

KATHMANDU UNIVERSITY
End Semester Examination
June/July 2024

Level : B.Pharm.
Year : I
Time : 2 hrs. 30mins.

Course : PHAR 113
Semester : II
F. M. : 55

11 JUL 2024

SECTION "B"

[5 Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions.

1. Write about a fungus which has served as a model eukaryotic organism for nearly a century?
2. Write about installation qualification.
3. Define spirochetes with its characteristic features. Give the name of two diseases associated with it.
4. Discuss about the discovery era in microbiology.
5. Mention the salient features of MacConkey media.
6. State the principle of sterility test. Why positive and negative controls are important on it?
7. Mention the procedure for the determination of Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC).

SECTION "C"

[5 Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

8. What is death rate curve? Explain D value on the basis of death rate curve. Define Z value.
9. How can we convert alcohols into sterilizing agent? Give some examples. What is the mechanism of action for its lethal activity? What is the advantage of adding aromatic group in alcohols?
10. Describe the cellular structure of mycoplasma with a diagram.
11. Define pyrogen. How are the results of pyrogen testing in rabbits interpreted?
12. Mention your recommendations for clean room design in selection of premise, doors and windows, walls and ceilings and air conditioning system.
13. Why do we stain bacteria? Explain the distinctions between Gram-positive and Gram-negative organisms.

P.T.O.

14. Define vaccine. What are the key steps involved in the production of vaccines?

SECTION "D"

[2 Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions.

15. Write about causative agent of Tuberculosis (TB). List out the six major clinical symptoms of the disease. Give the medication guideline for the disease. List out the five key components of DOTS.
16. Define preservatives. Discuss the factors affecting the efficacy of preservatives. Explain the importance of Phenol Coefficient Test, Chick Martin Test and Kelsey-Sykes Test.
17. How is differential media different from selective media? Differentiate between streak and lawn culture methods and explain about IMViC test.

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Marks Scored:

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Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date :

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SECTION "A"

[15Q. × 1 = 20 marks]

Choose and encircle the most appropriate option from each set of choices

- Which one is **NOT** non-injectable sterile fluids?
 Urological irrigation Haemodialysis solution
 Inhaler solution Total parenteral nutrition fluids
- Select the right method for sterilizing hospital waste:
 Red heat Flammng Incineration Infrared Radiation
- Actinomycetes are:
 Fungi Algae True bacteria Cyanobacteria
- Select the **FALSE** statement about sterilization at temperature above 100 °C.
 Efficient sterilizing agent than hot air
 Increased pressure increases the boiling point of water
 Under pressure, steam penetrates more deeply
 Water at 100°C has more heat than pressurized steam at same temperature.
- Select the non-ionizing radiation
 UV X-rays
 Gamm (γ)-radiation X-rays and UV
- Which of the following is used to test the efficiency of sterilization in an autoclave?
 Clostridium tetani Bacillus stearothermophilus
 Bacillus pumilus Bacillus subtilis
- Select the **FALSE** statement about actinomycetes:
 Actinomycetes are filamentous bacteria Actinomycetes are branched
 They are unicellular bacteria They are gram-negative bacteria
- Ergot is the product of
 Mycoplasma Bacteria Actinomycetes Fungi
- Select the **CORRECT** disease which is a viral infection, primarily infects the respirator system with fever and red spots on the body and mainly occurs in infants and children:
 Measles Diptheria Cholera Hepatitis D

10. Term vaccine was coined by
 Robert Koch Pasteur Needham Jenner
11. What does the ISO standard 14644-1 classify?
 Types of cleaning equipment Levels of cleanliness in clean rooms
 Guidelines for office maintenance Procedures for clean room construction
12. Greenish-Brownish halo-ring is observed in
 EMB agar MSA agar Blood agar MacConkey agar
13. Filter efficiency test can be performed by
 sling psychrometer DOP smoke
 Differential pressure Anemometer
14. The first vaccine for the eradication of small Pox was developed by
 Robert Koch Edward Jenner Needham Pasteur
15. The microbial limit for Class 100,000 is
 Less than 3 CFU per cubic meter Less than 3 CFU per cubic feet
 Less than 25 CFU per cubic meter Less than 25 CFU per cubic feet
16. While conducting a Rabbits Test for Pyrogens, the cumulative rise of body temperature should not be
 3.7 °C 37 °C 1.4°C 2.4 °C
17. How often should clean rooms typically be validated and tested for compliance?
 Every 10 years Every 5 years Annually Monthly
18. A positive Citrate utilization test is indicated by which color change?
 Yellow to red Green to blue Red to yellow Blue to green
19. Which of the following is a characteristic of subunit vaccines?
 They contain live pathogens
 They use only specific pieces of the pathogen
 They cause a mild form of the disease
 They require fewer doses compared to live vaccines
20. Which of the following is a reducing medium used to grow anaerobic bacteria?
 Thioglycollate broth Eosin methylene blue (EMB) agar
 Mannitol salt agar Hektoen enteric agar