

VCD - 26/11/19

Q.P. Code: USBT104

2 ½ Hours

## Basic Life Science II

Total Marks: 75

1. Attempt **all** questions.
2. **All** questions carry **equal** marks.
3. Draw **neat labeled diagrams** wherever necessary.
4. Use of **log tables** and **non-programmable calculator** is **allowed**.
5. For Q 2, Q 3 and Q 4 attempt A and B OR C and D.

### Q 1 Do as directed (Any fifteen)

15

1. Objectives are attached to \_\_\_\_\_ part of the compound microscope.
2. Calculate the working distance of covered object in sharp focus when 3.5 turns are taken by fine adjustment knob.
3. Define the term: Resolving power of a microscope.
4. The etiological agent of Tuberculosis in human s is \_\_\_\_\_.
5. Define the term: Stain.
6. Give one example of differential staining method.
7. Define the term: Mordent.
8. Give an example of dry heat as means of controlling microorganisms.
9. What method would be employed to sterilize oil?
10. State whether true or false: Absolute ethyl alcohol is more effective than 70% ethyl alcohol.
11. Define the term: Disinfection.
12. What is another name for fractional sterilization?
13. Name the derivative of phenol which is marketed in a solution of glycerin and water.
14. State whether true or false: dessicated cultures of microorganisms remain viable for many years.
15. Define the term: Heterotroph.
16. What is meant by the term: Enriched media?
17. What is a 'pure culture' in microbiology?
18. The term used to describe the growth phase in which there is maximum secondary metabolite formation is \_\_\_\_\_.
19. What is the use of Petroff-Houser chamber in microbiology?
20. Name any one cryoprotective agent used in the preservation of bacteria cultures.

- Q. 2 A Describe construction and working of dark field illumination technique. 08  
Q. 2 B Explain types of objectives. Add a note on its chief functions. 07

OR

- Q. 2 C Define dye. Explain acidic and basic dyes with suitable examples. 08  
Q. 2 D Describe the method of Ziehl-Neelsen staining. 07

- Q. 3 A Give a brief account on moist heat as a physical agent for controlling microorganisms. 08

- Q. 3 B Aldehydes are effective in controlling microorganisms. Justify. 07

OR

- Q. 3 C Give a brief account on halogens as a chemical agent of controlling microorganisms. 08

- Q. 3 D How are radiations effective in controlling microorganisms. 07

- Q. 4 A Explain the phenomenon of diauxic growth of bacteria. 08

- Q. 4 B How would you – Isolate bacteria by the spread plate method? 07

OR

- Q. 4 C Explain the concept of growth yield of bacterial cultures. 08

- Q. 4 D How would you – Enumerate bacteria by the colony count method? 07

- Q. 5 Write Short notes on any three of the following 15

- Theories of staining
- Natural stains with examples
- Filtration.
- $\beta$ propionilactone
- Lyophilization.