

CET – BIOLOGY – 2011

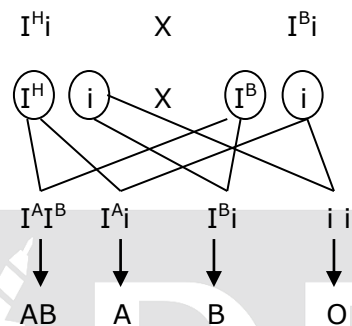
VERSION CODE: A – 1

1. Four children belonging to the same parents have the following blood groups A, B, AB and O. Hence, the genotypes of the two parents are

- 1) Both parents are homozygous for 'A' group
- 2) One parent is homozygous for 'A' and another parent is homozygous for 'B'
- 3) One parent is heterozygous for 'A' and another parent is heterozygous for 'B'
- 4) Both parents are homozygous for 'B' group

Ans: (3)

One parent is heterozygous for 'A' and another parent is heterozygous for 'B'



2. Mitotic stages are not observed in

- 1) Cosmarium
- 2) E.coli
- 3) Saccharomyces
- 4) Chlorella

Ans: (2) E.coli

Because, it is bacterium. It undergoes binary fission

3. The types of ribosomes found in prokaryotic cell are

- 1) 100 S
- 2) 80 S
- 3) 60 S
- 4) 70 S

Ans: (4) 70 S

4. The name of Smt. Thimmakka is associated with the
- 1) planting and conservation of avenue trees
 - 2) agitations against hydroelectric project
 - 3) 'Appiko' movement
 - 4) conservation of fauna and flora of the western ghats

Ans: (1) planting and conservation of avenue trees

5. Dog distemper is a disease carried by a
- 1) bacterium
 - 2) viroid
 - 3) prion
 - 4) virus

Ans: (4) virus

6. When a fresh water protozoan is placed in marine water,
- 1) the contractile vacuole disappears
 - 2) the contractile vacuole increases in size
 - 3) a number of contractile vacuoles appear
 - 4) the contractile vacuole remains unchanged

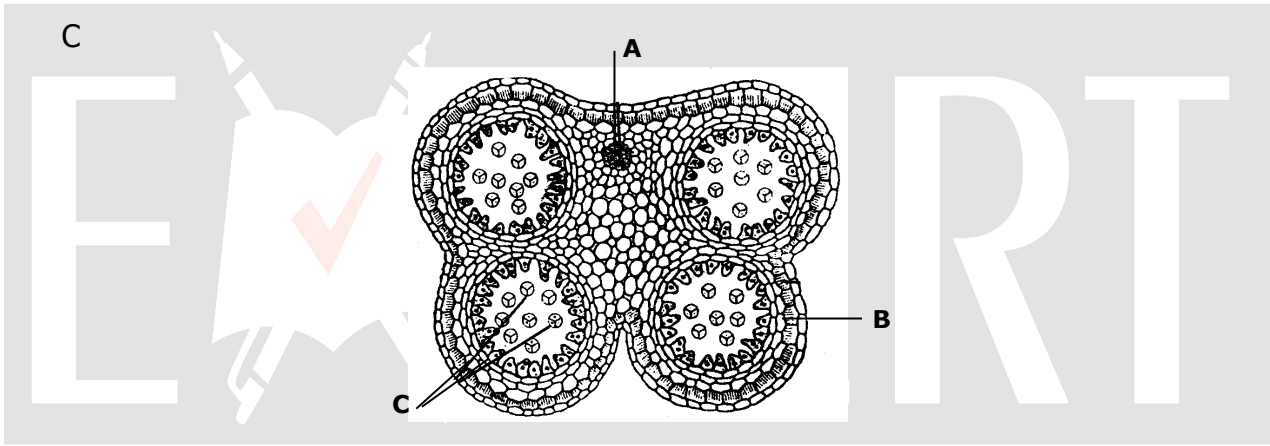
Ans: (1) the contractile vacuole disappears

