FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2020

Microbiology

MBY 1C 03—COMPUTER APPLICATIONS—FUNDAMENTALS

(2014 Admissions)

Time : Three Hours   Maximum : 64 Marks

Section A

*Answer **all** questions.*
Each question carries ½ mark.

1. A ——— is a translator program that translates a high-level language program into its equivalent machine language program.

2. Name two high level languages.

3. ——— is a set of one or more programs designed to control the operation and extend the processing capability of a computer system.

4. Which of the following is not a font style ?

    (a) Bold.   (b) Italics.

    (c) Regular.   (d) Superscript.

5. ——— is a set of one or more programs designed to solve a specific problem or do a specific task.

6. ——— formatting is the process of changing the way letters, numbers, punctuation marks, and symbols appear on the screen and in print.

    (a) Document.   (b) Character.

    (c) Paragraph.   (d) Object.

7. Vertical dimension of a computer spreadsheet is called ———————.

8. Which of the following is not character formatting ?

    (a) Text Colour.   (b) Alignment.

    (c) Font.   (d) Subscript.

Turn over

9. The COUNT and MIN functions are examples of which category of functions ?

   (a) Text.   (b) Statistical.

   (c) Financial.   (d) Logical.

10. The default font used in Excel is :

   (a) Arial.   (b) Algerial.

   (c) Times new roman.   (d) Preeti.

11. Which of the following adds a text box on a slide of the powerpoint presentation ?

   (a) Insert → Text Box.   (b) Design → Text Box.

   (c) Format → Text Box.   (d) None of the above.

12. Which of the following fill effects can be used to fill the background of the slide ?

   (a) Picture.   (b) Gradient.

   (c) Texture.   (d) All of the above.

(12 × ½ = 6 marks)

Section B

Answer **all** *questions.*
Each question carries 2 marks.

13. What is processor speed ?

14. What is OMR ?

15. Define Operating System ?

16. Write note on Compiler.

17. How will you add tables in word ?

18. How to add columns in word ?

19. What is conditional formatting ?

20. Describe mathematical functions in excel.

21. What are the 3 types of transitions in PowerPoint ?

22. Why templates are used in PowerPoint ?

(10 × 2 = 20 marks)

Section C

Answer any **six** *questions.*
Each question carries 3 *marks.*

23. Give short note on output device that is used to generate hard copy and print any document ?

24. What is high level language ? Write short note on two high-level languages.

25. Write note on selecting and editing text.

26. Explain how to creating and printing merged documents.

27. Write note on changing date alignment.

28. Explain about adding borders and colours.

29. What are 4 views in PowerPoint ?

30. Write note on adding and formatting text.

(6 × 3 = 18 marks)

Section D

Answer any **two** *questions.*
Each question carries 10 *marks.*

31. Explain input devices with example.

32. What is spreadsheet ? What are functions used in spreadsheet ?

33. What is PowerPoint ? Explain about clipart and other pictures, transitions, templet and effects on slides.

(2 × 10 = 20 marks)

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FIRST SEMESTER (CBCSS-UG) DEGREE EXAMINATION
NOVEMBER 2021

Microbiology

MBG 1 C02—BIOSTATISTICS—I

(2019—2020 Admissions)

Time : Two Hours

Maximum : 60 Marks

Use of calculator and Statistical table are permitted.

Part A (Short answer type Questions)

Each question carries 2 marks.
Maximum marks that can be scored from this part is 20.

1. Define nominal scale.

2. Define histogram.

3. What is random sampling ?

4. Describe geometric mean.

5. Define standard deviation.

6. Define co-efficient of variation.

7. Define random experiment.

8. Define addition theorem of any two events.

9. Define Binomial distribution.

10. Define Normal distribution.

11. Define F distribution.

12. Write any two applications of Chi-square distribution.

Part B (Short essay/paragraph type Questions)

Each question carries 5 marks.
Maximum marks that can be scored from this part is 30.

13. Define dispersion. What the various measures of dispersion ? Briefly explain quartile deviation and mean deviation.

14. Define frequency polygon. Briefly explain the steps of constructing a frequency polygon.

Turn over

15. A problem in Statistics is given to three students A, B, and C whose chances of solving it are $\frac{1}{2}, \frac{3}{4}$, and $\frac{1}{4}$ respectively. What is the probability that the problem will be solved if all of them try independently ?

