



ROLL.NO. 0

NEET 2019-20

Test Booklet Code

P**PRE FINAL ROUND 04**

Subject: Biology

Max. Mark : 360

Time : 1.30 Min.

Date :-17/03/2020

Do not open this Test Booklet until you are asked to do so.

Important Instructions :This Booklet contains **08** Pages.

01. The Answer Sheet is inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars on side-1 and side-2 carefully with blue/black ball point pen only.
02. The test is of 1.30 Minutes duration and Test Booklet contains 90 questions. Each question carries 4 marks. For each correct response, the candidate will get 4 marks. For each incorrect response, one mark will be deducted from the total scores. The maximum marks are 360.
03. Use Blue/Black Ball Point Pen only for writing particulars on this page/markings responses.
04. Rough work is to be done on the space provided for this purpose in the Test Booklet only.
05. On completion of the test, the candidate must handover the Answer Sheet to the invigilator in the Room/Hall. The candidates are allowed to take away this Test Booklet with them.
06. The CODE for this Booklet is P. Make sure that the CODE printed on Side-2 of the Answer Sheet is the same as that on this Booklet. In case of discrepancy, the candidate should immediately report to the Invigilator for replacement of both the Test Booklet and the Answer Sheet.
07. The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your roll no. anywhere else except in the specified space in the Test Booklet/Answer Sheet.
08. Use of white fluid for correction is NOT permissible on the Answer Sheet.
09. Each candidate must show on demand his/her Admission Card to the Invigilator.
10. No candidates, without special permission of the Superintendent or Invigilator, would leave his/her seat.
11. No candidates should not leave the Examination Hall without handing over their Answer Sheet to the Invigilator on duty and sign the Attendance Sheet twice. Cases where a candidate has not signed the Attendance Sheet the second time will be deemed not to have handed over Answer Sheet and dealt with as an unfair means case.
12. Use of Electronic/Manual Calculator is prohibited.
13. The candidates are governed by all Rules and Regulations of the Board with regard to their conduct in the Examination Hall. all cases of unfair means will be dealt with as per Rules and Regulations of the Board.
14. No part of the Test Booklet and Answer Sheet shall be detached under any circumstance.
15. Candidate should completely darken one and the only one best response (circle)

For example

Q. No	1	2	3	4
Q. 52	●	○	○	○

16. The candidates will write the Correct Test Booklet Code as given in the Test Booklet/Answer Sheet in the Attendance Sheet.

Name of the Candidate (in Capitals) : _____

Roll Number : in figures _____

: in words _____

Centre of Examination (in Capitals) : _____

Candidate's Signature : _____ Invigilator's Signature _____

Fascimile signature stamp of _____

Centre Superintendent _____

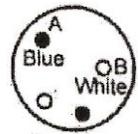
Date :-17/03/2020

BEWARE OF NEGATIVE MARKING

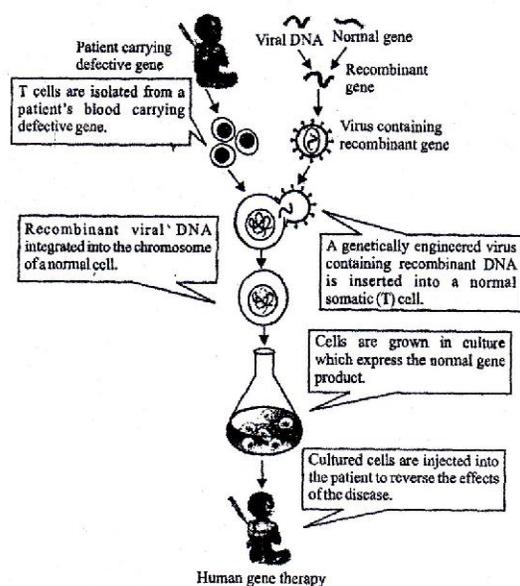
TOPIC :- NCERT UNIT- 6, 9 (Reproduction in Organisms, Sexual reproduction, Human reproduction, Reproductive Health, Biotechnology: Principle & Process, Biotechnology & It's Applications)

