

KCET – BIOLOGY – 2017

1. Pollen grains are generally spherical, measuring about:
- | | |
|------------------------|------------------------|
| 1) 25 – 50 centimeters | 2) 25 – 50 millimeters |
| 3) 25 – 50 micrometers | 4) 25 – 50 nanometers |

Ans: (C)

2. The hormones involved in maintaining calcium balance in the human body are:
- | | |
|-----------------|----------------|
| 1) MSH and ACTH | 2) PTH and LTH |
| 3) PTH and TCT | 4) TCT and FSH |

Ans: (C)

3. The safe method of disposal of e-waste is:
- | | |
|----------------------|--------------------------|
| 1) Incineration | 2) Burning in open field |
| 3) Thrown into water | 4) Dumping in forest |

Ans: (A)

4. Identify the correct combination of crop-variety and insect pests.
- | | |
|--|--|
| 1) Brassica – Pusa A – 4 – Aphids | 2) Brassica – Pusa sem – 3 – Jassids |
| 3) Flat beam – Pusa Gaurav – Fruit borer | 4) Okra – Pusa sawani– shoot and Fruit borer |

Ans: (D)

5. In dihybrid cross, when F_1 plants ($RrYy$) are self hybridised, the ratio of segregation of yellow and green in F_2 is:
- | | | | |
|------------------|--------------|----------|------------------|
| 1) 9 : 3 : 3 : 1 | 2) 1 : 2 : 1 | 3) 3 : 1 | 4) 1 : 1 : 1 : 1 |
|------------------|--------------|----------|------------------|

Ans: (C)

6. The number of ATP molecules utilised for the breakdown of one molecule of glucose during glycolysis is:
- | | | | |
|------|------|------|------|
| 1) 6 | 2) 2 | 3) 8 | 4) 4 |
|------|------|------|------|

Ans: (B)

7. Which of the following is not a pre-fertilisation events in higher organisms?
- | | |
|------------------|--------------------|
| 1) Gametogenesis | 2) Gamete transfer |
| 3) Cleavage | 4) Meiosis |

Ans: (C)

8. The volume of air inspired or expired by a healthy man per minute is:
- | | |
|----------------------|----------------------|
| 1) 1000 ml – 1100 ml | 2) 2500 ml – 3000 ml |
| 3) 6000 ml – 8000 ml | 4) 400 ml – 500 ml |

Ans: (C)

9. In lac – operon concept of gene expression, allolactose acts as,
- | | | | |
|-----------------|--------------|--------------|------------|
| 1) Co-repressor | 2) Repressor | 3) Co-enzyme | 4) Inducer |
|-----------------|--------------|--------------|------------|

Ans: (D)

10. Which class of Algae reproduces asexually by non-motile spores and sexually by non-motile gametes?
- | | | | |
|-----------------|------------------|-----------------|-----------------|
| 1) Rhodophyceae | 2) Chlorophyceae | 3) Phaeophyceae | 4) Cyanophyceae |
|-----------------|------------------|-----------------|-----------------|

Ans: (A)

11. If E.coli is allowed to grow for 40 minutes in a medium containing N^{15} , then the number of N^{14}/N^{14} containing DNA would be:

- 1) Zero 2) 10 3) 2 4) 20

Ans: (A)

12. As the organic matter increases in a water body, the BOD:

- 1) Increases 2) Decreases
3) Remains unchanged 4) Not a parameter

Ans: (A)

13. The human protein α - 1 antitrypsin is obtained from:

- 1) Transformed bacteria 2) Transgenic animal
3) Transgenic plant 4) A plant from Western Ghats

Ans: (B)

14. Which one of the following character favours the process of normal spermatogenesis in human male?

- 1) Descent of tests into scrotum 2) Infection by mumps virus during childhood
3) Tests remain in the abdominal cavity 4) Increased scrotal temperature

Ans: (A)

15. Identify the elements whose deficiency causes both necrosis and chlorosis.

- 1) Cu, Co 2) Mo, Ca 3) Mg, K 4) Fe, Mn

Ans: (C)

16. Accessory ducts of reproductive system of human female include:

- 1) Ovaries, uterus & vagina 2) Oviduct, uteruc & vagina
3) Oviduct, ovaries & ovarian ligaments 4) Oviduct, ovaries & mammary glands

Ans: (B)

17. Mac Arthur's vision of 5 closely related species of warbles living on same tree were able to avoid competition and co-exist by behavioural difference. This is an example for:

- 1) Competitive release 2) Resource partitioning
3) Competitive exclusion principle 4) Adaptive radiation

Ans: (B)

18. The type of epithelium found in the fallopian tube which functions to move particles or mucous in specific direction is:

- 1) Squamous epithelium 2) Cuboidal epithelium
3) Ciliated epithelium 4) Columnar epithelium

Ans: (C)

19. Which of the following plants produce zygomorphic flowers?

- 1) Canna 2) Gulmohar 3) Mustard 4) Hibiscus

Ans: (B)

20. The average length of hnRNA in human is,

- 1) 500 bases 2) 3000 bases 3) 1500 bases 4) 2.4 million bases

Ans: (B)

21. If a tetraploid plant contains 48 chromosomes in its nucellus, then number of chromosomes in the egg cell and in a synergid respectively:

- 1) 24 and 48 2) 24 and 24 3) 48 and 48 4) 48 and 24

Ans: (B)

22. In India the action plants for family planning were initiated in the year:

- 1) 1950 2) 1972 3) 1951 4) 1947

Ans: (C)

23. Which of the following crop is developed by mutation breeding, that is resistant to yellow mosaic virus and powdery mildew?

