

[Time: 2½ Hours]

[Marks:60]

Please check whether you have got the right question paper.

- N.B:**
1. All questions are **compulsory**.
 2. Draw **neat** and **labelled** diagram wherever **necessary**.
 3. Figures to the **right** indicate **full marks**.

- Q.1 Explain details of covalent modifications by enzymes by – 12
 a) Dithiol – disulphide interconversions
 b) Phosphorylation and dephosphorylation.
- OR
- Q.1 With reference to fire metabolic control, explain:- 12
 a) Variation in pH
 b) Variation in substrate concentration.
- Q.2 Give details of biosynthesis of tannins and coumarins. 12
- OR
- Q.2 Explain in detail the biosynthesis of flavonoids. Comment on the role of flavonoids as secondary metabolite. 12
- Q.3 Give outline of glycolysis and comment on its regulation. 12
- OR
- Q.3 Explain the reaction leading to breakdown of starch. 12
- Q.4 What are the breakdown products of protein that enter the TCA cycle? Add a note on regulation of TCA cycle. 12
- OR
- Q.4 With reference to mitochondrial metabolism, explain:- 12
 a) Catabolic role of TCA cycle
 b) Anapleurotic CO₂ fixation.
- Q.5 Write short notes on **any three** of the following:- 12
 a) Role of ATP in biochemical regulation
 b) Biosynthesis of phenylpropanoids.
 c) Role of Phenols
 d) Regulation of gluconeogenesis.
 e) Oxidation / reduction of amino acids during TCA cycle.
 f) Role of calmodulins in biochemical regulation.