

**M. SC. (MEDICAL BIOTECHNOLOGY) SEM-III (CHOICE  
BASED CREDIT SYSTEM) : SUMMER - 2018  
SUBJECT : VACCINES, ANTIBIOTICS & THERAPEUTICS**

Day : **Wednesday**  
Date : **04/04/2018**

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

**S-2018-1171**

**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) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.

**SECTION – I**

- Q.1** Explain in detail: **[10]**
- a) What are aminoglycoside antibiotics? Explain their mechanism of action on protein synthesis with suitable examples.
  - b) Manufacturing procedure and in-process control of traditional bacterial vaccines.
- Q.2** Elaborate: **[10]**
- a) Cloning of antibiotic biosynthesis genes by complementation.
  - b) Toxoids.
  - c) Vector vaccines.
  - d) Antifungal drugs.
- Q.3** a) Explain in detail different mechanisms of multiple drug resistance in bacteria with suitable examples. **[05]**
- b) Production of  $\beta$ -lactam antibiotic. **[05]**
- Q.4** Write short notes on the following: **[10]**
- |                                 |                    |
|---------------------------------|--------------------|
| a) MIC                          | c) Edible vaccines |
| b) Recombinant peptide vaccines | d) DNA vaccines    |

**SECTION – II**

- Q.5** Explain in detail: **[10]**
- a) Production of recombinant proteins using i) *E.coli* ii) Yeast and fungi.
  - b) Immunological approaches to detect contaminants in pharmaceutical products.
- Q.6** Write short notes on the following: **[10]**
- |                  |                         |
|------------------|-------------------------|
| a) Interferons   | c) Human Growth Hormone |
| b) Streptokinase | d) Sources of pyrogens  |
- Q.7** Explain in detail: **[10]**
- a) Different methods of sterility testing of pharmaceutical products.
  - b) Haematopoietic growth factors.
- Q.8** Elaborate: **[10]**
- a) GMP and GLP in pharmaceutical industry.
  - b) Production of phytochemicals.

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