



NE-02010310

Seat No. _____

M. Pharm (CBCS) (Sem. I) Examination

January – 2017

Advanced Biochemistry, Bioprocessing & Immunotechnology

Time : 3 Hours]

[Total Marks : 80

- Instructions :**
- (1) Answer and tie up both the sections separately.
 - (2) Figure to the right indicate marks.
 - (3) Answer the three (3) questions from each section.
 - (4) Question one (1) and question five (5) are compulsory.
 - (5) Draw neat and clean diagrams as required.

SECTION - I

- 1** Write a note on following : (any seven) **7×2=14**
- (a) Oxidation of fatty acid
 - (b) Fatty liver
 - (c) Redox potential
 - (d) Aeration and Agitation
 - (e) What do you mean by metabolism ?
 - (f) Cytokines
 - (g) Conventional vaccines
 - (h) Memory cells
 - (i) Antigen and Antibody
 - (j) Solvent extraction.
- 2** Answer the following questions :
- (a) Write a detailed note on carbohydrate metabolism. What are the 7 diseases related to carbohydrate metabolism ?
 - (b) Write a detailed note on control of lipid metabolism. **6**

- 3 Answer the following questions :
- (a) Describe ATP production and its biological significance in detail. 7
 - (b) What do you mean by enzymes ? Discuss various sources of enzymes along with their importance. 6

- 4 Answer the following questions :
- (a) Write a note on kinetics of immobilized enzymes. 7
 - (b) Write a detailed note on classification of enzymes and its general properties. 6

SECTION - II

- 5 Answer any two out of three : 7×2=14
- (a) DNA vaccine
 - (b) Downstream processing
 - (c) Immuno diagnostics

- 6 Answer the following questions :
- (a) What are the techniques used for scale up of fermentation processes ? Describe in detail. 7
 - (b) Describe in detail about production of antibiotics by fermentation. 6

- 7 Answer the following questions :
- (a) Write a detailed note on Major Histocompatibility Complex. 7
 - (b) Give difference between Innate and Adaptive immunity with diagram. 6

- 8 Answer the following questions :
- (a) What do you understand by autoimmune disease ? Explain with examples. 7
 - (b) Give general description of basic fermenter design with diagram. 6