CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

5th Semester of B. Pharm. Examination

University Theory Examination March 2018

PH319 Pharmaceutical Microbiology and Biotechnology

Date: 26.03.2018, Monday, Time: 10:00 a.m. to 1:00 p.m. **Maximum Marks: 80**

Instructions:

1. **There are three sections in this question paper.**
2. **SECTION – I comprises of Question 1. Total marks for Section 1 are 20. There are 20 sub-questions (MCQ type). Answers to SECTION – I are to be given in Answer Sheet for MCQ type questions provided to you. Maximum time allotted for SECTION – I is 30 minutes. Answers to SECTION – I must be written during the first 30 minutes of the examination.**
3. **Answers to SECTION – II and SECTION – III are to be provided in separate Main Answer Books provided to you.**
4. **Figures to right indicate marks.**
5. **Draw neat labeled sketches wherever necessary.**

SECTION - I

Q 1 Attempt all questions. Each question is of one mark. **20**

1. The phycologist is the person who is involved in the study of
[A] Fungi
[B]Algae
[C]Virus
[D] Protozua

2. The human eye has the resolution power of upto
[A] 0.2 mm
[B] 5 nm
[C] 0.5 nm
[D] 10µm

3. The system in which groups of microorganism do not necessarily reflect genetic similarity or evolutionary relatedness. Instead, groups are based on convenient, observable characteristics are called as
[A] Lysogenetic classification system
[B] Phenetic classification system
[C] Phylogenetic classification system
[D] None of the Above

4. The following is not an acidic dye
[A] Nigrosin
[B] Eosin
[C] Acid Fuschin
[D] Malachite green

5. Bacterial cultures can be preserved for short term duration by
[A] Deep freezing
[B] Lyophilization
[C] Refrigeration
[D] None of the Above

6. The process which reduces the number of viable microorganisms to an acceptable level but may not inactive some viruses and bacterial spores.
[A] Sterilization
[B] Disinfection
[C] Antisepsis
[D] Cleaning

7. The Process of alternate heating and cooling to kill the microbes present in milk is called as :
[A] Boiling
[B] Tyndallization
[C]Pasteurization
[D] Steam sterilization

8. Capsule of bacteria do not accept most of chemical dyes cause of their chemical
composition so appear surrounding each bacteria as
[A] Endospore
[B] Spikes
[C] Halos
[D] None of the above

9. Mannitol Salt Agar Media is a
[A] Selective media
[B] A combination of selective and differential media
[C] Differential media
[D] Simple Media

10. Special staining techniques are used to identify
[A] Flagella
[B] Endospore
[C] capsule
[D] All of the above

11. Most bacteria grow best at narrow pH range near
[A] 4.5-5.5
[B] 7.5-8.5
[C] 5.5-6.5
[D] 6.5-7.5

12. In _____, cells must be opposite mating type, donor cell must carry plasmid and recipient cell usually does not carry plasmid.
[A] Transduction
[B] Transformation
[C] Cloning
[D] Conjugation

13. The temperature employed in 'Pasturization' is_____for 30mins in Holder method followed by cooling quickly to 130C.
[A] 630C
[B] 620C
[C] 720C
[D] 430C

14. Fluid thioglycolate medium composition, the role of agar is _____.
[A] Viscosity enhancer
[B] Isotonic agent
[C] Source of amino acid
[D] None of the above

15. Sterility Testing, for the identification of aerobic bacteria and lower fungi, _____medium is used.
[A] Fluid-thioglycolate
[B] Peptone broth
[C] Soyabein casein digest
[D] Cooked meat

16. Which of the following method is used for microbial assay of antibiotic?
[A] Spread plate method
[B] Streak plate method
[C] Filter paper disc method
[D] None of the Above

17. enzyme which reduces oxygen to water for the cultivation of anaerobic bacteria is
[A] Oxyrase
[B] Peptidase
[C] Lipase
[D] Amylase

18. Which of the following is the characteristic of virus structure?
[A] Plasma Membrane
[B] Ribosome
[C] Sensitive to Interferon
[D] ATP generating metabolism

19. Dry weight method of bacterial count is used for
[A] Motile bacteria
[B] Yeast
[C] Algae
[D] Filamentous bacteria

20. A microbe is introduced into an environment where its natural metabolism results in the detoxification or break down of hazardous chemicals or pollutants is called as
[A] Biodistribution
[B] Bio-fixation
[C] Bioremediation
[D] Biohazard

SECTION – II

Q 2 Attempt any **TWO** of the following

A	Discuss the process of protoplast fusion and its application.	**05**
B	Define sterilization and discuss in detail dry heat sterilization process.	**05**
C	Describe in detail the various phases of 'Microbial Growth Cycle'.	**05**

Q 3 Attempt any **TWO** of the following

A	Enlist the various staining techniques for micro-organisms and explain in brief 'Zeil Neilsson staining technique'.	**05**
B	Compare and Contrast: Selective media and differential media with suitable examples.	**05**
C	Define the following: (a) Psychrophiles (b) Halotolerant (c) Xerophiles (d) Obligate aerobes (e) Capnophiles	**05**

SECTION – III

Q 4 Attempt any **FOUR** of the following

A	Discuss briefly the methods used for measuring the effectiveness of disinfectants.	**05**
B	Write a brief note on Gene cloning process and its application.	**05**
C	Enumerate the Microbiological assay techniques of antibiotics and describe any one method in detail.	**05**
D	Write a brief note on different medias used for sterility testing.	**05**
E	Write a note on 'Conjugation' as a method of recombinant DNA technology.	**05**
F	Write a note on different carrier binding techniques used for enzyme immobilization.	**05**

Q 5 Attempt any **FOUR** of the following

A	Classify the various methods for microbial biotransformation and distinguish the salient features of 'Growing Culture' process.	**05**

B	Explain in detail: Spirochetes.	**05**
C	Write a brief note on pour plate and spread plate as techniques for determining microbial content in samples.	**05**
D	What do you mean by sterility testing? Describe the ‘membrane filtration’ as a method for sterility testing.	**05**
E	Explain in brief ‘Lytic cycle’ of viral multiplication with suitable	**05**
F	Apply the principle of fermentation for the manufacturing of penicillin by means of flowchart.	**05**