 dpi; Print Speed Black: High Speed Draft Condensed17/20 cpi : 383 / 298 cps, Draft10/12/15 cpi : 260 / 312 / 223 cps, Draft Condensed17/20 cpi : 222 / 260 cps, Draft Emphasized10 cpi : 130 cps, NLQ10/12/15/17/20 cpi : 65 / 78 / 55 / 47 / 56 cps; Antarmuka / Interface: USB 2.0 Full-Speed, Bi-directional parallel interface (IEEE-1284 nibble mode supported); Antarmuka / Interface: USB 2.0 Full-Speed; Ink Catridge Black: Fabric Ribbon Cartridge (Black); Ukuran Kertas: Cut Sheet (Single Sheet) Length : 100 - 364mm, Width : 100 - 257mm, Thickness : 0.065 - 0.14mm, Cut Sheet (Multi Part) Length	

No	Nama Barang		Spesifikasi	Keterangan
			: 100 - 364mm, Width : 100 - 257mm, Thickness : 0.12 - 0.39mm, Cut Sheet (Multi Part) Length : 100 - 364mm, Width : 100 - 257mm, Thickness : 0.12 - 0.39mm, Envelope (No.6) Length : 92mm, Width : 165mm, Thickness : 0.16 - 0.52mm, Envelope (No.10) Length : 105mm, Width : 241mm, Thickness : 0.16 - 0.52mm, Continuous Paper (Single Sheet an Multi part) Length : 101.6 - 558.8mm, Width : 101.6 - 254.0mm, Thickness : 0.065 - 0.39mm, Roll Paper Width : 216mm, Thickness : 0.07 - 0.09mm; Operating : Approx. 27W (ISO/IEC 10561 Letter pattern),(ENERGY STAR compliant) Sleep Mode : Approx. 1.1W, Auto Off Mode : Approx. 0.2W (120V), Approx. 0.3W (230V); Voltase: AC 120V / AC 220 - 240V	
		b.	Printing Method: Dot Matrix; Pixel Resolutions Max.: 80 columns Carriage width (10cpi), 160 columns Max. in compressed mode, Pixel Resolutions Max.: 9 pin, 160 columns max, Up to 240 x 216 dpi, 80 columns Carriage width (10cpi), 160 columns Max. in compressed mode; Print Speed Black: 12 cpi, Super speed: 375cps; Antarmuka / Interface: Centronics Parallel, USB 2.0, Serial RS232; Ink Catridge Black: Ribbon; Memori Standar: 64KB; Voltase: Frequency : 50/60Hz, Voltase: 220V—240V AC; Dimensi: 150 x 349 x 232mm (HxWxD); Berat: 4.2kg	
		c.	Printing Method: Serial Impact Dot Matrix; Pixel Resolutions Max.: Up to 360 x 360 dpi; Antarmuka / Interface: USB 2.0, parallel (Bi-directional) and Serial RS232; Memori Standar: 68 kB; Media Type: Continuous forms, cut sheet; Ukuran Kertas: 76,2 to 254 mm wide; Konsumsi Daya: max 3,8W in Stand by; Voltase: 230 V / 50 to 60 Hz; Dimensi Produk: (H x W x D): 159 x 359 x 285; Berat Produk: 5 Kg;	

