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**First Year (B.Sc. Biotechnology)
BIO1111: Microbial Science
(Semester I)**

**Program: B. Sc. Biotech (04)
Program Specific: Biotechnology
Course Type: DSC1
Paper: -**

**Credits: 4
Time: 3 Hours
Max. Marks: 60
SET: A**

Instructions to the candidate:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Draw a well labelled diagram wherever necessary.

SECTION: A

Q1) Answer the following

[1 X 10 =10]

1. Define: Numerical aperture
2. What is Mortant? Give example.
3. Name Gram-positive organisms.
4. What is a pure culture?
5. Give mode of action of moist heat.
6. Write full form of HEPA.
7. What is parasitism?
8. What is role of peptone in nutrient media?
9. Name carbohydrate containing inclusion body in bacteria.
10. Who invented small pox vaccine?

SECTION: B

Q2) Answer the following (Attempt any 5/7)

[5 X 2 = 10]

1. What are growth factors? Name any two.
2. What is a defined media? Give example.
3. Give role of condenser in compound microscope.
4. Classify microorganisms on the basis of oxygen requirement.
5. Differentiate between prokaryotes and Eubacteria.
6. Give distinguishing characters of algae.
7. Describe various colony formation pattern with respect to margin.

SECTION: C

Q3) Answer the following (Attempt any 5/7)

[5 X 3 = 15]

1. Give salient features of Bergey's manual.
2. Diagrammatically represent bacterial flagella.
3. What are selective media? Name selective agents used in selective media.
4. Describe process of binary fission.
5. Write characteristics of ideal disinfectant agents.
6. How do we check efficiency of steam sterilization?
7. What is Biosafety level 1?

SECTION: D

Q4) Answer the following (Attempt any 3/5)

[3 X 5 = 15]

1. Describe ultrastructure of Gram-positive cell wall.
2. Discuss plant-microbe interaction with suitable example.
3. How would you use streak plate technique for isolation of bacteria?
4. With neat labeled diagram give principle and working of autoclave.
5. Justify: Bacteria are causative agent of infectious diseases.

SECTION: E

Q5) Write a short note on the following (Attempt any 2/4)

[2 X 5 = 10]

1. Nutritional classes of bacteria.
2. Gram – staining.
3. Koch's postulates.
4. Bacterial growth curve.
