

**BIOCHEMISTRY**

PAPER – II

Time : 3 hours  
Max. Marks : 100

BIO/D/17/03/II

**Important instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

1. Significance of HMP shunt pathway. Add a note on G6PD deficiency. 7+3
2. a) Oxidative phosphorylation 6+4  
b) Substrate level phosphorylation
3. Peptide hormones regulating food intake. 10
4. Chronic complications of diabetes mellitus. Add a note on Polyol pathway. 6+4
5. Reactive oxygen species and their scavengers. 6+4
6. Protein energy malnutrition, types, clinical and biochemical features 10
7. a) Glycemic index 5+5  
b) Dietary fibre
8. a) Role of selenium as antioxidant 5+5  
b) Iron toxicity
9. a) Nitric oxide: synthesis and its functions. 5+5  
b) Serotonin: synthesis and its role in body.
10. a) Methyl trap hypothesis 5+5  
b) Biologically 'active' forms of B<sub>12</sub>