Because, it does conserve water and does not eliminate water

7. The 2005 Nobel Prize for Physiology / Medicine was awarded to Barry Marshall and Robin Warren of Australia for their discover of
- 1) human papilloma virus causing cervical cancer
 - 2) bacterium Helicobacter pylori causing peptic ulcer
 - 3) prions, a new biological principle of infection
 - 4) Human Immunodeficiency Virus

Ans: (2) bacterium Helicobacter pylori causing peptic ulcer

8. The following is the diagram of T.S. of Anther. Identify the parts labeled A, B, C



- 1) A = Connective, B = Endothecium, C = Pollen grain
- 2) A = Endothecium, B = Connective, C = Pollen grain
- 3) A = Pollen grain, B = Connective, C = Endothecium
- 4) A = Endothecium, B = Pollen grain, C = Connective

Ans: (1) A = Connective, B = Endothecium, C = Pollen grain

9. Pick the mammal with true placenta

- 1) Kangaroo
- 2) Echidna
- 3) Platypus
- 4) Mongoose

Ans: (4) Kangaroo

Kangaroo = pouched mammal. (2) and (3) are egg laying mammals

10. Which one of the following is correct?

- 1) Introns are present in m-RNA and exons are present in t-RNA
- 2) Codons are present in m-RNA and anticodons in t-RNA
- 3) Every intron is a set of three terminator codons
- 4) Exons are present in eukaryotes while introns are present in prokaryotes

Ans: (2) Codons are present in m-RNA and anticodons in t-RNA

Introns (non-coding) Exons (coding) are present in Eukaryotes. Prokaryotes do not have introns

11. Casparian strips are present in the of the root.

- 1) epiblema 2) cortex 3) perycycle 4) endodermis

Ans: (4) endodermis

Endodermis of monocot root, that is, Suberin – 'U' shaped thickening

12. How do you differentiate a frog from a toad?

- 1) Frog has no exoskeleton but toad has scales
2) Frog respire through lungs but toad respire through skin
3) Frog has a tail but toad has no tail
4) Frog has no parotid glands but toad has a pair of parotid glands

Ans: (4) Frog has no parotid glands but toad has a pair of parotid glands

13. Column I contains larval stages and Column II contains the group to which it belongs. Match them correctly and choose the right answer.

	Column – I		Column – II
A	Planula	p	Annelida
B	Tornaria	q	Mollusca
C	Trochophore	r	Arthropoda
D	Bipinnaria	s	Chordata
E	Glochidium	t	Echinodermata
		u	Coelenterata

1) A = u, B = s, C = p, D = t, E = q

2) A = q, B = t, C = p, D = s, E = u

3) A = t, B = s, C = r, D = q, E = p

4) A = s, B = r, C = q, D = p, E = t

Ans: (1) A = u, B = s, C = p, D = t, E = q

14. Read the following statements A and B.

A: Many organs of aquatic plants float in water.

B: Large air gaps are present in the collenchyma tissues of lotus leaf.

Select the correct answer.

- 1) Statement A is correct and B is wrong
- 2) Statement B is correct and A is wrong
- 3) Statements A and B both are correct
- 4) Statements A and B both are wrong

Ans: (1) Statement A is correct and B is wrong

Aerenchyma is a parenchyma

15. Arrange the following in the ascending order of Linnaean hierarchy

- 1) Kingdom – order – species – genus – class – family – phylum
- 2) Kingdom – family – genus – species – class – phylum – order
- 3) Kingdom – phylum – class – order – family – genus – species
- 4) Species – genus – family – order – class – phylum – kingdom

Ans: (4) Species – genus – family – order – class – phylum – kingdom

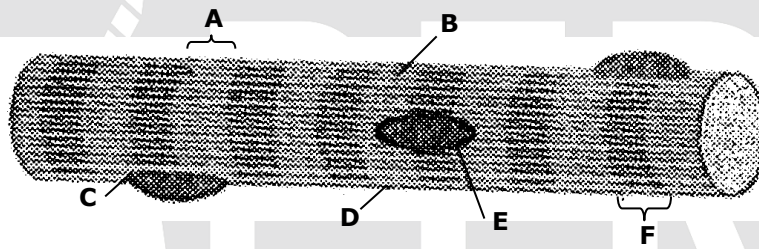
16. Animals which possess cleidoic eggs exhibit.

