Code: BP303T

R19

B.Pharm II Year I Semester (R19) Supplementary Examinations September 2022

PHARMACEUTICAL MICROBIOLOGY

Time: 3 hours Max. Marks: 75

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) What are eukaryotes? Give examples.
(b) What are anaerobic bacteria? Give examples.
(c) Explain acid-fast staining.
(d) Define disinfection and sterilization.
(e) Draw a neat labelled diagram of bacteriophage.
(f) Mention the six phases of viral multiplication.
(g) Define microbiological assay. What is the importance of it?
(h) What is guthrie test?
(i) Explain direct inoculation method for testing the sterility.
(j) Write a note on applications of cell cultures in pharmaceutical industry.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2 (a) Define microscopy. What are the different types of microscopes? Explain in detail about electron microscope.
(b) Explain different staining techniques for identification of bacteria.

3 (a) Classify disinfectants. Explain factors affecting disinfection.
(b) Explain sterility testing of ophthalmic products, as per Indian pharmacopoeia.

4 (a) Explain construction and working of laminar air flow equipment.
(b) Explain the procedure for assessment of microbial contamination and spoilage.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5 Explain different methods of isolating pure cultures.

6 Explain in detail quantitative measurement of bacterial growth.

7 (a) Explain physical methods of sterilization.
(b) Explain chemical methods of sterilization.

8 Write a note on sterilization process by autoclave and hot air oven.

9 Explain properties and mechanism of action of disinfectants.

10 (a) Explain viral replication.
(b) Draw the flow diagram of aseptic area.

11 Write a note on different sources of contamination in aseptic area.

12 Explain standardization of calcium pantothenate.

13 Explain primary, established and transformed cell cultures.

*****

Code: BP303T

R19

B.Pharm II Year I Semester (R19) Regular & Supplementary Examinations April 2022

PHARMACEUTICAL MICROBIOLOGY

Time: 3 hours Max. Marks: 75

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) What are prokaryotes? Give examples.
(b) Draw a neat labelled diagram of bacteria.
(c) Explain “IMVic” test.
(d) Define disinfection and sterilization.
(e) What is bacteriostatic and bacteriocidal action? Explain with examples.
(f) Classify fungi.
(g) Explain the merits of microbiological assay.
(h) Draw the flow diagram of aseptic room.
(i) Explain membrane filtration method for testing the sterility.
(j) Write a note on applications of cell culture in pharmaceutical industry.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2 (a) Explain short term and long term preservation methods for pure culture.
(b) What is bacterial growth curve? Explain the factors affecting growth of bacteria.

3 (a) Explain different methods of sterilization.
(b) Explain mechanism of action of disinfectants.

4 (a) Explain different types of laminar air flow hood.
(b) Explain different types of microbial spoilage in pharmaceutical products.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5 Explain morphological classification of bacteria.

6 Explain in detail quantitative measurement of bacterial growth.

7 Write a note on different staining techniques for identification of bacteria.

8 Define sterilization indicators. Explain its types.

9 Explain sterility testing of liquid products, as per Indian pharmacopoeia.

10 (a) Explain Chick Martin test.
(b) Explain Rideal-Walker coefficient test.

11 (a) Write a note on different sources of contamination in an Aseptic area.
(b) Classify classes of clean room with their properties.

12 Explain microbiological assay of antibiotics by Cup-Plate and Tube Assay method.

13 (a) Write a note on evaluation of microbial stability of formulations.
(b) Classify different types of culture media.

*****

Code: BP303T

R19

B.Pharm II Year I Semester (R19) Supplementary Examinations August 2021

PHARMACEUTICAL MICROBIOLOGY

Time: 3 hours Max. Marks: 75

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Define pure culture.
(b) Write the difference between Prokaryotes and Eukaryotes.
(c) Define sterilization cycle.
(d) Give the principle involved in gram staining technique.
(e) Write the difference between Bactericidal & Bacteriostatic.
(f) Define antiseptic and disinfectant.
(g) Define MIC.
(h) Write the sources of contamination in aseptic area.
(i) Define transformed culture.
(j) Define preservative.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2 (a) Explain the different methods of isolation of bacteria.
(b) Discuss the design, mechanism, operation and applications of hot air oven.

3 (a) Discuss the reproductive mechanisms in fungi.
(b) Discuss the microbiological assay of Streptomycin.

4 (a) Write a note on applications of cell cultures in pharmaceutical industry and research.
(b) Define & classify viruses. Explain the replication of viruses.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5 (a) Write a note on antibiotic sensitivity test.
(b) Write the difference between gram positive & gram negative bacteria.

6 Explain the principle involved in Methyl orange & Indole tests.

7 Write the principle and procedure involved in acid-fast staining.

8 (a) Write a note on chemical indicators used in validation of sterilization process.
(b) Write the microbiological assay of Riboflavin.

9 Discuss the microbiological assay of Lysine.

10 Explain the factors affecting microbial spoilage of pharmaceutical products.

11 Write a short note on gradient plate method.

12 (a) Write the mode of action of Halogens & Iodine as disinfectants.
(b) Differentiate between Exotoxins & Endotoxins.

13 (a) Write a note on assessment of microbial contamination and spoilage.
(b) Differentiate between dark field microscopy & phase contrast microscopy.

*****

Code: BP303T

R19

B.Pharm II Year I Semester (R19) Regular Examinations March 2021

PHARMACEUTICAL MICROBIOLOGY

Time: 3 hours Max. Marks: 75

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Write a note on Roll tube method.
(b) Differentiate between Dark field microscopy & Phase contrast microscopy.
(c) Define D-value & Z-value.
(d) Define sterilization cycle.
(e) Write the difference between Antiseptic and Disinfectant.
(f) Write the mechanism of Alcohol as disinfectant.
(g) Define zone of inhibition.
(h) Define microbiological assay.
(i) Give the applications of monoclonal antibody.
(j) Define spoilage.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2 (a) Enlist and discuss the nutrients required for cultivation of bacteria.
(b) Discuss the design, mechanism, operation and applications of autoclave.

3 (a) Discuss the factors that will affect disinfectant action.
(b) Discuss the microbiological assay of Penicillin.

4 (a) Explain the different sources and types of microbial contaminants of pharmaceutical products.
(b) Explain the different methods of measurement of bacterial count.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5 (a) Draw an ultra structure of bacteria.
(b) Explain the principle involved in Gram staining technique.

6 (a) Explain any two different methods of preservation of bacteria.
(b) Write a note on biological indicators used in validation of sterilization process.

7 (a) Explain the principle involved in Indole & Citrate utilization tests.
(b) Write a note on Rideal–Walker coefficient.

8 (a) How do you carryout test for sterility on ophthalmic products?
(b) Write the construction and working of laminar air flow equipment.

9 (a) Write a note on animal cell culture media.
(b) Explain the different types of microbial spoilage.

Contd. in page 2

10 (a) Write a note on applications of cell cultures in pharmaceutical industry and research.
(b) Discuss the microbiological assay of Vitamin B12.

11 (a) Write a note on antibiotic sensitivity test.
(b) Write the mode of action of Halogens & Iodine as disinfectants.

12 Write a detailed note on radiation sterilization.

13 (a) Write a note on spread plate & pour plate methods.
(b) Write a note on cultivation of virus.

*****