- 1) Mung bean 2) Okra 3) Chilli 4) Cow – pea

Ans: (A)

24. The anticodon found on the t-RNA for tryptophana amino acid is,

- 1) UCC 2) CUU 3) ACC 4) UGG

Ans: (C)

25. The secondary wall material Suberin deposited on the walls of

- 1) Phellogen and phelloderm
2) Epidermis of stem and endodermis of root
3) Pericycle of stem and endodermis of root
4) Phellum of stem and endermis of root

Ans: (D)

26. A transformed bacterium with human gene, fails yp produces desired protein. The reason could be:

- 1) Amino acid codons for human and bacteria differ
2) The bacterial promoter gene cannot induce transcription of human gene.
3) Human protein is formed but degraded by bacteria.
4) Human gene may have intron which bacteria cannot process.

Ans: (D)

27. Inbreeding depression occurs due to continuous

- 1) Intra-breeding 2) Inter-breeding
3) Inter-generic breeding 4) Inter-specific breeding

Ans: (A)

28. Identify the plants that are dominant during Jurassic period.

- 1) Monocotyledons and Arborscent lycopods
2) Angiosperms and Bryophytes
3) Ferns, Conifers and Cycads
4) Sphenopsida and Ginkgos

Ans: (C)

29. Polymerisation of DNA nucleotides during the synthesis of lagging strand occurs in:

- 1) 3' → 5' direction 2) 5' → 3' direction
3) Any direction 4) Promotor to terminator direction

Ans: (B)

30. The outcome of Calvin cycle include:

- | | |
|----------------------------------|---|
| 1) One glucose, 18 ATP, 12 NADPH | 2) 6 CO ₂ , 18 ATP, 12 NADPH |
| 3) One glucose, 18 ADP, 12 NADP | 4) 6 CO ₂ , 18 ADP, 12 NADP |

Ans: (C)

31. The inner cell mass of blastocyst becomes:

- 1) differentiated into embryo proper
- 2) extraembryonic membranes
- 3) placenta
- 4) chorionic villi

Ans: (A)

32. The variety of indigenous cows is an example for

- | | |
|-------------------------|------------------------|
| 1) Genetic diversity | 2) Species diversity |
| 3) Ecological diversity | 4) Microbial diversity |

Ans: (A)

33. So far 1.5 million species are identified, in which the number of fungi species identified is More than the combined total of

- | | |
|-------------------------------------|---|
| 1) Algae, lichens, mosses and ferns | 2) Fishes, amphibians, reptiles and mammals |
| 3) Molluscs and crustaceans | 4) Molluscs, fishes and amphibians |

Ans: (B)

34. Which of the following vector-borne diseases caused by Aedes mosquitoes?

- | | |
|----------------------------------|------------------------------|
| 1) Malaria and Sleeping sickness | 2) Kala azar and Filariasis |
| 3) Dengue and Chikungunya | 4) Ascariasis and Filariasis |

Ans: (C)

35. Which one of the following has been commercialized as blood-cholesterol lowering agent?

- | | | | |
|------------|------------------|------------------|-------------------------|
| 1) Statins | 2) Streptokinase | 3) Cyclosporin-A | 4) α - Trypsin-A |
|------------|------------------|------------------|-------------------------|

Ans: (A)

36. Example for autosomal hyper aneuploidy is:

- | | |
|----------------------|---------------------------|
| 1) Down's syndrome | 2) Klinefelter's syndrome |
| 3) Turner's syndrome | 4) Haemophilia |

Ans: (A)

37. The process of decomposition delays when,

- 1) aeration is sufficient.
- 2) warm and moist environment exists.
- 3) detritus is rich in lignin and chitin
- 4) the detritus is made up of sugars and nitrogen compounds.

Ans: (C)

38. Replacement of which one of the following nucleotides in the Hb^A gene causes sickle cell anaemia?

- | | | | |
|-----------|-----------|-----------|-----------|
| 1) A to T | 2) C to G | 3) U to A | 4) T to A |
|-----------|-----------|-----------|-----------|

Ans: (A)

39. In human females, the number of primary follicles left in each ovary at puberty is:

- 1) 3000- 30,000
- 2) 30,000 – 60,000
- 3) 60,000-80,000
- 4) 1,50,000- 1,60,000

Ans: (C)

40. The type of sex determination in honey bee is:

- 1) Diploidy
- 2) Haplo-diploidy
- 3) ZZ-ZW
- 4) Haploidy

Ans: (B)

41. Match the number of nucleotides of genome of Column-I with the organisms of Column-II
Choose the correct option given below:

Column – I	Column – II
1. 5386nucleotidesp.	E. coli
2. 48502dp	q. man
3. 4.6×10^6 bp	r. Drosophila
4. 3.3×10^9 bp	s. ϕ x 174 bacteriophage
	t. bacteriophage – lambda

- 1) 1-r, 2-t, 3-s, 4-p
- 2) 1-s, 2-p, 3-q, 4-r
- 3) 1-s, 2-t, 3-p, 4-q
- 4) 1-s, 2-q, 3-p, 4-t

Ans: (B)

42. Pasammophytes are growing i/ on

- 1) Rock
- 2) Shades
- 3) Water
- 4) Deserts

Ans: (D)

43. Read the statements 1 and 2. Choose the correct option:

Statement 1: RNAi take place in all prokaryotic and eukaryotic organisms as a method of cellular defence.