- | | |
|--|--|
| <p>01. Crassinucellate ovule shows
 (1) Absence of nucellus
 (2) Well-developed nucellus
 (3) Partially developed nucellus
 (4) Poorly developed nucellus</p> <p>02. Identify from the following, the most commonly used cloning vectors in r-DNA technology
 I. Plasmids II. Bacteriophages
 III. Cosmids IV. Mesosomes
 (1) II, III, IV (2) I, II, III
 (3) III, I, IV (4) II, I, IV</p> <p>03. The male gamete is x and egg is $3x$. The ploidy level in embryo and endosperm will be
 (1) $4x$ in embryo and $4x$ in endosperm
 (2) $4x$ in embryo and $7x$ in endosperm
 (3) $4x$ in embryo and $6x$ in endosperm
 (4) $6x$ in embryo and $12x$ in endosperm.</p> <p>04. During pollen-pistil interaction, chemical components are released from
 (1) Only pollen
 (2) Only pistil
 (3) Both pollen and pistil
 (4) The ovary</p> <p>05. Total number of nuclei involved in double fertilization is
 (1) 2 (2) 3
 (3) 4 (4) 5</p> <p>06. Select the odd one out
 (1) Micropyle
 (2) Embryo sac
 (3) Nucellus
 (4) Pollen grain</p> <p>07. How many meiotic divisions are required for the formation of 300 seeds in <i>Capsella</i>
 (1) 300 (2) 350
 (3) 450 (4) 375</p> <p>08. Find the incorrect match
 (1) Perisperm - Beet
 (2) Dormant seed - 20-25% moisture by mass
 (3) Strawberry-Achenes
 (4) Apomixis - Grasses</p> | <p>09. Scutellum is reported in
 (1) Plants having epiblast
 (2) Plants having open vascular bundles
 (3) Gram
 (4) Castor</p> <p>10. A Bacterial genomic DNA that has two <i>Hind</i> III sites and two <i>EcoR</i> I sites, was cut with both of the enzymes simultaneously for 5 hrs at 37°C. The analysis of the restriction enzyme digestion was made on a 1 % agarose gel. How many bands would one expect to see on the gel ?
 (1) 3 (2) 5
 (3) 4 (4) 6</p> <p>11. Which of the following hormone is called as pregnancy hormone.
 (1) Oxytocin (2) hCG
 (3) Prolactin (4) Estrogen</p> <p>12. Antrum is
 (1) Fluid filled follicular cavity
 (2) An inner theca interna
 (3) The mature follicle
 (4) Fluid less follicular cavity</p> <p>13. Loss of reproductive capacity in women after age of 45 years is
 (1) Menstruation
 (2) Ageing
 (3) Menarche
 (4) Menopause</p> <p>14. Oral contraceptive contains
 (1) LH
 (2) Prolactin
 (3) Oxytocin
 (4) Progesterone</p> <p>15. In r-DNA technology or genetic engineering elution means –
 (1) Remove the DNA from centrifuge tube after centrifugation
 (2) The separated band of DNA are cut out from the gel and extracted from the gel piece
 (3) Separation of the recombinant protein from recombinant cell
 (4) Insertion of recombinant DNA into the host cell</p> |
|--|--|

