

2016

**BIOTECHNOLOGY**

[ **Honours** ]

**PAPER – I**

*Full Marks : 90*

*Time : 4 hours*

*The figures in the right hand margin indicate marks  
Candidates are required to give their answers in their  
own words as far as practicable*

*Illustrate the answers wherever necessary*

[ **NEW SYLLABUS** ]

**GROUP – A**

*(Biochemistry)*

**Answer any two questions from the following :**

15×2

1. (a) State the role of estrogen during pregnancy. 5

- (b) What are isozyme how does it differ from abzymes ? 2 + 3
- (c) State the differences between oxidative phosphorylation and photosynthetic phosphorylation. 5
2. (a) Derive Michelis Menten equation and why it is important. 7+1
- (b) What are the functions of TSH ? 3
- (c) Differentiate between B and Z DNA. 4
3. (a) Why membrane lipids of ten shows fluidity ? What are the properties of enzymes ? 2+3
- (b) State the role or significance of Ramchandran plot. 3
- (c) What are the steps of TCA cycle ? Describe. 7
4. (a) What is co-enzymes ? Give examples. 2 + 1
- (b) Briefly mention the function of Lysosome. 4
- (c) Schematically represent lipid classification. 5

- (d) State the difference between diabetes mellitus and diabetes insipidus. 3

GROUP – B

( Cell Biology )

Answer any five questions from the following : 8 x 5

5. Describe the structure of Golgi Bodies. Mention its function. 5 + 3
6. Highlight the functional difference of actin and myosin. State the role of tubulin. 6 + 2
7. Briefly explain Fluid Mosaic model. What are RTKs? 5 + 3
8. State the differences between voltage gated channel and ion channels. Add a note on pinocytosis. 4 + 4
9. With a labelled diagram highlight different phases of cell cycle. 8

10. Explain the difference between apoptosis and necrosis. Draw a diagram to depict the structure of ER. 6+2
11. Briefly describe the structure of GPCR and draw a labelled diagram. 6+2
12. State the role of cyclin and CDK in regulation of cell cycle. 8

GROUP – C

( *Molecular Biology* )

Answer any five questions from the following :

13. Draw a labelled diagram of tRNA. 4×5  
4
14. Briefly describe the structure and function of Tryptophan operon. 4
15. Write the structure of Ori C. 4
16. Briefly describe how such a long DNA so nicely fits in the small nucleus. 4
17. What are post transcriptional modification ? 4

- 18. Write a short account on termination of replication process.** 4
- 19. Describe the structure of telomere and state the role of telomerase.** 4
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