Statement 2: RNA interference is a pre-translational process.

- 1) Both statements are correct.
- 2) Statement – I correct, statement – 2 incorrect
- 3) Both statements are incorrect
- 4) Statement-1 incorrect, statement – 2 correct.

Ans: (D)

44. In humans, common cold is caused by:

- 1) Rhabdovirus
- 2) Retrovirus
- 3) Rhinovirus
- 4) Bacculovirus

Ans: (C)

45. Climax community is a state of:

- 1) non-equilibrium
- 2) near equilibrium
- 3) pioneer species
- 4) changing community

Ans: (B)

46. From which bacterium the REN-Sal-I is isolated?

- 1) *Escherichia coli*
- 2) *Streptococcus aureus*
- 3) *Haemophilus influenza*
- 4) *Streptomyces albus*

Ans: (D)

47. Which one of the following is not included under endomembrane system?

- 1) Endoplasmic reticulum
- 2) Mitochondria
- 3) Lysosome
- 4) Vacuole

Ans: (B)

48. Which one of the following is the identifiable character of Neanderthal man?

- 1) buried their dead
- 2) lived before 2 million years ago
- 3) developed pre-historic cave art
- 4) brain capacity 650 cc-800 cc

Ans: (A)

49. Implantation is influenced by

- 1) LH
- 2) Progesteron
- 3) Relaxin
- 4) FSH

Ans: (B)

50. Which of the following characters is not required for autogamy?

- 1) Flowers should be bisexual
- 2) Anthers and stigma should lie close to each other.
- 3) Flowers require synchrony In pollen release and stigma maturation
- 4) Required pollination agents.

Ans: (D)

51. Morphine is obtained from the:

- 1) Inflorescence of Cannabis
- 2) Leaves of Erythroxyllum
- 3) Latex of Poppy plant
- 4) Root of Atropa

Ans: (C)

52. Which of the following is not a characteristic of facilitated transport?

- 1) Uphill transport
- 2) Highly selective
- 3) Requires special membrane proteins
- 4) Transport saturates

Ans: (A)

53. Amoeba is immortal because:

- 1) parental body is distributed among the offsprings during binary fission
- 2) it is microscopic
- 3) it reproduces by sexual method only
- 4) it is multicellular

Ans: (A)

54. Match the enzymes of Column-I with the functions of Column-II. Choose the correct option.

- | Column - I | Column - II |
|-----------------|--------------------------|
| 1. Enterokinase | p. digests milk proteins |
| 2. Rennin | q. digests carbohydrates |
| 3. Amylase | r. activates trypsinogen |
| 4. Lipase | s. acts on nucleic acids |
| | t. breakdown fats |

- 1) 1-s, 2-p, 3-t, 4-q,
- 2) 1-r, 2-p, 3-t, 4-q
- 3) 1-s, 2-q, 3-p, 4-t
- 4) 1-r, 2-p, 3-q, 4-t

Ans: (B)

55. The blood cell that secretes histamine, serotonin and heparin is:

- 1) T-lymphocyte 2) Killer cell 3) Basophil 4) Neutrophil

Ans: (C)

56. Restriction endonucleases are isolated from some bacteria. Their role in bacteria is:

- 1) defence against virus 2) synthesis of proteins
3) act as genetic material 4) help in reproduction

Ans: (A)

57. A plant shows the following modifications:

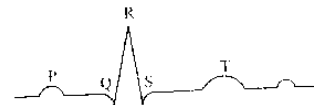
- (i) leaves covered with dense hairs (ii) leaf surface shiny or glabrous
(iii) leaf blade remains rolled during day The adaptation of the plant is to:

- 1) conserve water 2) prevent excessive heat
3) check transpiration 4) absorb water

Ans: (C)

58. In the following diagrammatic representation of a standard ECG the 'T' represents.

- 1) Repolarisation of Atria
2) Depolarisation of Atria
3) Repolarisation of Ventricles
4) Depolarisation of Ventricles



Ans: (C)

59. Identify the 'order' from the following:

- 1) Panthera 2) Muscidae 3) Carnivora 4) Insecta

Ans: (C)

60. Which of the following options show the characters of mycoplasma?

- 1) Smallest living cell without cell wall survive without oxygen
2) Smallest living cell without cell wall survive with oxygen
3) Smallest living cell with, cell wall survive without oxygen.
4. Smallest living cell with cell wall survive with oxygen.

Ans: (A)