16. Apomixis means
 (1) Fruits without seed
 (2) Fruits with seed
 (3) Seed without fertilization
 (4) Fruit without fertilization.
17. Which of the following is true in angiosperms ?
 (1) Meiosis occurs in gametophytes to produce gametes
 (2) Meiosis occurs in sporophyte to produce spores
 (3) The gametophyte is the dominant generation in flowering plants
 (4) Plants exist continually as either sporophyte or gametophytes
18. The problem of blindness in poor countries can be taken care of by using the following
 (1) Golden rice
 (2) Transgenic maize
 (3) Transgenic tomato
 (4) *Bt* brinjal
19. Human insulin is being commercially produced from a transgenic species of
 (1) *Saccharomyces cerevisiae*
 (2) *Mycobacterium tuberculosis*
 (3) *Escherichia coli*
 (4) *Rhizobium meliloti*
20. pBR322 which is frequently used as a vector for cloning gene is
 (1) an original bacterial plasmid
 (2) a modified bacterial plasmid
 (3) a Restriction enzyme
 (4) a transposon
21. Which of the following is NOT required in PCR
 (1) DNA primer
 (2) DNA template
 (3) RNA primer
 (4) *Taq* polymerase
22. Which of the following is a first restriction endonuclease?
 (1) pBR322 (2) *EcoR I*
 (3) *Hind II* (4) *Sal I*
23. In a flowering plant the largest number of haploid cells occur in
 (1) Ovule
 (2) Microsporangia
 (3) Root tip
 (4) Cambium
24. Match the following
- | Column I | | Column II
(Digesting Enzymes) | |
|----------|---------------------|----------------------------------|----------------|
| A | Bacterial cell wall | I | Chitinase |
| B | Plant cell wall | II | Ribonuclease |
| C | Fungus cell wall | III | Lysozyme |
| D | RNA | IV | Cellulase |
| | | V | RNA polymerase |
- The correct match is
- | A | B | C | D |
|---------|-----|----|----|
| (1) IV | III | V | II |
| (2) III | IV | I | II |
| (3) IV | I | II | V |
| (4) V | III | I | IV |
25. Golden rice is yellow in colour due to the presence of
 (1) Riboflavins
 (2) β -carotene
 (3) Vitamin B₁
 (4) Complex genetic material.
26. Occurrence of more than four spores in a spore tetrad called
 (1) Polyspermy (2) Polyspory
 (3) Polyembryo (4) Polysiphony
27. Which of the following method is suitable for plants to insert r-DNA?
 (1) Heat shock
 (2) Micro-injection
 (3) Biolistic method
 (4) Disarmed pathogen vectors
28. Tapetum is
 (1) Parietal in origin and is the inner most layer of ovule wall
 (2) Modified endothecium of anther wall
 (3) Outermost layer of sporogenous tissue modification
 (4) Parietal in origin usually the inner most layer of anther wall
29. Graafian follicles contains
 (1) Corpus luteum
 (2) Corpus albicans
 (3) Theca externa and theca interna
 (4) Oogonial cells
30. Gestation period is minimum in
 (1) Rabbit
 (2) Man
 (3) Elephant
 (4) Mouse

31. Which of the following occurs in an angiospermic ovule?
 (1) An antheridium forms from the megasporophyte
 (2) A megaspore mother cell undergoes meiosis
 (3) The egg nucleus is usually diploid
 (4) A pollen tube emerges to accept pollen after pollination.
32. At what stage of endosperm development, you will observe nuclear or cellular type of endosperm?
 (1) When divisions starts in embryo
 (2) When embryo is heart shaped
 (3) Mature stage of endosperm
 (4) Just after division of primary endosperm nucleus.
33. In case of non fertilisation, corpus, Luteum
 (1) Stop secreting progesterone
 (2) Changes to corpus albican
 (3) Starts producing progesterone
 (4) Both 1 & 2
34. In r-DNA technology, specific concentration of a divalent cation is used for one of the following process
 (1) To make competent host for transformation
 (2) In vitro synthesis of multiple copies of DNA
 (3) Separation of DNA fragments
 (4) Precipitation of DNA
35. 'Flavr Savr' variety of tomato which remains fresh for a longer period than normal tomato variety
 (1) has high amount of enzyme polygalacturonase
 (2) has reduced amount of enzyme polygalacturonase
 (3) is a pest resistant variety
 (4) is rich in vitamin A and prevents night blindness.
36. *Bacillus thuringiensis* forms protein crystals which contain insecticidal protein. This protein
 (1) binds with epithelial cells of midgut of the insect pest ultimately killing it
 (2) is coded by several genes including the gene cry
 (3) is activated by acidic pH of the foregut of the insect pest
 (4) does not kill the carrier bacterium which is itself resistant to this toxin
37. Given diagram shows colonies of bacteria. Find out correct statement.
- 
- (1) Colony 'B' has recombinant which shows insertional inactivation
 (2) Colony 'A' has recombinant bacteria having gene of interest
 (3) Colony 'B' has non recombinant bacteria having functional Lac-Z gene
 (4) Colony 'A' has non recombinant having non functional lac-Z gene.
38. Menstruation is caused by
 (1) Increase in FSH level
 (2) Fall in oxytocin level
 (3) Fall in progesterone level
 (4) Increase in oestrogen level
39. Transgenic mice are being used to test the safety of
 (1) polio vaccine (2) β -antitrypsin
 (3) milk protein (4) antibodies
40. Which of the following is/are CORRECT about the process of RNA interference?
 (a) This is used to prevent the infestation of protozoans
 (b) It takes place in some eukaryotic and all prokaryotic organisms as a methods of cellular defense
 (c) The method involves silencing of a specific mRNA due to a complementary dsRNA molecule
 (d) It is novel strategy to produce pest-resistant plants
 (1) c and d (2) a and c
 (3) a, c and d (4) c only
41. For transformation, micro-particles coated with DNA to be bombarded with gene gun are made up of
 (1) silver or platinum (2) silicon or platinum
 (3) platinum or zinc (4) gold or tungsten
42. The down streaming process of a biosynthesis product produced in a bio-reactor includes the following steps
 (1) Denaturation, annealing
 (2) Denaturation, separation
 (3) Separation, purification
 (4) Separation, elution