No	Nama Barang	Spesifikasi		Keterangan
8	UPS	a.	On-line Double Conversion, UPS 10kVA/10kW, PF 1, 230V, Three-Phase, Tower, Contact Closure, RJ-45 10/100 Base-T, RJ-45 Serial, USB, Power Management Software, Extended Runtime| Nominal Input Voltage : 230V, 400V 3PH| Input Connections : Hard Wire 3 wire (1PH+N+G), Hard Wire 5-wire (3PH + N + G), Input voltage range for main operations : 160 - 275V, Input voltage adjustable range for mains operation : 100 - 275 (half load), 173 - 476 (half load)V, Other Input Voltages : 220, 240, 380, 415| Output Voltage Distortion : Less than 3%, Crest Factor : 3 : 1, Waveform Type : Sine wave| Back-Up Time Half Load 11 min (5000 Watts)| Back-Up Time Full Load 4 min (10000 Watts)| Antarmuka / Interface Contact Closure, RJ-45 10/100 Base-T, RJ-45 Serial, Smart-Slot, USB, Available SmartSlot™ Interface Quantity : 1| Battery Type : Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof, Typical recharge time : 3 hour(s)	
		b.	On-Line Double Conversion, 10000VA/8000W, 220V, PF 0.8, Single-Phase, RS232, USB, Tower, Intelligent Power Software, Koneksi : Hardwired, Kisaran Tegangan Masuk : 176-276V without derating (up to 110-276V with derating), Arus Sirkuit Pendek : 137 A, Tegangan : 220V/230V/240V ±2 %, Voltage THD : <3%, Reseptakel Keluaran : Hardwired| Port Komunikasi : 1 USB port + 1 RS232 serial port (USB and RS232 ports cannot be used simultaneously), Slot Komunikasi : 1 slot for Network-MS, ModBus-MS or Relay-MS cards	
		c.	On-Line Double Conversion| 10000VA/8000W| PF 0.8| 230V| Single Phase| Tower| Low Line Transfer : 176VAC ¡À3% @ 100% Load, 110VAC ¡À3% @ 50% Load, Low Line Comeback : 186VAC @ 100% Load, High Line Transfer : 300VAC ¡À3%, High Line Comeback : 290VAC ¡À3%, Frequency Range : 46-54Hz or 56-64Hz| Current Crest Ratio : 3:1| Waveform (Battery Mode) : Pure Sinewave| Battery Type : 12V9AH, Numbers : 20, Typical Recharge Time : 9 hours recover to 90% capacity| LCD Panel| Alarm	

G. LABORATORIUM DESAIN DASAR

No	Nama Barang	Spesifikasi		Keterangan
1	Kamera Digital	a.	APS C Sensor 24,2 MP Processor Digic 7 Sistem Auto Fokus dual pixel Built in Wifi Bluetooth Creative Assist for beginner	
		b.	Flash internal, hot shoe and view finder APSC-C MOS 24,3 MP Processor Bionz X ISO till 25600 Fast Autofocus 0,06 sec with 179 focus point	
		c.	CMOS APS-C 24,1MP Processor Digic 8 ISO 25600 till 51200 Dual Pixel CMOS AF touch & drag AF	

No	Nama Barang	Spesifikasi	Keterangan
		d. APS-C, Exmor CMOS resolution 24,2 MP Processor Bionz X ISO 100 till 51200 recording video 4K sistem 4D Focus high auto focus (AF) 425 point phase-detect mikrofon "electronic view finder tipe XGA OLED with 2,4MP" WiFi, NFC monitor 3"	
2	Handycam	a. 1/3-inch 12-bit CMOS sensors (1920 x 1080 x 3) F12 sensitivity "Compact shoulder design with interchangeable lens options" "Fujinon 20x optical zoom lens with AF/OIS included" "Dual SDHC/SDXC memory card recording (HD+HD, HD+SD, HD+web, etc.)" "Image sensor: 1/3" 2.2M pixels progressive scan 3CMOS" "Synchronizing system: Internal/external synchronization" Optical image stabilizer "Fujinon F1.6-3.0, 20x (interchangeable) f=4.1-82mm (35mm conversion:29" Shutter speed: 1/4 to 1/10000 Filter diameter 72mm Gain: -6, -3, 0, 3, 6, 9, 12, 15, 18 dB, Lolux, ALC ND filter: Clear, 1/4, 1/16, 1/64 LCD display: 4.3" 1.15M pixels	

