**SET A**

# B. PHARM.
## EIGHTH SEMESTER
## CELL & MOLECULAR BIOLOGY
## BP808ET

[USE OMR SHEET FOR OBJECTIVE PART]

**Duration : 3 hrs.** **Full Marks : 75**

## [ PART-A: Objective ]

**Time : 30 min.** **Marks : 20**

***Choose the correct answer from the following:*** ***1×20=20***

1. Prokaryotic cells are characterized by
   a. Distinct nuclear membrane
   b. Distinct chromosomes
   c. Absence of chromatin materials
   d. Absence of nuclear membrane
2. Crossing over takes place in which phase
   a. Leptotene
   b. Zygotene
   c. Pachytene
   d. Diplotene
3. In RNA replication, synthesis of new chain occurs from-
   a. 5′-3′
   b. 3′-5′
   c. Both directions
   d. From between
4. mRNA is a polymer of
   a. Deoxyribonucleic acid
   b. Ribonucleic acid
   c. Ribonucleoside
   d. Deoxyribonucleoside
5. In ribosome the P site acts as
   a. Acceptor site
   b. Donor site
   c. Exit site
   d. Storage site
6. The fluid mosaic mode of cell membrane is
   a. Two phospholipid layers
   b. Two amino acid layers
   c. Two protein layers
   d. None of the above
7. The outermost layer of prokaryotic cells-
   a. Cell wall
   b. Cell membrane
   c. Capsule
   d. None
8. Operon control is a method of gene regulation in-
   a. Both Eukaryotes and Prokaryotes
   b. Eukaryotes only
   c. Prokaryotes only
   d. Plants
9. Tertiary structure is maintained by
   a. Peptide bond
   b. Hydrogen bond
   c. Disulphide bond
   d. All of the above

10. Phenotypic ratio of Mendel's monohybrid cross in $F_2$ generation
    a. 1:1 b. 2:1
    c. 3:1 d. None
11. Most common secondary structure of protein is
    a. α-helix b. β-pleated sheet
    c. β-pleated sheet parallel d. β-pleated sheet non-parallel
12. Who is called as the father of Genetics-
    a. Charles Darwin b. Gregor Mendel
    c. Friedrich Meischer d. Lamark
13. Which of the following is not a factor responsible for denaturation of proteins
    a. pH change b. Organic solvents
    c. Heat d. Charge
14. The process of exchanging segments of homologous chromosomes is called
    a. Integration b. Crossing over
    c. Recombination d. Mutation
15. Which of the following is longest phase of cell cycle-
    a. M phase b. Interphase
    c. G phase d. None
16. Synthesis of DNA occurs in
    a. G1 phase b. G2 phase
    c. S phase d. $G_o$ phase
17. Which of the following is not a surface receptors
    a. Ion channel receptors b. G-protein Coupled receptor
    c. Enzyme-linked receptors d. Nuclear receptors
18. How many types of cell signalling are there
    a. 1 b. 2
    c. 3 d. 4
19. G- protein coupled receptor contains _____ transmembrane proteins-
    a. 2 b. 5
    c. 7 d. 9
20. The non-dividing initial phase of cell cycle is called
    a. Interphase b. Prophase
    c. $G_o$ phase d. $G_1$ phase

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## PART-B :Descriptive

**Time : 2 hrs. 30 min.** **Marks : 35**

*[ Answer any seven (7) questions ]*

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|---|---|---|
| 1. | Why is the cell considered as unit of life? Explain the cell theory. | 2+3=5 |
| 2. | What is mitosis? Explain each phase in detail. | 1+4=5 |
| 3. | What are the functions of DNA? | 5 |
| 4. | Explain in detail the structure of tRNA. | 5 |
| 5. | What is denaturation of proteins? | 5 |
| 6. | State the physical and chemical properties of Proteins. | 5 |
| 7. | What do you mean by regulation of protein synthesis by lac operon? | 5 |
| 8. | What are the cellular checkpoints? Write down their significance. | 5 |
| 9. | What are the methods of gene transfer? | 5 |

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## PART-C: Long type questions

*[ Answer any two (2) questions ]*

1. Define the process of meiosis in detail with suitable diagram. **10**

2. What are receptors? Write in detail about different types of receptors. **2+8=10**

3. Define genetics? Explain Mendel's monohybrid experiment on pea plants. **3+7=10**

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