Q.P. Code : 28449

[Time: $2\frac{1}{2}$ Hours] **[Marks: 60]**

Please check whether you have got the right question paper.

N.B:
1. Answer **all five** questions.
2. All questions carry **equal** marks.
3. Draw neat and labelled diagrams where necessary.

Q.1 Describe the following pathways
a) Gamma aminobutyrate shunt pathways. **06**
b) Pentose phosphate pathway. **06**

OR

Q.1 Describe the Gluconeogenesis pathway and its significance in the glucose metabolism **12**

Q.2 Explain
a) Formation of ketone bodies. **06**
b) Biosynthesis of bile acids. **06**

OR

Q.2 Discuss the oxidation of odd numbered fatty acids and fate of propionate. **12**

Q.3 Discuss
a) Oxidative & non-oxidative deamination of amino acids. **06**
b) Conversion of amino acids to specialized products. **06**

OR

Q.3 Discuss inborn errors of protein metabolism with four suitable examples. **12**

Q.4 Briefly discuss:
a) Plant metabolic engineering. **06**
b) Working principles of System Biology. **06**

OR

Q.4 Describe
a) Scope and future of metabolic engineering. **06**
b) System Biology platforms. **06**

Q.5 Write short notes on **any three**: **12**
a) Anaplerotic reactions.
b) Redox potentials.
c) Role of carnitine in fatty acid metabolism.
d) Acetyl CoA carboxylase.
e) Ammonia excretion.
f) NGS Technology.
