

**S.Y.B.PHARM. SEMESTER-IV (2011 COURSE) : WINTER -
2017**

SUBJECT: PHARMACEUTICAL MICROBIOLOGY (Including Immunology) – II

Day : **Saturday**
Date : **18/11/2017**

Time : **02.00 PM TO 05.00 PM**
Max. Marks : 80

W-2017-3828

N.B.:

- 1) **Q.No.1 and Q.No.5 are COMPULSORY.** Out of the remaining questions attempt **ANY TWO** questions from each section.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** Answer **ANY FIVE** of the following: **[10]**
- a) How to assess microbial spoilage in pharmaceuticals?
 - b) What are the microbial limits for starch and lactose?
 - c) Enlist properties of Probiotics.
 - d) Give significance of Microbial Assays.
 - e) Draw a neat labeled diagram of Column Fermenter.
 - f) How inoculum is developed?
- Q.2** a) Discuss sources and types of microbial contamination. **[08]**
b) Define MIC. How it is determined? **[07]**
- Q.3** a) What is fermentation? Give exhaustive account on 'Fermentation Media'. **[08]**
b) Explain techniques to improve microbial strains. **[07]**
- Q.4** Write short notes on **ANY THREE** of the following: **[15]**
- a) Significance of Probiotics
 - b) Microbial Assay of Vitamins
 - c) Challenge Test
 - d) Downstream Processing

SECTION – II

- Q.5** Answer **ANY FIVE** of the following: **[10]**
- a) Classify Hypersensitivity.
 - b) Write advantages of Agglutination reactions.
 - c) Compare between Cell and Humoral mediated immunity.
 - d) How vaccines are stored?
 - e) Give significance of Monoclonal Antibodies.
 - f) What is a Triple Vaccine?
- Q.6** a) Classify and discuss Immunoglobulins in detail. **[08]**
b) What is Delayed Hypersensitivity? Discuss in detail. **[07]**
- Q.7** a) How bacterial vaccines are prepared? **[08]**
b) Write characteristics of Antigen – Antibody Reactions. **[07]**
- Q.8** Write short notes on **ANY THREE** of the following: **[15]**
- a) Hybridoma Technology
 - b) Phagocytosis
 - c) ELISA
 - d) Standardization of Vaccines

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