No	Nama Barang		Spesifikasi	Keterangan
			"Recording media: 2x SDHC/SDXC memory card Class 4/6/10 (Class4 for AVCHD and H.264 SD/W)" "Audio recording LPCM 2ch/4ch, 48kHz/16-bit (MPEG-2 Long GOP/H.264), AC3 2ch (AVCHD)"	
		b.	Shape Horizontal Valid Video Pixel 28 MP Optical Zoom 15 x LCD Monitor 3.5 inch "Optical Sensor Type / Size 1/2.8 inches Exmor CMOS Sensors" "Resolusi 1920x1080 - Full HD 1280x720 - HD 720x576 1440x1080 - HD" Digital Zoom 30 x "Recording Media SD Card SDHC Card SDXC Card Memory Stick PRO Duo" "3D,Finder,Koneksi USB;HDMI,Tipe Baterai 7.2V (battery pack); 8.4V (AC Adaptor)" "Battery Life Approx. 390 min with NP-F970 [NTSC] or NP-F770 [PAL] batteries (video light Off), Approx. 265 min with NP-F970 [NTSC] or NP-F770 [PAL] batteries (video light On)" "Dimensi (WxHxD) Approx. 174.5 x 187.5 x 342 mm, 6_7/8 x 7_12 x 13_1/2 inches (with lens hood, eye piece. and protrusion)"	

No	Nama Barang	Spesifikasi	Keterangan
		"Berat Approx 2.21 kg, 4 lb 13 oz (with lens hood), Approx. 2.51 kg, Approx. 5lb_8oz (with lens hood, eyecup, NP-F970 battery)"	
3	PC for Design	a. Prosesor: Intel Xeon E3-1275 v6 RAM: 16GB (2x8GB) DDR4 HDD: 1TB Tipe Grafis: AMD Radeon Pro WX 4150 Monitor: 27 inch Sistem Operasi: Win 10 Pro	
		b. Prosesor: Intel Core i5 3.2GHz RAM: 8GB (2x4GB) DDR3 Hardisk: 1TB HDD Grafis: VGA AMD Radeon R9 M390 2GB Monitor: 27″ Retina 5K Display Sistem Operasi: Mac OS X	
		c. Processor: Intel Core i5-8400T RAM: 8GB DDR4 HDD: 2TB VGA: NVIDIA GeForce GTX 1050 4GB Ukuran Layar: 23.8 Inch FHD Touch Sistem Operasi: Windows 10 Home	

No	Nama Barang	Spesifikasi		Keterangan
		d.	Prosesor: Intel Core i7-7700T RAM: 4GB DDR4 HDD: 2TB Grafik: AMD ATI Radeon 530 2GB ODD: DVDRW Ukuran Layar: 23.8" FHD Touchscreen Sistem Operasi: Win 10	
		e.	Processor: Intel Xeon W 8 Core 3.2GHz RAM: 32GB SSD: 1TB Grafik: Radeon Pro Vega 56 graphics 8GB Ukuran Layar: 27 inch with 5K Retina Display Sistem Operasi: macOS High Sierra	
4	Drone	a.	20 Megapixel 1" CMOS Sensor FOV 84° 8.8 mm/24 mm Lens C4K Recording (4096x2160) 3-Axis Gimbal 30-Minute Flight Time 7km long-range control Mechanical Shutter 5-Direction Obstacle Sensing MicroSD Slot (Up to 128GB) LiPo 4S 15.2V 5870mAh Drone Battery	

No	Nama Barang		Spesifikasi	Keterangan
		b.	12MP 1/2.3" CMOS Sensor UHD 4K Video (3840 x 2160) Max Image Resolution: 4056 x 3040 3-Axis Gimbal-Stabilized Camera GPS- & Vision Position-Based Navigation 8GB of Internal Storage Top Speed of 43 mph in Sport Mode 3-Directional Environment Sensing Up to 21 Minutes of Flight Time	
		c.	12MP 1/2.3" CMOS Sensor 2x 24-48mm Optical Zoom + Dolly Zoom 48MP Super Resolution Photos OcuSync 2.0 Transmission Technology Up to 31 Minutes Flight Time Top Speed of 44.7 mph Omnidirectional Obstacle Sensing Hyperlapse Time-Lapse Mode Enhanced HDR Photos with 13 EV	
5	Drawing Table		interactive Pen Display; 21.5"; Full HD 1920 x 1080 Native Resolution; USB	