

SUBJECT: PHARMACEUTICAL MICROBIOLOGY – II

Day: Thursday
Date: 15/11/2018

W-2018-4080

Time: 02.00 PM TO 05.00 PM
Max. Marks: 60

N.B:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of remaining attempt **ANY TWO** questions from Section – I and Section – II.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.
- 4) Draw neat and labeled diagrams **WHEREVER** necessary.

SECTION – I

- Q.1** Answer **ANY FIVE** of the following (10)
- a) Define and explain secondary metabolites with examples.
 - b) Give difference between microbial assays of antibiotics and vitamins.
 - c) State the methods used for biological waste treatment.
 - d) Write microbial limits for starch and water.
 - e) Which factors cause microbial spoilage?
 - f) Which test microorganisms are used for microbial assays of vitamin B₁₂ and Streptomycin?
- Q.2** a) How to assess microbial contamination in non sterile pharmaceutical product? (06)
b) Discuss techniques used to improve microbial strains during Upstream processing. (04)
- Q.3** a) Explain the significance, principle and methods for microbial assay of antibiotics. (06)
b) How to determine MIC? (04)
- Q.4** Write short notes on **ANY TWO** of the following. (10)
- a) Fermentation Media
 - b) Bubble Column Fermenter
 - c) Challenge Test

SECTION – II

- Q.5** Answer **ANY FIVE** of the following (10)
- a) Classify Biological hazards.
 - b) What are Synbiotics?
 - c) What are toxoids?
 - d) Why active immunization is not useful in immune deficient person?
 - e) Classify Antigen – Antibody reactions.
 - f) What are interferons?
- Q.6** a) Draw and discuss the structure of Antibody. Highlight its significance. (06)
b) What is Hybridoma technology? (04)
- Q.7** a) Explain various Hypersensitivity reactions in details. (06)
b) Describe ELISA test with its significance. (04)
- Q.8** Write short notes on **ANY TWO** of the following. (10)
- a) Triple Vaccine
 - b) Significance of probiotics and prebiotics.
 - c) Biosafety – Containment of biohazards.