

B.Sc. 1 Year (Zoology)

Paper: Cell Biology & Genetics

Multiple Choice Questions:

1 . The term cell was given by

- a. Robert Hooke
- b. Tatum
- c. Schwann
- d. De Bary

Answer: a

2. The prokaryotic cells are characterized by:

- (a) A distinct nuclear membrane
- (b) Absence of chromatin material
- (c) Distinct chromosome
- (d) Absence of nuclear membrane

Answer: d

3. In a prokaryotic cell, DNA is:

- (a) Enclosed by nuclear envelop
- (b) Lacking
- (c) Not a genetic material
- (d) without a membrane

Answer: d

4. Cell wall is found around the:

- (a) Prokaryotic cells
- (b) Algal cells
- (c) Plant cells
- (d) All the above

Answer: d

5. Prokaryote and eukaryotes have the common:

- (a) Mitotic apparatus
- (b) Histone
- (c) Genetic code
- (d) Mitochondria

Answer: c

6. Unicellular microscopic organisms were first studied by:

- (a) Robert Hooke      (b) Priestley
- (c) Pasteur              (d) Leeuwenhoek

Answer: d

7. All the following statements are true regarding the cell theory except

- a. all living things or organisms are made of cells
- b. all cells arise spontaneously
- c. cells are the basic structural and functional unit of life
- d. all cells arise from preexisting cells

Answer: b

8. Plasma membrane is made up of

- (a) A protein, a lipid and a cellulose layer
- (b) Bimolecular lipid layer surrounded by protein layers
- (c) A protein layer between two lipid layers
- (d) A lipid layer between two protein layers

Answer: b

9. What limits animal cells from outside?

- (a) Cell wall              (b) Basement membrane
- (c) Shell membrane      (d) Plasma membrane

Answer: d

10. Cell membrane consists of:

- (a) Protein double layer      (b) Phospholipid proteins
- (c) Phosphoproteins          (d) Glycoproteins

Answer: b

11. Which of the following theories explain that plasma membrane is selectively permeable:

- (a) Unit membrane theory      (b) Cascade theory
- © Sandwich theory              (d) Fluid Mosaic theory

Answer: d

12. The hydrophobic ends of phospholipid molecules are:

- (a) Polar                          (b) Non-polar
- © Neutral                        (d) Bipolar

Answer: b

13. The membrane protein that extend through both sides of lipid bilayer.

- (a) Acidic protein              (b) Glycoprotein
- © Intrinsic protein            (d) Glycolic acid

Answer: c

14. Plasma membrane is :

- (a) Non-selective barrier      (b) Selective barrier
- © Impermeable                (d) made of cellulose

Answer: b

15. A ribosome consists of:

- (a) Four subunits              (b) Six subunits
- © Two subunits                (d) Three subunits

Answer: c

16. Which of the following statements is true regarding the "law of segregation"?

- a) Law of segregation is the law of purity of genes
- b) Alleles separate from each other during gametogenesis
- c) Segregation of factors is due to the segregation of chromosomes during meiosis
- d) All of the above

Answer: d

17. Ribosomes are composed of:

- (a) rRNA and proteins
- (b) rRNA and lipids
- © rRNA and carbohydrates
- (d) Proteins and lipids

Answer: a

18. Ribosome helps in:

- (a) Lipogenesis
- (b) Cellular digestion
- © Protein synthesis
- (d) Photosynthesis

Answer: c

19. Which organelle is called the “powerhouse of the cell”?

- a. Nucleus
- b. Endoplasmic reticulum
- c. Mitochondria
- d. Golgi apparatus

Answer: c

20. Synapsis occurs during:

- (a) Leptotene
- (b) Zygotene
- © Pachytene
- (d) Diplotene

Answer: b

21. In an animal cell, which among the following organelles has its own DNA?

- a. Chloroplast
- b. Chromoplast
- c. Leucoplast
- d. Mitochondria

Answer: d

22. Cristae in mitochondria serves as sites for

- (a) oxidation reduction reaction
- (b) protein synthesis
- (c) macromolecules breakdown
- (d) flavoproteins are phosphorylated

Answer: a

23. The longest stage in the cell cycle is

- a) Interphase
- b) Anaphase
- c) Metaphase
- d) None of the above

Answer: a

24. Which of the following is also known as restriction point?

- (a) G1 checkpoint
- (b) G2 checkpoint
- (c) M checkpoint
- (d) None of these

Answer: a

25. The division of cytoplasm is known as

- (a) Mitosis
- (b) Synapsis
- (c) Cytokinesis
- (d) Karyokinesis

Answer: c

26. Anaphase in second meiotic division is characterized by:

- (a) Separation of non-homologous chromosomes
- (b) Separation of homologous chromosomes
- (c) Separation of chromatids
- (d) All of them

Answer: c

27. In incomplete dominance \_\_\_\_\_

- a) Phenotype of both allele is expressed
- b) Phenotype of only one allele is expressed
- c) Phenotype of neither of the alleles are expressed
- d) Phenotype of both allele is partially expressed

Answer: d

28. When the activity of one gene is suppressed by the activity of a non-allelic gene, it is known as

- a) Pseudo-dominance
- b) Hypostasis
- c) Epistasis
- d) Incomplete dominance

Answer: c

29. Chromatin is composed of

- a) DNA
- b) DNA and proteins
- c) DNA, RNA and proteins
- d) None

Answer: c

30. The point at which polytene chromosomes appear to be attached together is known as

- (a) centriole
- (b) centromere
- (c) chromomere
- (d) chromocentre

Answer: d

31. In which typical stage are Lampbrush chromosomes observed?

- (a) meiotic prophase
- (b) mitotic metaphase
- (c) mitotic prophase
- (d) mitotic anaphase

Answer: a

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