

OLD

2015

Part-I 3-Tier

BIOTECHNOLOGY

PAPER—II

(Honours)

Full Marks : 90

Time : 4 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer all questions.

Group—A

Answer any *two* questions from the following. 2×15

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| 1. (a) Describe the process of transamination. | 6 |
| (b) Discuss the importance of phospholipids. | 5 |
| (c) What is glycoprotein ? | 4 |

(Turn Over)

2. (a) What is redox couple? 3
- (b) Describe the mechanism of electron transport through electron transport chain. 8
- (c) What is buffer? State its importance. 4
3. (a) Define bacterial culture medium. 3
- (b) Describe the factors affecting bacterial growth. 8
- (c) State the action of chemical agents for microbial control. 4
4. What are the complement factors? Describe the mechanism of activation and functions of complement system. 3+8+4

Group—B

Answer any *five* questions from the following. 5×8

5. Describe the steps of β -oxidation of palmitic acid and mention its energetics. 8
6. (a) What is glycosidic bond? 2
- (b) Why does lactose respond to Benedict's test but sucrose does not? 3
- (c) State the properties of aminoacids. 3

7. (a) Describe the Kinetic pattern of single substrate enzymatic reaction. 5
 (b) State the importance of K_m & K_{cat} . 3
8. Describe the structure of bacterial cell wall. 8
9. (a) Describe the role of Pyruvate dehydrogenase in citric acid cycle. 4
 (b) Mention the role of phosphofuctokinase in glycolytic pathway. 4
10. What is MHC complex? Mention their role in immunity. 3+5
11. Describe the molecular structure of Ig. 8
12. Describe the principle, types and applications of ELISA. 4+2+2

Group—C

Answer any *five* questions from the following. 4×5

13. Classify the enzymes with example. 4
14. Why anaerobic pathway of metabolism is taken up by some bacteria? 4

15. State the importance of algae and fungi. 4
16. Describe the role of cytokine in immunity. 4
17. Write a note on mitogen. 4
18. Gluconeogenesis is not the exact reverse of glycolysis —
justify the statement. 4
19. Describe the different forms of RNA. 4
20. State the functions of lipoproteins. 4
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