



11. At which cell cycle checkpoint, cell cycle is halted if cell's DNA is damaged:
- G<sub>1</sub> - S
  - S - G<sub>2</sub>
  - G<sub>2</sub> - M
  - G<sub>0</sub> - G<sub>1</sub>
12. The common pathway of entry into the endoplasmic reticulum (ER) of secretory, lysosomal and plasma membrane proteins is best explained by which of the following?
- Binding of their mRNAs to a special class of ribosome attached to the ER
  - Addition of a common sorting signal to each type of protein after completion of synthesis
  - Addition of oligosaccharides to all three types of proteins
  - Presence of a signal sequence that targets each type of protein to the ER during synthesis
13. Name the largest family of cell surface receptor.
- GPCR
  - Ion-Channel receptor
  - Enzyme-linked receptor
  - Nuclear receptor
14. Which type of movement occurs when Na/K pump is used?
- Na ions moves out of the cell and K<sup>+</sup> move in
  - Both Na and K<sup>+</sup> ions move inside the cell
  - Both Na and K<sup>+</sup> move out of the cell
  - K<sup>+</sup> ion moves out of cell and Na ion move in
15. Which among is following is a nuclear protein found in Nuclear pore complex?
- Nuclear lamina
  - Nuclear importin
  - Nucleoporins
  - Karyherins
16. Which of the following is energy independent?
- Active transport
  - Primary active transport
  - Secondary active transport
  - Passive transport
17. p53 protein is associated with all the following, except:
- Tumor suppression
  - Programmed cell death
  - Apoptosis
  - Post-transcription modifications
18. Ribosomes are made up of:
- RNA s and DNAs
  - RNAs and glycolipds
  - RNAs and protein
  - RNAs and lipid
19. The proteins encoded by cell cycle that are static and are required throughout the cell cycle in equal proportion are:
- S Cyclin
  - G<sub>1</sub>/S Cyclin
  - M Cyclin
  - G<sub>1</sub> Cyclin
20. Cell adhesion to the extracellular matrix fibronectin involves active site:
- Leucine, isoleucine, arginine
  - Valine, isoleucine, arginine
  - Arginine, lysine, glutamic acid
  - Arginine, glycine, aspartic acid

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**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

[ Answer question no.1 & any four (4) from the rest ]

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| 1. Illustrate the function of mitochondria, golgi and ribosome of fungal cell with appropriate diagram.  | 10      |
| 2. a) Explain the contributions of cyclin proteins in cell cycle.<br>b) Elaborate the mechanism of transport across the plasma membrane.   | 6+4=10  |
| 3. a) Explain the significance of phase I in cell cycle.<br>b) What are the regulatory checkpoints of cell cycle?  | 3+7=10  |
| 4. a) Where does ATP synthesis takes place and how?<br>b) What do you mean by endosymbiotic theory?  | 7+3=10  |
| 5. a) Explain how tumour suppressor gene prevents the growth of cancer cell.<br>b) Explain the important feature of cancer causing genes.  | 6+4=10  |
| 6. a) How mitochondria is associated with ATP synthesis. Explain with suitable diagram.<br>b) Which cellular organelles are associated with controlling the cell? Justify your answer. | 6+4=10  |
| 7. a) What are the major difference between microtubules, microfilaments and intermediate filaments?<br>b) Discuss the significance of molecular motor in muscle contraction.          | 6+4=10  |
| 8. a) Explain the function of lysosome and peroxisome.<br>b) Explain briefly Sodium Glucose transport system.  | 4+6 =10 |

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