

Class-11th- Test
CELL: THE UNIT OF LIFE
&
CELL CYCLE & CELL DIVISION [MITOSIS]

M.M-35

TIME-1.5 HR

SECTION A
Multiple Choice Questions

[1X 10=10]

1. Non-membranous nucleoplasmic structures in nucleus are the site for active synthesis of

- (a) protein
- (b) mRNA
- (c) rRNA
- (d) tRNA

2. Which of the following statements is not correct?

- (a) The hydrolytic enzymes of lysosomes are active under acidic pH
- (b) Lysosomes are membrane bound structures
- (c) Lysosomes are formed by the process of packaging in the endoplasmic reticulum
- (d) Lysosomes have numerous hydrolytic enzymes

3. Which of the following statements regarding mitochondria is incorrect?

- (a) Enzymes of electron transport are embedded in outer membrane
- (b) Inner membrane is convoluted with infoldings
- (c) Mitochondrial matrix contains single circular DNA molecule and ribosomes
- (d) Outer membrane is permeable to monomers of carbohydrates, fats and proteins

4. Select the mismatch.

- (a) Gas vacuoles — Green bacteria cells
- (b) Large central vacuoles — Animal cells
- (c) Protists — Eukaryotes
- (d) Methanogens — Prokaryotes



5. Which of the following components provides sticky character to the bacterial cell?

- (a) Cell wall
- (b) Nuclear membrane
- (c) Plasma membrane
- (d) Glycocalyx

6. Match the columns and identify the correct option.

Column I Column II

A. Thylakoids 1. Disc-shaped sacs in Golgi apparatus

B. Cristae 2. Condensed structure of DNA

C. Cisternae 3. Flat membranous sacs in stroma

D. Chromatin 4. Infoldings in mitochondria

- (a) A-4, B-3, C-1, D-2
- (b) A-3, B-4, C-1, D-2
- (c) A-3, B-1, C-4, D-2
- (d) A-4, B-2, C-3, D-1

7. A protoplast is a cell

- (a) without plasma membrane
- (b) without nucleus
- (c) undergoing division
- (d) without cell wall

8. During anaphasic movements of chromosomes,

- (a) centromere of chromosomes is directed towards the poles
- (b) centriole is directed towards the equatorial plate
- (c) centrosomes are moved towards the spindle fibres
- (d) centromere of each chromosome does not separate

9. What will be the DNA content and number of chromosomes in a cell after S-phase as compared to the gamete of the same organism?

- (a) Same DNA content, but double chromosome number
- (b) 4 times DNA content, but double chromosome number
- (c) Same DNA content, but half chromosome number
- (d) Half DNA content, but double chromosome number



10. Which of the following statement of cell cycle is associated with equational division?

- (a) Single cell divides into two without intricate processes seen in mitosis or meiosis
- (b) The number of chromosomes in parent and progeny cells is the same
- (c) Division reduces the chromosome number by half, results in production of haploid daughter cells
- (d) Cell division doubles the chromosome number and results in the production of haploid daughter cells

SECTION – B

[2X3= 6]

11. What are the disadvantages of multicellularity ?

12. Distinguish bw Cytokinesis in plants & animals.

13. Define cell cycle. What is the sequence of different phases in cell cycle ?

SECTION-C

[3X 3= 9]

14. Distinguish bw-

- a. Chromatin & Chromosome
- b. Primary cell wall & Secondary cell wall

15. Briefly describe the structure of Chloroplast in relation to functions.

16. Write note about invisible phase of cell cycle & also mention the key events occurring in its sub-phases / stages.

SECTION-D

[5X1= 5]

17. What is mitosis ? Sketch various stages of mitosis in animal cell.

CASE STUDY

[1X5= 5]

18. The prokaryotic cells are represented by bacteria, blue-green algae, mycoplasma and PPLO (Pleuro Pneumonia like Organisms). They are generally smaller and multiply more rapidly than the eukaryotic cells. They may vary greatly in shape and size. The four basic shapes of bacteria are bacillus (rod like), coccus (spherical), vibrio (comma shaped) and spirillum (spiral).



The organisation of the prokaryotic cell is fundamentally similar even though prokaryotes exhibit a wide variety of shapes and functions. All prokaryotes have a cell wall surrounding the cell membrane except in mycoplasma. The fluid matrix filling the cell is the cytoplasm. There is no well-defined nucleus. The genetic material is basically naked, not enveloped by a nuclear membrane. In addition to the genomic DNA (the single chromosome/circular DNA), many bacteria have small circular DNA outside the genomic DNA. These smaller DNA are called plasmids. The plasmid DNA confers certain unique phenotypic characters to such bacteria. One such character is resistance to antibiotics. Nuclear membrane is found in eukaryotes. No organelles, like the ones in eukaryotes, are found in prokaryotic cells except for ribosomes. Prokaryotes have something unique in the form of inclusions. A specialised differentiated form of cell membrane called mesosome is the characteristic of prokaryotes. They are essentially infoldings of cell membrane.

1.) _____ is the fluid matrix, which fills the prokaryotic cell.

- a.) Cell sap
- b.) Cytoplasm
- c.) Water
- d.) Both a & b

2.) Identify incorrect statement

Statement 1 – In prokaryotic cell nucleus is absent.

Statement 2 – In prokaryotic cells genetic material appears naked.

Statement 3 – In prokaryotic cells genetic material not enveloped by a nuclear membrane.

Statement 4 – prokaryotic cells do not have a cell wall.

- a.) Only 1
- b.) Only 4
- c.) Both 2 & 3
- d.) All of the above



- 3.) Define mesosome.
- 4.) Give the any two characteristic of prokaryotic cells.
- 5.) Enlist the shapes of bacteria are generally occurs.

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