

2015

M.Sc.

2nd Semester Examination

BIOTECHNOLOGY

PAPER—BIT-201

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Group — A

Answer any *five* questions from the following : 2×5

1. (a) Differentiate between substrate level phosphorylation and oxidative phosphorylation.
- (b) Name different types of ATP-ases with example.

(Turn Over)

- (c) State the role of isomerase in the oxidation of unsaturated fatty acids.
- (d) What is TPP? Mention its function.
- (e) What is one-carbon metabolism?
- (f) Why human cannot synthesize ascorbic acid?
- (g) What is melanin and its role in body color?
- (h) Mention the steps of glycolysis which require ATP.

Group — B

Answer any *two* questions from the following : 5×2

2. Schematically, write down the steps metabolism of Phenylalanine to dopamine. (*mention the enzymes, coenzymes and cofactor as applicable*) 2+3
3. Briefly state the function of Phosphoglucomutase in glycogenolysis. What is ketogenesis? 3+2
4. Explain why ketone bodies are overproduced in Diabetes mellitus and during starvation. 5

5. "All mitochondrial proteins are not synthesized by mitochondrial genes" — explain. 5

Group — C

Answer any *two* questions from the following : 10×2

6. "Retinoic acid can also act as a morphogen" — Justify. 5+4+1

7. (a) What are the components of ETC ?

(b) Write short notes on Q cycle.

(c) How many ATP are produced from one molecule glucose and one mole of palmitic acid metabolism ?

2+5+3

8. (a) How does Fructose 2,6-bisphosphate control carbohydrate metabolism in the liver ?

(b) Describe the chemical nature of Insulin and explain its role on lipid metabolism.

(c) Describe the role of NAD^+ and FAD in TCA-cycle.

4+4+2

9. (a) Write the difference between gout and pseudogout.
- (b) Name some dietary food stuffs which are rich in purine content ?
- (c) What is Lesch-nyhan syndrome ?
- (d) How would you control uric acid level in blood ?
- (e) Name two anticancer drug and how they act.

2+2+2+2+2
