

**M. Sc. (Medical Biotechnology) Sem-III (Choice Based Credit System)**

**: WINTER - 2018**

**SUBJECT : VACCINES, ANTIBIOTICS AND THERAPEUTICS**

Day : Saturday  
Date : 27/10/2018

**W-2018-1300**

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

**N. B. :**

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.**
- 2) Attempt **ANY TWO** questions from the remaining questions of each Section – I and Section – II.
- 3) Answers to both the sections should be written in the **SEPARATE** answer books.
- 4) Draw neat and labeled diagram **WHEREVER** necessary.

**SECTION – I**

- Q. 1** A) Explain in brief: (04)
- |                      |                        |
|----------------------|------------------------|
| i) Therapeutic index | iii) LD <sub>50</sub>  |
| ii) MIC              | iv) Selective toxicity |
- B) Define the term “Vaccine”. Enlist different types of vaccines with suitable examples. Add a note on “in – process control of traditional viral vaccines”. (06)
- Q. 2** Explain in detail: (10)
- a) Mechanism of action of antibiotics acting on:
- |                        |                       |
|------------------------|-----------------------|
| i) Cell wall synthesis | ii) Protein synthesis |
|------------------------|-----------------------|
- b) Mechanism of action of antifungal drugs with suitable examples.
- Q. 3** Elaborate the following: (ANY TWO) (10)
- a) Multiple Drug Resistance (MDR) in bacteria.
- b) Production and recovery of streptomycin.
- c) Cloning of antibiotic biosynthesis genes by complementation.
- Q. 4** Explain in brief: (10)
- a) Vaccines for HIV
- b) Edible vaccines
- c) Improving antibiotic production
- d) Recovery of penicillin

**SECTION - II**

- Q. 5** Explain in detail: (10)
- a) Advantages and limitations of *E. coli* in production of recombinant therapeutic proteins.
- b) Sterility testing of pharmaceutical products.
- Q. 6** Explain the following in brief: (10)
- |                          |                    |
|--------------------------|--------------------|
| i) Interferons           | iii) Streptokinase |
| ii) Human growth hormone | iv) Asparaginase   |
- Q. 7** Explain in detail (ANY TWO): (10)
- a) Production of phytochemicals.
- b) GMP and GLP in pharmaceutical industry.
- c) Haematopoietic growth factors.
- Q. 8** Write short notes: (10)
- a) Pyrogens and their physiological effects
- b) Protein based contaminants in pharmaceutical products
- c) Advances in monoclonal antibody technique
- d) Recombinant factor VIII

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