43. The introduction of T-DNA into plants involves
 (1) Exposing the plants to cold for a brief period
 (2) Allowing the plant roots to stand in water
 (3) Infection of the plant by *Agrobacterium tumefaciens*
 (4) Altering the pH of the soil, then heatshocking the plants
44. How many plants in the list given below are polycarpic?
 Wheat, Rice, Maize, Bamboo, Mango, Guava, Lemon, Oranges.
 (1) Six (2) Three
 (3) Four (4) Five
45. Figure given below depict the procedure for gene therapy. Pick up the disorders for which this technique has been applied successfully



- (1) SCID due to (ADA) Deficiency
 (2) AIDS due to (ADA) Deficiency
 (3) Myasthenia gravis due to (ADA) Deficiency
 (4) Both (1) and (3).
46. Find out correct order of vegetative propagules of plants like Potato, Ginger, Agave, *Bryophyllum* and Water Hyacinth
 (1) Offset, bulbil, leaf bud, rhizome and eyes
 (2) Leaf bud, bulbil, offset, rhizome and eyes
 (3) Eyes, rhizome, bulbil, leaf bud and offset
 (4) Rhizome, bulbil, eyes, leaf bud and offset
47. MTP Stands for
 (1) Multi trade practices
 (2) Multiple termination of pregnancy
 (3) Multiple temporary pregnancy
 (4) Medical termination of pregnancy
48. A doctor while operating on an HIV(+ve) patient accidentally cuts himself with a scalpel. Suspecting himself to have contracted the virus which test will he take to rule out/ confirm his suspicion as serve the purpose of early diagnosis?
 (1) PCR
 (2) Routine urine examination
 (3) ELISA
 (4) Both 1 and 3
49. The embryo with 8-16 blastomeres is called
 (1) Gastrula (2) Foetus
 (3) Blastula (4) Morula
50. Which of the following statements are CORRECT with respect to a bioreactor ?
 a) It can process large volumes of culture
 b) It provides optimum temperature and pH which is required to produce product
 c) It is completely an automated tool
 d) It is a compact thermal cyclers
 (1) a and b (2) c and d
 (3) a, b and c (4) b and d
51. In water pollinated species,
 a. Pollen grains are long and ribbon like
 b. All pollen grains are protected from getting wet.
 c. Flowers are not very colourful
 d. They do not produce nectar.
 (1) Only a and b are correct
 (2) Only a and b are wrong
 (3) All are correct
 (4) All are wrong
52. Read the following steps that are involved in recombinant DNA technology arrange them in CORRECT order
 I. Transfer the r-DNA into the host
 II. Isolation of DNA from selected organism
 III. Fragmentation of DNA by restriction enzymes
 IV. Ligation of DNA into a vector
 (1) III, IV, I, II (2) I, IV, II, III
 (3) II, III, IV, I (4) IV, III, I, II
53. Tubectomy, a method of population control is performed on
 (1) Both male and female
 (2) Males only
 (3) Females only
 (4) Only pregnant females

