

**M. Sc. (Medical Biotechnology) Sem-III (Choice Based Credit System)**  
**: SUMMER - 2019**

**SUBJECT : VACCINES, ANTIBIOTICS & THERAPEUTICS**

Day : Wednesday  
Date : 10/04/2019

**S-2019-1509**

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 questions attempt **ANY TWO** questions from each section.
- 2) Answers to both the sections should be written in **SAME** answer books.
- 3) Figures to the right indicate **FULL** marks.

**SECTION – I**

- Q.1** Answer **ANY FOUR** of the following: [10]
- a) Antimicrobial agents are classified in different ways. Enlist them with suitable examples.
  - b) Define : i) Therapeutic index      ii) MIC.
  - c) Enlist different types of vaccines with suitable examples.
  - d) Explain the importance of vaccinia virus in vector vaccines.
  - e) Explain in brief manufacturing procedure of traditional bacterial vaccines.
- Q.2** Briefly explain mechanism of action of chemotherapeutic agents acting on the following: [10]
- a) Cell wall synthesis.
  - b) Cell membrane synthesis.
  - c) Protein synthesis.
  - d) Nucleic acid synthesis.
- Q.3** Explain in detail with suitable examples **ANY TWO** of the following: [10]
- a) Recombinant polypeptide vaccines.
  - b) MDR in bacteria.
  - c) DNA vaccines.
- Q.4** Write short notes on **ANY FOUR** of the following: [10]
- a) Antiviral drugs
  - b) Improving antibiotic production
  - c) Toxoids and sera
  - d) Edible vaccines
  - e) Vaccines for cancer

**SECTION – II**

- Q.5** Elaborate on **ANY TWO** of the following: [10]
- a) *E.coli* as a source of recombinant therapeutic proteins.
  - b) Sources of pyrogen contaminants in pharmaceutical products and their detection methods.
  - c) Recombinant interferons and interleukins.
- Q.6** Explain in brief: [10]
- a) Applications of phytochemicals.
  - b) Chemically linked monoclonal antibodies.
  - c) Sterility testing.
  - d) Human growth hormone.
- Q.7** Elaborate on **ANY TWO** of the following: [10]
- a) Yeast as production system for recombinant therapeutic proteins.
  - b) Asparaginase and DNase.
  - c) GMP in pharmaceutical industry.
- Q.8** Write short notes on **ANY FOUR** of the following: [10]
- a) Transgenic animals
  - b) Haemtopoietic growth factors
  - c) Insulin
  - d) Immunological approaches to detect contaminants in pharmaceutical products
  - e) QC and QA in pharmaceutical industry

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