

**First Semester B.Sc. Degree Examination,
October/November 2019**

(CBCS - Semester Scheme)

Microbiology

**Paper I - 1.3 - FUNDAMENTALS OF MICROBIOLOGY
AND BIOPHYSICS**

Time : 3 Hours]

[Max. Marks : 90

Instructions to Candidates :

1. *Answers ALL Parts.*
2. *Draw diagrams wherever necessary.*

PART - A

Answer any **TEN** questions in 1 or 2 sentences :

(10 × 2 = 20)

1. Resolving power
2. Environmental microbiology
3. Colony counter
4. Negative staining
5. LPS layer
6. Mordant
7. Mitochondria
8. Nucleoid
9. Incineration
10. Microbiostatic agent
11. Sedimentation coefficient
12. Surface tension.



PART - B

Answer any **EIGHT** of the following :

(8 × 5 = 40)

13. Write a note on dark field microscopy.
14. Explain principle and applications of centrifuge.

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15. Write a note on principle and procedure involved in flagella staining.
16. Give an account of dyes used in staining technologies.
17. Write a note on :
 - (a) Functions of cell membrane
 - (b) Endospores.
18. Explain :
 - (a) Metaphase
 - (b) Capsule in bacteria.
19. Describe dry heat sterilization with suitable example.
20. List the characteristics of anti microbial agents.
21. Discuss scope and branches of biophysics.
22. Explain the principle and applications of UV-visible spectrophotometer.

PART - C

Answer any **THREE** questions :

(3 × 10 = 30)

23. Explain the principle, construction and applications of electron microscope.
 24. Describe the principle and steps involved in Gram's staining technique.
 25. Describe the structure of prokaryotic cell in detail.
 26. Discuss the various filtration methods employed for microbial control.
 27. Write a note on principle, types and applications of chromatography.
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