54. Which of the following hormone is called as pregnancy maintaining hormone.
- (1) Estrogen
 - (2) hCG
 - (3) Progesterone
 - (4) Relaxin
55. Match the columns :
- | Column I | | Column II | |
|----------|----------|-----------|----------------------|
| A. | Zoospore | (i) | Penicillium |
| B. | Conidia | (ii) | Sponges |
| C. | Gemmule | (iii) | <i>Hydra</i> |
| D. | Buds | (iv) | <i>Chlamydomonas</i> |
- (1) A = (i), B = (iv), C = (ii), D = (iii)
 - (2) A = (iii), B = (ii), C = (i), D = (iv)
 - (3) A = (iv), B = (iii), C = (ii), D = (i)
 - (4) A = (iv), B = (i), C = (ii), D = (iii)
56. 'Terror of Bengal':
- (1) Is the most invasive terrestrial weed
 - (2) Was introduced in India for its good quality fruits
 - (3) Is a slow growing aquatic weed
 - (4) Is *Eichhornia*
57. Read the following statements :
- (i) *Eichhornia* contributes extra oxygen to the water bodies which reduces the mortality of fishes
 - (ii) *Zingiber* propagates vegetatively by tap roots
 - (iii) Fleshy buds which take part in vegetative propagation are called bulbils, e.g., *Agave*
 - (iv) A potato tuber having atleast one eye, i.e., axillary bud can form a new plant
 - (v) *Bryophyllum* possess leaf buds
- Which of the above statements is / are correct ?
- (1) (i), (ii) and (iii)
 - (2) (iii), (iv) and (v)
 - (3) (ii), (iii) and (iv)
 - (4) (ii) only
58. What is the chromosome number in the meiocytes of human beings, fruit fly, *Ophioglossum* and *Zea mays* respectively ?
- (1) 46, 20, 1260, 8
 - (2) 46, 1260, 20, 8
 - (3) 46, 8, 1260, 20
 - (4) 46, 8, 20, 1260
59. Saheli, a female antifertility pill is used
- (1) Daily
 - (2) Weekly
 - (3) Quarterly
 - (4) Monthly
60. Which of the following organisms requires a medium through which male gametes move ?
- (1) Algae, bryophytes and gymnosperms
 - (2) Pteridophytes and angiosperms
 - (3) Bryophytes and pteridophytes only
 - (4) Algae, bryophytes and pteridophytes
61. Find out the true (T) / false (F) statements and choose the correct option :
- I. During unfavourable condition, *Amoeba* reproduce by multiple fission
 - II. External budding is present in *Hydra*, *Spongilla* and starfish (seastar)
 - III. Estrous cycle is characteristics of mammalian females other than primates
 - IV. Transverse binary fission occurs in *Paramecium* whereas in *Euglena* longitudinal binary fission occurs
- (1) I-F, II-F, III-T, IV-F
 - (2) I-T, II-T, III-T, IV-T
 - (3) I-F, II-T, III-F, IV-T
 - (4) I-T, II-F, III-T, IV-T
62. The term 'clone' cannot be applied to offspring formed by sexual reproduction because :
- (1) Offspring do not possess exact copies of parental DNA
 - (2) DNA of only one parent is copied and passed in to the offspring
 - (3) Offsprings are formed at different times
 - (4) DNA of parent and offspring are completely different
63. Which of the following tools of recombinant DNA technology is INCORRECTLY paired with its use
- (1) Restriction enzyme – Production of RFLPs
 - (2) DNA ligase – that cuts DNA, creating the sticky ends
 - (3) DNA polymerase – used in a polymerase chain reaction to amplify section of DNA
 - (4) Reverse transcriptase – production of cDNA from mRNA
64. Which of the following technique is used to alter the information content of the genetic manipulation.
- (1) Gene therapy
 - (2) Tissue culture
 - (3) Genetic engineering
 - (4) DNA finger printing

65. Which of the following genes were introduced in cotton to protect it from cotton bollworms?
 (1) *Cry* II Ac and *Cry* I Ab
 (2) Bt I Ac and Bt II Ab
 (3) *Cry* I Ac and *Cry* II Ab
 (4) *Nif* genes
66. Which tissue is required to be present in between stock and scion during grafting?
 (1) Xylem (2) Phloem
 (3) Meristem (4) Parenchyma
67. Which of the following statements is CORRECT regarding Genetic Engineering Approval committee (GEAC)?
 I. It makes decision regarding the validity of GM research.
 II. It ensures the safety of introducing GM organisms for public services.
 III. Genetic modification of organisms can have unpredictable results when such organisms are introduced into the ecosystem. Therefore, the Indian government has set up organisation such as GEAC.
 (1) I & II
 (2) II & III
 (3) I & III
 (4) I, II & III
68. Which one of the following is the most widely accepted method of contraception in India, as at present
 (1) Cervical cap
 (2) Tubectomy
 (3) Diaphragm
 (4) IUDS (Intra Uterine Devices)
69. After *in vitro* fertilisation
 (1) Embryo with more than 8 cells are implanted in uterus
 (2) Embryo with more than 16 cells are not implanted in uterus
 (3) Embryo with 8-16 cells can be implanted in uterus.
 (4) Embryo with cells more than 32 is implanted in fallopian tube.
70. The function of suspensor is
 (1) To provide water
 (2) To provide oxygen
 (3) To thrust the embryo towards endosperm to provide more food
 (4) To suck food
71. Post-fertilization events do not include
 a. Formation of primary endosperm cell
 b. Maturation of ovules in seed
 c. Formation of ovary into fruit
 d. Formation of embryo inside seed
 (1) Only a
 (2) Only b
 (3) Only c
 (4) None of these
72. A human protein which is being obtained from transgenic animals and is used to treat emphysema is
 (1) alpha-lactalbumin
 (2) thyroxine
 (3) α -1-antitrypsin
 (4) insulin.
73. Which of the following is not a benefit of transgenic animals?
 (1) Investigation of new treatments for diseases
 (2) Early detection of diseases
 (3) Testing the safety of vaccines
 (4) To produce useful biological products
74. Name of restriction enzyme EcoR II is derived from
 (1) *Escherichia Coli* RI 11
 (2) *Escherichia Coli* RY 13
 (3) *Escherichia Coli* RY 11
 (4) *Escherichia Coli* RI 13
75. If the transformed host cells with ampicillin resistant gene are spread on agar plates containing ampicillin, which of the following condition results
 (1) Only transformants will grow and untransformed cells will die
 (2) Only untransformed cells will grow and transformants will die
 (3) Both transformants and untransformants will grow
 (4) Both transformants and untransformants will die
76. In the process of construction of the first artificial recombinant DNA, the plasmid of which of the following bacterium was used
 (1) *Escherichia coli*
 (2) *Streptococcus pneumoniae*
 (3) *Salmonella typhimurium*
 (4) *Agrobacterium tumefaciens*