16. Obtain the median and standard deviation of the following data :

X	1	2	3	4	5	6	7	8	9
f	8	10	11	16	20	25	15	9	6

17. Find the co-efficient of variation for the following data :

Age Group	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	25	35	45	55	65	75	85

18. Draw a histogram for the following data :

Marks ...	14.5-19.5	19.5-24.5	24.5-29.5	29.5-34.5	34.5-39·5	39.5-44.5
Frequency...	9	11	10	44	45	54

Marks ...	44.5-49.5	49.5-54.5	54.5-59.5	59.5-64.5	64.5-69.5
Frequency...	37	28	8	5	1

19. A and B play a game in which their chances of winning are in the ratio of 3:2. Find A's chance of winning at least three games out of five games played. (Use Binomial distribution)

Part C (Essay type Questions)

Each question carries 10 marks.
*(Answer any **one** question)*
Maximum marks that can be scored from this part is 10.

20. From the following data calculate : (i) Mean ; (ii) Median ; (iii) Mean deviation about mean ; and (iv) Mean deviation about median :

X ...	170-180	180-190	190-200	200-210	210-220	220-230	230-240	240-250
F ...	52	68	85	92	100	95	70	28

21. a) Explain *t* distribution. Write any two of its properties.

  b) Explain chi-square distribution. Write any two of its properties.

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FIRST SEMESTER (CBCSS-UG) DEGREE EXAMINATION NOVEMBER 2021

Microbiology

MBG 1 C01—GENERAL MICROBIOLOGY

(2019—2020 Admissions)

Time : Two Hours

Maximum : 60 Marks

Part A (Short Answer Type Questions)

Answer **all** *questions.*
Each question carries 2 marks.
Maximum 20 marks.

1. Joseph Lister.

2. Pathogens.

3. Glycocalyx.

4. Teichoic acid.

5. L- forms of bacteria.

6. Plasmid.

7. Define sterilization.

8. Incineration.

9. Membrane filter.

10. Non-ionizing radiations for sterilization.

11. Alcohols as antimicrobial agents.

12. Spheroplast.

Part B (Paragraph Type Questions)

Answer **all** *questions.*
5 marks each.
Maximum 30 marks.

13. Contributions of Robert Koch.

14. Beneficial micro-organisms.

Turn over

15. Cell membrane of bacteria.

16. Phase contrast microscope.

17. Filtration.

18. Autoclaving.

19. Gram staining.

Part C (Essay type)

Answer any **one**.

10 *marks*.

20. Write on different cell wall types of bacteria with neat diagrams.

21. Explain with a diagram the bright field microscopy.

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021

Microbiology

MBG 1B 01—GENERAL MICROBIOLOGY

(2019—2020 Admissions)

Time : Two Hours　　　　　　　　　　　　　　　　　　　　Maximum : 60 Marks

Part A (Short Answer Type Questions)

Answer **all** *questions.*
Each question carries 2 marks.
Maximum 20 marks.

1. Alexander Fleming.

2. Glycocalyx.

3. Teichoic acid.

4. Flaming.

5. Define the term disinfection.

6. Counterstain.

7. Sintered glass filter.

8. Tetrad arrangement of bacterial cell.

9. Pili.

10. Protoplast.

11. Applications of negative staining.

12. Yeast.

Part B (Paragraph Type Questions)

Answer **all** *questions.*
Each question carries 5 marks.
Maximum 30 marks.

13. Morphology of bacteriophage.

14. Phase contrast microscopy.

Turn over

15. Spore staining.

16. Radiation.

17. Antiseptics.

18. Bacterial Chromosome and plasmids.

19. Cell membrane structure of bacteria.

Part C (Essay Type)

Answer any **one** *question.*
The question carries 10 *marks.*

20. Write an essay on history and scope of microbiology.

21. Explain with a neat labelled diagram the ultrastructure of bacterial cell.

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FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021

Microbiology

MBG 1C 02—BIOSTATISTICS–I

(2021 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer at least **eight** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 24.

1. What is meant by data on ratio scale and interval scale ?

2. What is meant by sample ?

3. What is meant by statistic ?

4. What is random sampling ?

5. Define geometric mean and harmonic mean.

6. Out of eleven births in a hospital, five babies weighted over 2.5 kg and five babies weighted less than 2.5 kg. What is the median weight of the babies ?

