



SE – 191

II Semester B.Sc. Examination, September 2020
(CBCS – 2014-15 and Onwards) (F+R)
BIOTECHNOLOGY – II
(General Microbiology and Biostatistics)



Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Part – I and Part – II must be answered in **separate** booklets.
2) Draw **neat** labelled diagrams **whenever** necessary.

PART – I

Section – A

I. Answer the following :

(4×2=8)

- 1) Eye piece
- 2) Negative staining
- 3) Joseph Lister
- 4) Aerobes.

Section – B

II. Answer **any two** of the following :

(2×6=12)

- 5) What are bacteriophage ? Explain lambda phage in detail.
- 6) Explain the construction and working principle of SEM.
- 7) Explain the branches of microbiology.

Section – C

III. Answer **any two** of the following :

(2×10=20)

- 8) What is sterilization ? Explain in detail the sterilization by heat.
- 9) What are fungi ? Explain the classification and reproduction in detail.
- 10) Define photosynthetic bacteria and add a note on photosynthetic pigments in prokaryotes.
- 11) With neat labelled diagram explain HIV and discuss AIDS in detail.

P.T.O.



Section – D

IV. Answer the following :

(5×1=5)

- 12) UV rays
- 13) Peritrichous
- 14) Basidiomycetes
- 15) Mycoplasma
- 16) Capsid.

PART – II

I. Answer **any four** of the following :

(4×5=20)

- 1) The following table gives marks obtained by 10 students.

Roll No.	1	2	3	4	5	6	7	8	9	10
Marks Obtained	66	67	68	69	70	70	69	68	67	66

Calculate the arithmetic mean and median of marks among the students.

- 2) Represent the following data by using simple bar diagram.

China	45
Germany	17
India	35
Newzeland	28
Sweden	16

- 3) What is standard deviation ? Calculate the standard deviation for the following data :

Class Interval	51 – 55	56 – 60	61 – 65	66 – 70	71 – 75	76 – 80
Frequency	7	15	30	25	14	9



4) Write short notes on :

- a) Binomial distribution
- b) Chi-square.

5) A bag contains 5 green and 3 yellow fruits. Two fruits are taken at random one after the other without replacement. Find the probability that both are yellow.

6) Explain the

- 1) Role of statistics in life sciences.
- 2) Different measures of central tendency.

II. Answer the following :

(5×1=5)

- 7) Statistical hypothesis
 - 8) t-test
 - 9) Formula to calculate arithmetic mean in continuous series.
 - 10) Poisson distribution
 - 11) Standard error.
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