

**BACHELOR OF PHARMACY (B. PHARM.) (CBCS-2019 COURSE)**  
**B. Pharm. Sem-III :SUMMER- 2022**  
**SUBJECT : PHARMACEUTICAL MICROBIOLOGY (THEORY)**

Day : Friday

Date : 15-07-2022

**S-20668-2022**

Time : 02:00 PM-05:00 PM

Max. Marks : 75

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**N.B.**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the **RIGHT** indicate **FULL** marks.
  - 3) Draw neat and labeled diagrams **WHEREVER** necessary.
  - 4) Answer to each section should be written in **SEPARATE** answer books.
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**SECTION -I**

**Q.1** Answer all questions **(20)**

- a) How bacterial cultures are preserved in laboratory conditions?
- b) Why milk is pasteurized?
- c) Write types of cell culture media with examples.
- d) How viruses are different from other microbial species?
- e) Which antibiotics are produced using *Bacillus subtilis* and *Streptomyces venezuelae*?
- f) Explain sterilization kinetics.
- g) Define 'Magnification' and 'Fluorescence'.
- h) Which are the different sources of contamination in an aseptic area?
- i) Give significance of 'embryonated chick eggs' in viral cultivation.
- j) Enlist biological indicators for sterilization.

**Q.2** Attempt **ANY TWO** of the following : **(20)**

- a) How to evaluate disinfectants?
- b) Discuss various methods used to isolate bacteria.
- c) Explain in detail lytic and lysogenic cycles of bacteriophages.

**SECTION -II**

**Q.3** Attempt **ANY SEVEN** of the following : **(35)**

- a) How bacteria reproduce?
- b) Classify disinfectants with their respective mechanism of actions and examples.
- c) If a new antibiotic is discovered from the given soil sample, how will you check its efficacy?
- d) Explain various cell lines with their significance in pharmaceutical research.
- e) How will you detect *Staphylococcus* contamination in non-sterile pharmaceutical products?
- f) How microbial stability of pharmaceutical formulations is tested?
- g) Compare between thermal and non-thermal methods of sterilization.
- h) Write a short note on '*Penicillium notatum*'.
- i) Discuss the microbial limit tests (MLT) and their significance.

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