- 1) External fertilization and internal development
- 2) Internal fertilization and internal development
- 3) Internal fertilization and external development
- 4) External fertilization and external development

Ans: (3) Internal fertilization and external development

They are land eggs. E.g. reptiles

17. The diagram given below represents the histology of a striped muscle. Label the parts A, B, C, D, E and F.



1) A – Sarcoplasm, B – Nucleus, C – Sarcolemma, D – Myofibril,
E – Dark band, F – Light band

2) A – Sarcoplasm, B – Light band, C – Myofibril, D – Sarcolemma,
E – Nucleus, F - Dark band

3) A – Light band, B – Sarcoplasm, C – Myofibril, D – Sarcolemma,
E – Nucleus, F – Dark band

4) A – Sarcolemma, B – Nucleus, C – Dark band, D – Light band,
E – Sarcoplasm, F – Myofibril

**Ans: (3) A – Light band, B – Sarcoplasm, C – Myofibril, D – Sarcolemma,
E – Nucleus, F – Dark band**

18. Populations are said to be allopatric when

- 1) they are physically isolated by natural barriers
- 2) they are sharing the same area but cannot interbreed
- 3) they live together and breed freely to produce viable offspring
- 4) they are isolated but often come together for breeding

Ans: (1) they are physically isolated by natural barriers
(2) = Sympatric population

19. The World Intellectual Property Day is observed on

- 1) February, 29th
- 2) June, 30th
- 3) April, 26th
- 4) September, 5th

Ans: (3) April, 26th

20. Which one of the following is an example of chlorophyllous thallophyte?

- 1) Volvariella 2) Spirogyra 3) Nephrolepis 4) Gnetum

Ans: (2) Spirogyra

(1) = achlorophyllous

(3) and (4) = are not thallophytes as they possess root and leaf

21. Pinus belongs to the class

- 1) Gentopsida 2) Cycadopsida
3) Coniferopsida 4) Sphenopsida

Ans: (3) Coniferopsida

22. With reference to enzymes, which one of the following statements is true?

- 1) Apoenzyme = Holoenzyme + Coenzyme
2) Holoenzyme = Apoenzyme + Coenzyme
3) Coenzyme = Apoenzyme + Holoenzyme
4) Holoenzyme = Coenzyme – Apoenzyme

Ans: (2) Holoenzyme = Apoenzyme + Coenzyme

Complete enzyme

23. Gametophyte is the dominant phase in the lifecycle of

- 1) Hibiscus 2) Nephrolepis
3) Cycas 4) Riccia

Ans: (4) Riccia

Because it is a bryophyte

24. In a typical Mendelian cross which is a dihybrid cross, one parent is homozygous for both dominant traits and another parent is homozygous for both recessive traits. In the f_2 generation, both parental combinations and recombinations appear. The phenotypic ratio of parental combinations to recombinations is

- 1) 10 : 6 2) 12 : 4 3) 9 : 7 4) 15 : 1

Ans: (1) 10: 6

In 9: 3: 3: 1 ratio, (9 + 1) 10 are parental and (3 + 3) 6 are recombinants.

25. A balanced diet does NOT include

- 1) Carbohydrates and fats
- 2) Nucleic acids and enzymes
- 3) Proteins and vitamins
- 4) Minerals and salts

Ans: (2) Nucleic acids and enzymes

26. Match the types of the fruits listed in Column I, with the examples listed on Column II. Choose the answer which gives the correct combination of alphabets of the two columns.

	Column – I		Column – II
A	Capsule	p	Paddy
B	Berry	q	Mango
C	Drupe	r	Sunflower
D	Cypsela	s	Tomato
		t	Ladies finger

1) A = t, B = s, C = q, D = r

2) A = t, B = r, C = p, D = q

3) A = s, B = t, C = q, D = r

4) A = p, B = q, C = r, D = t

Ans: (1) A = t, B = s, C = q, D = r

27. In genetic code, 61 codons code for 20 different types of amino acids. This is called

- 1) Colinearity
- 2) Commaless
- 3) Degeneracy
- 4) Nonambiguity

Ans: (3) Degeneracy

28. BY the statement 'survival of the fittest', Darwin meant that

- 1) The strongest of all species survives
- 2) The most intelligent of the species survives
- 3) The cleverest of the species survives
- 4) The most adaptable of the species to changes survives

