

**M. SC. (BIOTECHNOLOGY) SEM-IV (2012  
COURSE)(CHOICE BASED CREDIT SYSTEM) : SUMMER -  
2018**

**SUBJECT: SPECIALIZATION: c) PHARMACEUTICAL & MEDICAL  
MICROBIOLOGY**

Day: **Tuesday**  
Date: **10/04/2018**

**S-2018-1092**

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 the remaining 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.
- 4) Draw neat labelled diagrams **WHEREVER** necessary.

**SECTION-I**

- Q.1** Answer any **FIVE** of the following: (05)
- a) Explain in detail pathogenesis, lab diagnosis, treatment and prevention of *C. albicans*. (05)
  - b) What are gain of function mutations and loss of function mutations? Explain with suitable examples. (05)
- Q.2** Write short notes on: (10)
- i) Treatment of tuberculosis
  - ii) Functional cloning
  - iii) R factors and drug resistance
  - iv) Antigenic properties of Salmonella
- Q.3** Explain in detail: (10)
- a) Pathogenesis and epidemiology of *Vibrio cholera*. Add a note on laboratory diagnosis of cholera infection.
  - b) i) Concept of bioassay      ii) MIC      iii) Therapeutic index  
iv) LD<sub>50</sub>      v) Toxic dose
- Q.4** Answer the following:
- a) What are static and cidal drugs? Explain with suitable examples. Add a note on action of chemotherapeutic agents on nucleic acid synthesis. (05)
  - b) Elaborate: causative agent, pathogenesis, laboratory diagnosis, treatment and prevention of malaria. (05)

**SECTION-II**

- Q.5** a) What are pyrogens? Explain in detail different methods of pyrogen testing. (05)  
b) What is the importance of gene therapy? Briefly explain different approaches for gene therapy. (05)
- Q.6** Write short notes: (10)
- i) Peptide vaccines
  - ii) Antisense technology
  - iii) Stem cell therapy
  - iv) Anticoagulants
- Q.7** Elaborate: (10)
- i) GMP and GLP in pharmaceutical industry
  - ii) What are recombinant vaccines? Explain with suitable examples.
- Q.8** Briefly explain the following: (10)
- i) Manufacturing of bacterial vaccines
  - ii) Sterility testing of pharmaceutical products
  - iii) Nutraceuticals
  - iv) Vector vaccines

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