

Marks scored:

KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Level : B. Pharm.
Year : II

Course : PHAR 201
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date FEB 21 2019

SECTION "A"

[20Q. × 1= 20 marks]

Choose and encircle the correct answer.

- Which of the statements on one level assay with standard curve and two level factorial assay is incorrect?
[a] One level assay uses five different concentration for standard solution
[b] One level assay utilizes 12 petri dishes
[c] Two level factorial assay uses two concentrations in both standard and sample solution
[d] The concentration difference in one level assay is of 1.25 proportion
- Which of the statements on culture media is not true?
[a] Solid agar (1.5 to 2.0 %) is the most commonly used solidifying agent.
[b] Semi-solid: Addition of agar at 0.5 % or less conc. produce semi-solid like soft consistency.
[c] Semi-solid is also known as "broth".
[d] Solid agar is useful for isolating bacteria and for determining characteristics of colony
- The desirable pressure difference between clean rooms and unclassified areas is
[a] 6 Pa [b] 8 Pa [c] 10 Pa [d] 15 Pa
- If the air supply rate is 3500 m³/hour and volume of room is 125 m³. The air change rate is
[a] 26/ hour [b] 28/ hour [c] 30/ hour [d] 32/ hour
- Common methods for checking the microbiological quality of air include
[a] Settle plate [b] Air-sampling [c] none of the above [d] Both a and b
- According to EU GMP, the microbial contamination in Grade B area by glove print (5 fingers cfu/glove) method should be
[a] Less than 3 [b] 3 [c] Less than 5 [d] 5
- Which of the following uses negative staining technique?
[a] Gram staining [b] Acid fast staining [c] Capsule staining [d] Endospore staining
- Which of the following statements on the microbial count (CFU/ML) in various grades of water is incorrect?
[a] For Potable water: less than 500 colony forming unit (CFU) per milliliter, and the absence of indicator microorganisms of fecal origin in samples of 100 ml
[b] Purified water: The microbial action limit is 100 CFU/ml
[c] Highly purified water: Microbial action limit is 10 CFU/100 ml
[d] WFI: Microbial action limit is 10 CFU/100 ml

9. Which of the following species does not fall under non-spore forming bacteria?

[a] <i>Bacillus</i> species	[b] <i>Corynebacterium</i> species
[c] <i>Staphylococcus</i> species	[d] <i>Streptococcus</i> species

10. In MacConkey agar, organism that ferments lactose will produce

[a] Colorless colonies	[b] Pink colonies
[c] Colonies with black center	[d] No colonies

11. HIV belongs to

[a] Retroviridae	[b] Rhabdoviridae	[c] Togaviridae	[d] Paramyxoviridae
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12. Which of the statements on microbiological assay technique is true?

[a] the potency of a chemical substance (antibiotic, vitamins, amino acids) is determined may be determined by the use of HPLC
[b] The potency is determined by comparing the zone of inhibition/growth of microorganism produced by measured conc. of test substance with that produced by known conc. of standard preparation of known potency
[c] This is the technique suitable for many compounds
[d] Presence of inactive impurities or degradation product will interfere with the result

13. This group of bacteria is employed in production of vinegar

[a] <i>Lactobacillus</i>	[b] <i>Acetobacteraceae</i>	[c] <i>Streptococcus</i>	[d] <i>Salmonella</i>
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14. Animalcules were described by

[a] Redi	[b] Schwann	[c] Semmelweis	[d] Leeuwenhoek
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15. Difference in light intensity between image and background is called

[a] Resolution	[b] Contrast	[c] Refractive Index	[d] Resolving Power
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16. The degree of heat that will kill organisms in a culture in 10 minutes is called

[a] Thermal death time	[b] Thermal death point
[c] D value	[d] Z value

17. It cannot be sterilized in autoclave

[a] Biological waste	[b] Surgical dressing
[c] Volatile substance	[d] Gowns

18. It is the selective growth media for *S. typhi*

[a] Wilson and Blair's agar	[b] Mannitol salt agar
[c] MacConkey's agar	[d] Thayer Martin agar

19. One of the following is gram negative organism

[a] <i>Bacillus subtilis</i>	[b] <i>Staphylococcus aureus</i>
[c] <i>Escherichia coli</i>	[d] <i>Corynebacterium diphtheriae</i>

20. It belongs to Filovirus group

[a] Hepatitis C virus	[b] Ebola Virus	[c] Rabies Virus	[d] Rota virus
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FEB 21 2019

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

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F. M. : 55

SECTION "B"

[5 Q. × 3 = 15 marks]

Indicate by checking (√) of each question you have answered in the cover page of main answer book. Answer *ANY FIVE* of the following questions:

1. Define:
 - a. Turbidimetric assay
 - b. Aseptic technique
 - c. Simple staining
2. State the conditions (both particle count and microbiological with correct units) required for Class 100, Class 10,000 and Class 100,000 types of clean room.
3. List down the types of pyrogens and explain the advantage of LAL test.
4. What are the sources of microbial contamination? List down the natural skin flora organisms of human being.
5. Write a note on culture media according to its consistency with two examples for each type.
6. How can validation and process monitoring of sterilization be done?
7. Give an account of phase contrast and fluorescent microscope.

SECTION "C"

[5 Q. × 5 = 25 marks]

Answer *ANY FIVE* of the following questions.

8. What are the different methods that can be used to culture microorganisms in laboratory? How streak culture is performed? Mention its significances.
9. Explain about Dengue including its causative agent, mode of transmission, pathogenesis, clinical features and treatment.
10. How are the differential culture medias like; MacConkey Agar, Salmonella-Shigella Agar (SSA), Mannitol-Salt Agar (MSA) and Blood Agar, used for the differentiation of various types of bacteria?

11. What are Pyrogens? Explain different methods of eliminating them. Which method is the most effective one? Give reason.
12. Elaborate on different types of reproduction that can be seen in fungi.
13. Explain the lytic and lysogenic responses of bacteriophages.
14. Elaborate on bacterial cell wall and bacterial toxins.

SECTION "D"
[2 Q. × 7.5 = 15 marks]

Answer *ANY TWO* of the following questions:

15. How is microbial assay of antibiotics, vitamins and amino acids performed in laboratory? How is it different than other analytical assay?
16. What are the principles of clean room testing? List down the tests done for testing and re-testing the clean room and explain them.
17. What are the different methods of sterilization? Give account different types of dry and moist heat sterilization. Define Z value. [1+5.5+1]