Ans: (4) The most adaptable of the species to changes survives

29. Which one of the following plants is considered as lesser known species of food crops?

- 1) Psophocarpus tetragonolobus
- 2) Sorghum Vulgare
- 3) Eleusine Coracana
- 3) Pennisetum typhoides

Ans: (2) Sorghum Vulgare

30. When 2 to 3 drops of Benedicts reagent are added to a urine sample and heated gently, it turns yellow. This colour change indicates that

- 1) Urine contains 2% glucose
- 2) Urine contains 0.5th glucose
- 3) Urine contains 1.5% glucose
- 4) Urine contains 1% glucose

Ans: (4) Urine contains 1% glucose

(1) = 2% = brick red;

(2) = 0.5% = green

31. BT brinjal is an example of transgenic crops. In this, BT refers to

- 1) Bacillus tuberculosis
- 2) Biotechnology
- 3) Betacarotene
- 4) Bacillus thuringiensis

Ans: (4) Bacillus thuringiensis

32. Which one of the following is NOT an antitranspirant?

- 1) PMA
- 2) BAP
- 3) Silicon oil
- 4) Low viscosity

Ans: (2) BAP.

Benzyl aminopurine. It is a synthetic cytokinin.

PMA. Phenyl mercuric acetate – a fungicide used as antitranspirant.

Low viscosity wax and silicon oil are antitranspirants.

33. The brainstem is made up of

- 1) Midbrain, pons, cerebellum
- 2) Midbrain, pond, medulla oblongata
- 3) Diencephalon, medulla oblongata, cerebellum
- 4) Cerebellum, cerebrum, medulla oblongata

Ans: (2) Midbrain, pons, medulla oblongata

34. The loosely arranged nonchlorophyllous parenchyma cells present in lenticels are called

- 1) Complementary cells
- 2) Passage cells
- 3) Water stomata
- 4) Albuminous cells

Ans: (1) Complementary cells

Water stomata are hydathode

Passage cells are thin walled endodermal cells of roots

Albuminous cells are parenchyma cells associated with the sieve cells of gymnosperm.

35. Column I contains terms and column II contains definitions. Match them correctly and choose the right answer.

	Column I		Column II
A	Parturition	p	Attachment of zygote to endometrium
B	Gestation	q	Release of egg from Graafian follicle
C	Ovulation	r	Delivery of baby from uterus
D	Implantation	s	Duration between pregnancy and birth
E	Conception	t	Formation of zygote by fusion of the egg and sperm
		u	Stoppage of ovulation and menstruation

- 1) A = q, B = s, C = p, D = t, E = r
- 2) A = s, B = r, C = p, D = t, E = q
- 3) A = t, B = p, C = q, D = r, E = s
- 4) A = r, B = s, C = q, D = p, E = t

Ans: (4) A = r, B = s, C = q, D = p, E = t

36. CAM pathway is observed in

- 1) Pineapple 2) Maize 3) Sunflower 4) Sugarcane

Ans: (1) Pineapple

37. The number of ATP produced when a molecule of glucose undergoes fermentation is

- 1) 4 2) 36 3) 2 4) 38

Ans: (3) – Two

Gross ATP production = 04

2 ATP are used in the initial process of glycolysis. Therefore $4 - 2 = 02$

38. Silk produced by Antheraea mylitta is also called

- 1) Muga silk 2) Tassar silk 3) Eri silk 4) Mysore silk

Ans: (2) Tassar silk

Muga silk by Antheraea assama

Eri silk by Philosamia ricini

39. Which of the following hormones is a steroid?

- 1) Estrogen 2) Insulin 3) Glucagon 4) Thyroxine

Ans: (1) Estrogen

Insulin & glucagons – peptide hormones

Thyroxine – amine hormone

40. More men suffer from colour blindness than women because

- 1) women are more resistant to disease than men
2) the male sex hormone testosterone cause the disease
3) the colour blind gene is carried on the 'Y' chromosome
4) men are hemizygous and one defective gene is enough to make them colour blind

Ans: (4) Men are hemizygous and one defective gene is enough to make them colour blind

Colourblind is x-linked recessive character. In male there is single x-chromosome and corresponding gene on y – chromosome is absent.