7. What are the measures of dispersion ?

8. What is co-efficient of variation ?

9. Give mathematical definition of probability.

10. Define equally likely and mutually exclusive events.

11. Write the probability density function of Binomial distribution.

12. Define Chi-square distribution.

(8 × 3 = 24 marks)

Turn over

Section B (Short Essay/Paragraph Type Questions)

Answer at least **five** *questions.*
Each question carries 5 marks.
All questions can be attended.
Overall Ceiling 25.

13. The following figures are ages of patients admitted to a hospital with poliomyelitis. Construct a frequency distribution table :

    8,   24, 18, 5,   6,   12, 4,   3,   3,   2,   3,   23, 9,   18, 16, 1,   2,   3,   5,   11,
    13, 15, 9,   11, 11, 7,   10, 6,   9,   5,   16, 20, 4,   3,   3,   3,   10, 3,   2,   1,
    6,   9,   3,   7,   14, 8,   1,   4,   6,   4,   15, 22, 2,   1,   4,   7,   1,   12, 3,   23,
    4,   19, 6,   2,   2,   4,   14, 2,   2,   21, 3,   2,   9,   3,   2,   1,   7,   19.

14. Draw frequency polygon for the following data :

Variable	0–10	10–20	20–40	40–50	50–60	60–70	70–90	90-100
Frequency :	4	6	14	16	14	8	16	5

15. For following distribution of marks of 70 students in a class, obtain the cumulative frequency distributions :

Marks	10–20	20–30	30–50	50–60	60–70
No.of students	4	16	30	18	2

16. Calculate mean, median and mode from the following data of heights in inches of a group of students :

    61, 62, 63, 61, 63, 64, 60, 65, 63, 64, 64, 66, 64.

17. Give classical definition of probability. Use this definition to establish $0 \leq P(A) \leq 1$ for any event A.

18. Let A and B be the possible outcome of an experiment and suppose that $P(A) = 0.4$, $P(A \cup B) 0.7$ and $P(B) = p$. For what choice of p (i) A and B are mutually exclusive ; and (ii) A and B are independent ?

19. Explain the procedure of fitting the Binomial distribution.

(5 × 5 = 25 marks)

Section C (Essay Type Questions)

Answer any **one** *question.*
The question carries 11 *marks.*

20. (i) For a group of 200 candidates the mean and standard deviation of scores were found to be 40 and 15 respectively. Later on it was discovered that the scores 43 and 35 were misread as 34 and 53 respectively. Find the corrected mean and standard deviation.

(ii) Compute quartile deviation for the following data :

Marks	10	20	30	40	50	80
No.of Students	4	7	15	8	7	2

21. (i) Red blood cell deficiency may be determined by examining a specimen of the blood under microscope. Suppose that a small fixed volume contains on the average 20 blood cells for normal person. Using Poisson distribution, obtain the probability that a specimen from a normal person contains less than 5 blood cells.

(ii) The mean IQ of a large number of students of age 14 was 100 with the standard deviation 16. Assuming that the distribution to be normal, find what percentage of students had IQ between 80 and 120 ?

(1 × 11 = 11 marks)

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Microbiology

MBG 1C 01—GENERAL MICROBIOLOGY

(2021 Admissions)

Time : Two Hours   Maximum : 60 Marks

Section A (Short Answer Type Questions)

*Answer at least **eight** questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 24.

1. Anton Van Leuwenhoek.

2. Fimbriae.

3. Spheroplast.

4. Mesosomes.

5. Phase plate.

6. Fluorescence.

7. What is disinfection ?

8. Inspissation.

9. HEPA filter.

10. Flaming.

11. Candle filter.

12. Saprophytes.

(8 × 3 = 24 marks)

Turn over

Section B (Paragraph Type Questions)

*Answer at least **five** questions.*
Each question carries 5 marks.
All questions can be attended.
Overall Ceiling 25.

13. Cell wall of gram-positive bacteria.

14. Bright field microscopy.

15. Capsule staining.

16. Hot air oven.

17. Structure of endospore.

18. Arrangement of flagella.

19. Beneficial microbes.

(5 × 5 = 25 marks)

Section C (Essay Type)

*Answer any **one** question.*
The question carries 11 marks.

20. Explain electron microscopy and its types with neat labelled diagram.

21. Write on history of microbiology.

(1 × 11 = 11 marks)

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FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Microbiology

MBG 1B 01—GENERAL MICROBIOLOGY

(2021 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answer Type Questions)

*Answer at least **eight** questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 24.

