



**HDU-014-003501**      Seat No. \_\_\_\_\_

**M. Pharm. (Sem. V) (CBCS) Examination**

November / December – 2017

**Pharmaceutical Microbiology - I**

**Faculty Code : 014**

**Subject Code : 003501**

Time : 3 Hours]

[Total Marks : 80

- Instructions :**
- (1) Answer and tie up both the sections separately.
  - (2) Figure to the right indicates marks.
  - (3) Answer any three (03) questions from each section.
  - (4) Question one (1) and questions five (5) are compulsory.
  - (5) Draw neat and clean diagrams as required

**SECTION - I**

- 1** Answer any **seven** questions out of ten; each carry **7x2=14** two marks :
- (1) Draw neat and clean structure of bacteria with labels.
  - (2) Describe the discoveries of Robert Koch.
  - (3) Draw a neat and clean labeled diagram of compound microscope.
  - (4) Describe the principle of gas sterilization.
  - (5) Enlist different source of contamination in aseptic area.
  - (6) Outline the principle of acidfast staining.
  - (7) Enlist different acidic dyes used in staining of microbes.
  - (8) Outline the different components of laminar air flow.
  - (9) Describe importance of spread plate technique.
  - (10) Why microbial assay of vitamins are important?

- 2 Answer the following :
- (a) Write a note on AntonyVan Leeuwenhoek. 7
  - (b) Write a note on scanning electron microscope (SEM). 6
- 3 Answer the following :
- (a) Describe in detail bacterial cell wall, pilli, and flagella. 7
  - (b) Describe in detail phase contrast and fluorescence microscope. 6
- 4 Answer the following :
- (a) Describe in detail growth curve. 7
  - (b) Write a note on physical method of sterilization process. 6

## SECTION - II

- 5 Answer any two (2) questions from the following 2x7=14  
each carry 7 marks :
- (a) Describe in detail microbiological assays of antibiotics.
  - (b) Write a note on sterility testing as per Indian pharmacopoeia.
  - (c) Describe different method of cultivation of microbes.
- 6 Answer the following :
- (a) Describe different methods of evaluation of antibiotics. 7
  - (b) Describe different method of sterility assurance. 6
- 7 Answer the following :
- (a) Write a note on microbial limit test. 7
  - (b) Describe defined and undefined nutrient media used for microbes. 6
- 8 Answer the following :
- (a) Write a note on viruses. 7
  - (b) Describe the role of fungus in pharmaceutical industries. 6