77. Choose the option which shows two plants in which new plantlets arise from the same organ during vegetative propagation ?
 (1) *Solanum tuberosum* and *Saccharum* (sugarcane)
 (2) *Rosa* (rose) and *Dahlia*
 (3) Potato and sweet potato
 (4) Ginger and sweet potato
78. Which of the following is correct ?
 (1) In plants both male and female reproductive structures can be present on the same plant or on different plants.
 (2) In several fungi, the term homothallic is used to denote the dioecious conditions
 (3) Cucurbits and coconuts are dioecious
 (4) Papaya and date palm are monoecious
79. A diploid plant body produces gametes and a haploid plant body produces gametes.
 (1) Haploid, haploid
 (2) Haploid, diploid
 (3) Diploid, haploid
 (4) Diploid, diploid
80. Which is related with male
 (1) I.U.C.D
 (2) Tubectomy
 (3) Diaphragm
 (4) Vasectomy
81. Purpose of tubectomy is to prevent
 (1) Egg formation.
 (2) Embryonic development
 (3) Fertilisation
 (4) Coitus
82. The test tube baby programme employs which one of the following techniques.
 (1) Gamete intra fallopian transfer (GIFT)
 (2) Zygote intra fallopian transfer (ZIFT)
 (3) Intra cytoplasmic sperm injection (ICSI)
 (4) Intra uterine insemination(IUI)
83. First country of world which adopt family planning programme.
 (1) Japan
 (2) USA
 (3) India
 (4) Bangladesh
84. Find out the incorrect statement(s)
 (1) The chances of survival of young ones are greater in viviparous animals than in oviparous animals
 (2) In *Datura*, tomato, etc. sepals remain attached even after fertilization.
 (3) Asexual reproduction is better than sexual reproduction
 (4) All
85. The hormone that mainly prevents ovulation and formation of corpus luteum
 (1) Estrogen
 (2) Progesterone
 (3) LH
 (4) FSH
86. Testes descends into scrotum in mammals for
 (1) Fertilization
 (2) Spermatogenesis
 (3) Development of sex organ
 (4) Development of visceral organs
87. Corpus luteum secretes
 (1) LH
 (2) FSH
 (3) Estrogen
 (4) Progesterone
88. Which of the following is incorrect?
 I. Gemmules, Gametes, Gonads and Genitalia are connected to asexual reproduction.
 II. Bacteria, fungi and lower plants survive during adverse conditions by formation of thick-walled spores.
 III. Seedless fruits in Banana are produced through parthenogenesis.
 IV. Stem cuttings are commonly used in the propagation of rose.
 (1) Only I (2) II and III
 (3) III and IV (4) IV and I
89. Which of the following companies started selling humulin in the year 1983?
 (1) Eli Lilly (2) Genetech
 (3) GEAC (4) None of these
90. The stickiness of DNA ends facilitates the action of which enzyme –
 (1) DNA polymerase
 (2) DNA Ligase
 (3) Restriction endonuclease
 (4) Alkaline phosphatase