

SVKM'S NMIMS

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Programme: B. Pharm / B. Pharm + MBA ✓
Academic Year: 2019-20
Subject: Pharmaceutical Microbiology – Theory ✓
Date: 25 November 2019 ✓

Year: II
Semester: III ✓
Marks: 75 ✓
Time: 10.00 am to 1.00 pm
Duration: 3 hrs. ✓
No. of Pages : 04

FINAL EXAMINATION

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

- 1) All questions to be attempted.
- 2) Answer to each new question to be started on a fresh page.
- 3) Figures in brackets on the right hand side indicate full marks.
- 4) Assume suitable data if necessary.
- 5) Draw diagram wherever necessary.

Q. I Multiple Choice Questions-MCQs (Answer all the questions): **[20 x 1 = 20]**

1. He is regarded as pioneer of antiseptic surgery after his use of phenol to cleanse wounds. Identify-
 - a. Joseph Lister
 - b. Edward Jenner
 - c. Robert Koch
 - d. Louis Pasteur

2. For a bacterial cell identify which of the following statement is false:
 - a. nucleolus is absent and pili present
 - b. it does not exhibit mitosis and does not possess sterol in cell membrane
 - c. mitochondria absent
 - d. fimbriae and polyhydroxy-butyrate absent

3. Lipoteichoic acid is present in cell wall of :
 - a. Gram-positive cells
 - b. Gram-negative cells
 - c. Viruses
 - d. Fungi

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4. Following is not an example of determining viable count:
- pour plate method
 - dry weight determination
 - most probable number
 - membrane filter method
5. Which part of the compound microscope helps in gathering and focusing light rays on the specimen to be viewed?
- Magnifying lens
 - Eyepiece lens
 - Objective lens
 - Condenser lens
6. Identify the test in which microorganisms generate neutral products, such as acetoin to give positive results :
- Methyl Red
 - Citrate test
 - Voges-Proskauer Test
 - Indole test
7. Bubble point pressure test is used as physical indicator for _____.
- Ethylene oxide
 - Membrane filtration
 - Moist heat
 - UV radiation
8. Identify the correct conditions during ethylene oxide sterilization –
- 45-63°C and 30-70% humidity
 - 45-63°C and 3-7% humidity
 - 20-30°C and 30-70% humidity
 - 20-30°C and 3-7% humidity
9. The time required to kill 90% of the microorganisms or spores in a sample at a specified temperature is called as-
- | | |
|------------|-----------------------|
| a. D value | b. z value |
| c. f value | d. Thermal death time |
10. A chemical that kills pathogens and non-pathogens but not necessarily endospores is called as –
- | | |
|-------------------|---------------------|
| a. germicide | b. fungistatic |
| c. bacteriostatic | d. all of the above |
11. Filamentous tube-like strands in fungi are called _____.
- | | |
|---------------|-------------|
| a. hyphae | b. mycelium |
| c. sclerotium | d. buds |

12. Following is an example of test used for evaluation of disinfectants:
- Membrane filtration
 - Kelsey-Sykes test
 - Bubble point test
 - Biochemical test
13. The nucleic acid core of phages covered by a protein coat is known as ____.
- capsomere
 - capsid
 - outer envelope
 - nuclear membrane
14. Disinfectant that act by denaturing proteins and possibly by dissolving membrane lipids is –
- isopropanol
 - iodine
 - chlorine
 - beta-propiolactone
15. Which of the following is best suited for long-term storage of microbial samples?
- Storage in refrigerator (2-8° C) on agar slant
 - Storage at room temperature in petri-dish
 - Storage in freezer at ultra-low temperatures (-80°C)
 - Storage in incubator at 37°C.
16. Identify incorrect property for an ideal preservative.
- | | |
|------------------|-----------------|
| a. non-selective | b. non-irritant |
| c. non-toxic | d. stable |
17. The growth of animal cells in-vitro in a suitable culture medium is called –
- Gene expression
 - Transgenesis
 - Plant tissue culture
 - Animal cell culture
18. The test organism for assay of lysine amino acid is ____.
- Escherichia coli*
 - Pediococcus acidilactici*
 - Staphylococcus aureus*
 - Staphylococcus epidermidis*
19. Maximum number of airborne particles/m³ permitted in Grade A (ISO 5) of dimension 0.5µm are:
- 4
 - 35
 - 352
 - 3520

20. Animal cell culture media are generally sterilized by –
- moist heat sterilization
 - pasteurization
 - membrane filtration
 - dry heat sterilization

Q. II Long Answers (Answer ANY 2 out of 3)

[2 x 10 = 20]

- Enlist the features that make fungi unique compared to other species. Also describe their structural characteristics. Explain with a suitable diagram in what ways fungi reproduce. (2+2+6)
- Give an account on principle, conditions, equipment, merits & demerits for Moist-heat sterilization. (10)
- Give a detailed account of pharmacopoeial methods to assess the sterility of a product. (10)

Q. III Short Answers (Answer ANY 7 out of 9)

[7 x 5 = 35]

- What are the different nutritional requirements for bacteria? Describe.
- Describe the features, applications of scanning electron microscopy.
- Give the importance of biochemical tests. Give the principle, procedure and application of citrate utilization test.
- Write a note on Gram staining.
- How lysogeny is used by viruses to reproduce? Describe its stages.
- Describe halogens as disinfectants.
- What are the sources and factors affecting spoilage of pharmaceutical products?
- Give an account on assay of vitamins with one example.
- What critical parameters for design of aseptic area are to be considered? Describe with examples.

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