41. Which one of the following theories on the origin of life is mostly accepted?
- 1) Special creation
 - 2) Steady state
 - 3) Panspermia
 - 4) Chemical origin

Ans: (4) Chemical origin

Panspermia. Life comes from outerspace

Special creation: God created the earth in 7 days.

42. The rosette habit of cabbage can be changed by application of
- 1) IAA
 - 2) GA
 - 3) ABA
 - 4) Ethaphon

Ans: (2) GA

Gibberlic acid induces rapid elongation of internode

43. Effective filtration pressure in glomerulus is caused due to
- 1) powerful pumping action of the heart
 - 2) secretion of adrenalin
 - 3) Afferent arteriole is slightly larger than efferent arteriole
 - 4) Vacuum develops in proximal convoluted tubule and sucks the blood

Ans: (3) Afferent arteriole is slightly larger than efferent arteriole.

This increases the volume of blood in glomerulus and increase the filtration rate.

44. Banana bunchytop virus is transmitted through
- 1) Pentalonia nigronervosa
 - 2) Aedes aegypti
 - 3) Culex sp
 - 4) Agribacterium sp

Ans: (1) Pentalonia nigronervosa (Aphid)

Aedes aegypti: vector for dengue feces, chikun gunya, yellow fever etc.

Culex sp: vector for J.B.E

45. In a tissue culture media, the resource of the phytohormone is

- 1) Agar agar 2) Glucose 3) Micronutrients 4) Coconut milk

Ans: (4) Coconut milk

Coconut milk contain cytokinin.

46. With reference to the pituitary, which of the following statements is true?

- 1) Neurohypophysis secretes vasopressin and oxytocin
2) Neurohypophysis secretes TSH and STH
3) Neurohypophysis collects and stores vasopressin and oxytocin
4) Adenohypophysis secretes vasopressin and oxytocin

Ans: (3) Neurohypophysis collects and stores vasopressin and oxytocin

Neurohypophysis donot secrete hormones vasopressin and oxytocin are secreted by hypothalamus and stored released by Neurohypophysis.

47. Column I contains terms and column II contains their meanings. Match them properly and choose the right answer.

	Column I		Column II
A	Glycogenesis	p	Conversion of glycogen to glucose
B	Glycosuria	q	Conversion of glyucose to glucogen
C	Glyconeogenesis	r	Excretion of glucose in urine
D	Glycogenolysis	s	Conversion of noncarbohydrate sources to glucose
E		t	Conversion of glucose to starch

1) A = p, B = q, C = r, D = s

2) A = q, B = r, C = s, D = p

3) A = q, B = p, C = r, D = s

4) A = p, B = t, C = q, D = s

Ans: (2) A = q, B = r, C = s, D = p

48. The term genetic RNA refers to

- 1) genetic material of RNA viruses
- 2) the RNA that carries genetic message
- 3) the RNA that helps gene regulation in lac-operon
- 4) the RNA present in mitochondria

Ans: (2) the RNA that carries genetic message

49. As per the guidelines of the Indian Red Cross society, which of the following persons is recommended for blood donation?

- 1) People not in good health, under the influence of alcohol or drugs
- 2) Ladies during menstruation, pregnancy and breast feeding
- 3) Healthy women but unwed and below the age of 35
- 4) Persons who are immunized with live vaccines

Ans: (4) Person who are immunized with live vaccines

But donor should be symptoms free.

