

NTK/KW/15 – 7896

**Fourth Semester B. Tech. (Biotechnology)
(C.B.S.) Examination**

BIOCHEMISTRY METABOLISM

BT. BIT. 401T

Time : Three Hours]

[Max. Marks : 80

- N. B. : (1) All questions carry equal marks.
(2) Answer any **Five** questions.
(3) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) Discuss the role of different hormones in regulation of glycogen synthesis and glycogen degradation. 10
(b) Describe the bypass reactions of gluconeogenesis. 6
2. (a) Explain fatty acyl synthatase complex and its role in fatty acid synthesis. How does the chain elongation of fatty acid takes place ? 8
(b) Describe the synthesis of phospholipids. 8
3. (a) Discuss the de novo synthesis of purine nucleotides. How are AMP and GMPs formed from IMP ? 10
(b) Explain transamination reactions. Stating the role of SGOT and SGPT in clinical diagnosis. 6
4. (a) Describe C₃ pathway for CO₂ fixation. 12

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Contd.

- (b) Write the difference between cyclic and non-cyclic photophosphorylation. 4
5. (a) Describe the Entner-Duodroff pathway in *Pseudomonas* spp. 8
 (b) Explain mechanism of detoxification in liver. 8
6. (a) Explain the following terms :—
 (i) Activation energy.
 (ii) Enthalpy
 (iii) Entropy
 (iv) Monooxygenase system. 12
 (b) Explain the term redox potential. Give an account of enzymes involved in biological oxidation. 4
7. Answer Any **Two** :—
 (a) HMP shunt pathway.
 (b) Pyrimidine degradation.
 (c) Oxidative phosphorylation. 16
8. Write note on :—
 (a) Anaplerotic reactions of TCA cycle.
 (b) Ketoacidosis
 (c) Disorders of tyrosine metabolism.
 (d) High energy phosphate compounds. 16