DA-1806
M. Sc. (Microbiology) (Sem. IV) Examination
March / April - 2016
MB-404 : Pharmaceutical Microbiology
(Old Course)

Time : 3 Hours] [Total Marks : 70

Instructions :
(1) Fill up strictly the details of \( \triangleright \) signs on your answer book.
Name of the Examination : M. Sc. (MICROBIOLOGY) (SEM. 4)
Name of the Subject : MB-404 : PHARMACEUTICAL MICROBIOLOGY (OLD)

(2) Figures to the right side indicate full marks of the question.
(3) Draw neat and labelled diagrams whenever necessary.

1 Answer the following : (any two) \( 18 \)
   (a) Explain in detail how enzymatic degradation and production of toxins contribute towards the spoilage of pharmaceutical products.
   (b) Discuss the factors that determine the likelihood of clinical infection by contaminated pharmaceutical product.
   (c) Give a detail account of the sources of microbial contamination in pharmaceutical products.

2 Answer the following : (any two) \( 18 \)
   (a) Explain the importance of GLSP in pharmaceutical industry.
   (b) Discuss the significance of conventional testing methods in monitoring microbiological quality.
   (c) Give a detail account of `Validation and documentation for GMP`.
3. Answer the following: (any two)

(a) How do autoclaving and radiation sterilization contribute to microbial inactivation in pharmaceutical industries.

(b) Discuss the types of steam sterilization cycles in assurance of sterility.

(c) Enlist different antimicrobial preservatives used in pharmaceutical industries, and discuss the properties of any six of them.

4. Write Short notes: (any two)

(a) Microbial standards for pharmaceuticals.

(b) Risk analysis to enhance effectiveness of microbiological auditing.

(c) Regulation of biotechnological products.