50. In a typical heart, if EDV is 120 ml of blood and ESV is 50 ml of blood, the stroke volume (SV) is

- | | |
|------------------------------|---------------------------|
| 1) $120 - 50 = 70$ ml | 2) $120 + 50 = 170$ ml |
| 3) $120 \times 50 = 6000$ ml | 4) $120 \div 50 = 2.4$ ml |

Ans: (1) $120 - 50 = 70$ ml

EDV = End diastolic volume

ESV = End systolic volume

$SU = EDU - ESV$

51. The term, 'southern blotting' refers to

- 1) transfer of DNA fragments from invitro cellulose membrane to electrophoresis gel
- 2) attachment of probes to DNA fragments
- 3) transfer of DNA fragments from electrophoresis gel to nitrocellulose sheet.
- 4) comparison of DNA fragments from two sources

Ans: (3) transfer of DNA fragments from electrophoresis gel into nitrocellulose sheet

Developed by E.M Southern

52. In some chordates, the notochord is modified as the vertebral column. Such animals are called vertebrates. Which of the following statements make sense?
- 1) All chordates are vertebrates but all vertebrates are not chordates
 - 2) All vertebrates are chordates and all chordates are vertebrates
 - 3) All vertebrates are chordates but all chordates are not vertebrates
 - 4) chordates are not vertebrates and vertebrates are not chordates

Ans: (3) All vertebrates are chordates but all chordates are not vertebrates
cephalochordate do not possess spinal cord

53. A clone is

- 1) a group of genetically similar organisms produced through asexual reproduction
- 2) a group of genetically similar organisms produced through sexual reproduction
- 3) a group of dissimilar organisms produced as a result of asexual reproduction
- 4) a group of genetically dissimilar organisms produced as a result of sexual reproduction

Ans: (1) a group of genetically similar organisms produced through asexual reproduction.

54. The space between the plasma membrane and the cell wall of a plasmolyzed cell surrounded by a hypertonic solution is occupied by the

- 1) hypotonic solution
- 2) isotonic solution
- 3) hypertonic solution
- 4) water

Ans: (3) hypertonic solution

Because cell wall is permeable membrane but cell membrane is selective permeable.

But Answer is given in the question itself

55. When the blood contains a high percentage of CO_2 and a very low percentage of O_2 , the breathing stops and the person becomes unconscious. This condition is known as

- 1) suffocation 2) asphyxia 3) emphysema 4) eupnoea

Ans: (2) Asphyxia

Eupnoea: normal breathing.

Emphysema: is due to smoking this lead to short breath.

Suffocation: death caused by the obstruction of air pathway or due to hypoxia

56. Which one of the following is not related to guttation?

- 1) Water is given out in the form of droplets
2) Water given out is impure
3) Water is given out during daytime
4) Guttation is of universal occurrence

Ans: (3) water is given out during day time

Guttation seen only in mesophytic plants during night and early morning

57. The force responsible for upward conduction of water against gravity comes from

- 1) transpiration 2) photosynthesis
3) translocation 4) respiration

Ans: (1) transpiration

Pull or suction is called transpiration pull

58. Column I contains names of the sphincter muscles of the alimentary canal and column II contains their locations. Match them properly and choose the correct answer.

	Column I		Column II
A	Sphincter of ani internus	p	opening of hepatopancreatic duct into duodenum
B	Cardiac sphincter	q	between duodenum and posterior stomach
C	Sphincter of oddi	r	guarding the terminal part of alimentary canal
D	Ileocaecal sphincter	s	between oesophagus and anterior stomach
E	Pyloric sphincter	t	Between small intestine and bowel

1) A = r, B = q, C = s, D = p, E = t 2) A = q, B = t, C = p, D = s, E = r

3) A = r, B = s, C = p, D = t, E = q 4) A = s, B = r, C = p, D = q, E = t

Ans: (3) A = r, B = s, C = p, D = t, E = q

59. Which one of the following reactions is an example of oxidative decarboxylation?

- 1) Conversion of succinate to fumerate
- 2) Conversion of fumerate to malate
- 3) Conversion of private to acetyl CoA
- 4) Conversion of citrate to isocitrate

Ans: (3) conversion of pyruvate to acetyl CoA

-Preparatory phase of Kreb's cycle

60. Chemiosmosis hypothesis given by Peter Mitchel proposes the mechanism of

- 1) synthesis of NADH
- 2) synthesis of ATP
- 2) synthesis of FADH₂
- 4) synthesis of NADPH

Ans: (2) synthesis of ATP