1. Edward Jenner.

2. Nucleoid.

3. Capsule.

4. Red hot sterilization.

5. Inspissation.

6. Mordant

7. Antisepsis

8. Phenols

9. Fimbriae

10. Spheroplasl.

11. L forms.

12. Candle filters.

(8 × 3 = 24 marks)

Turn over

Section B (Paragraph Type Questions)

Answer at least **five** *questions.*
Each question carries 5 marks.
All questions can be attended.
Overall Ceiling 25.

13. Contributions of Louis Pasteur.

14. Gram staining.

15. Disinfectant testing.

16. Fluorescent Microscopy.

17. Cell membrane of bacteria.

18. Morphology of viruses.

19. Endospore formation and its structure.

(5 × 5 = 25 marks)

Section C (Essay Type)

Answer any **one** *question.*
The question carries 11 marks.

20. Explain various chemicals used for sterilization and disinfection. Write on the mode of action of each.

21. Differentiate between eukaryote and prokaryote with diagrams.

(1 × 11 = 11 marks)

FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Microbiology

MBG 1C 02—BIOSTATISTICS—I

(2018 Admissions)

Time : Three Hours   Maximum : 80 Marks

Use of calculator and Statistical table are permitted.

Section A

Answer all questions in one word.
Each question carries ½ mark.

Fill in the blanks :

1. The diagram of continuous rectangles of frequency distribution is known as —————.

2. Tournament team rankings is an example of ————— scale

3. The middle most value obtained by arranging the data in ascending or descending order is known as —————.

4. ————— is the coefficient of variation.

5. The set of all possible outcomes of a random experiment is known as —————.

6. What is the distribution of ratio of two chi square random variables divided by its degrees of freedom ?

7. If X is a random variable follows Poisson distribution with mean 4. Then what is the standard deviation of X ?

Write true *or* false :

8. In a frequency polygon graph, the midpoints of the frequencies are used.

9. Height of individual is a quantitative variable

10. Standard deviation is the square of variance

11. Mean and variance of binomial distribution are equal

12. Chi square statistic is the square of standard normal variable.

(12 × ½ = 6 marks)

Turn over

Section B

*Answer **all** questions in **one** sentence each.*
Each question carries 2 marks.

13. Define Frequency Table.

14. Define Arithmetic mean.

15. Define interval scale.

16. Write down the sample space of a random experiment of tossing two fair dice.

17. Define quartile deviation.

18. Define Multiplication theorem on probability.

19. Define Binomial distribution.

20. Find coefficient of variation if mean = 175 and variance = 100

21. Define inter-quartile range

22. Define F distribution

$(10 \times 2 = 20 \text{ marks})$

Section C

*Answer any **six** questions.*
Each question carries 5 marks.

23. Define frequency polygon. Briefly explain the steps of constructing a frequency polygon

24. What are the characteristics for an ideal measure of central tendency ?

25. For the following data find the arithmetic mean :

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students	12	18	27	20	17	6

26. Define mean deviation. What are the merits and demerits of mean deviation ?

27. Find the coefficient of variation for the following data :

Age Group	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	25	35	45	55	65	75	85

28. Define Normal distribution. Write any three properties of normal distribution.

29. Write a short note on chi-square distribution.

30. The random variable X following Poisson distribution with mean = 0.4. Find P(X = 0) and P(X = 1).

<div align="right">(6 × 5 = 30 marks)</div>

Section D

Answer any **two** *questions.*
Each question carries 12 marks.

31. A) Define Primary and secondary data with examples.

    B) Calculate the Median of the following data :

Class	20-40	40-60	60-80	80-100	100-120	120-140	140-160	160-180	180-200
Frequency	8	12	20	30	40	35	18	7	5

32. A) Define probability density function. Give its properties

    B) The probability of a man hitting a target is ¼. (i) If he fire 7 times, what is the probability of his hitting the target at least twice ? (ii)) If he fire 10 times, what is the probability of his hitting the target exactly 3 times ? (Use Binomial distribution)

33. A) Define dispersion. Briefly explain Standard deviation, Quartile deviation and Mean deviation

    B) For the following data find the standard deviation :

x	12.5	13	13.5	14	14.5	15	15.5	16
f	4	19	30	63	66	29	18	1

<div align="right">(2 × 12 = 24 marks)</div>

FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Microbiology

MBG 1C 01—GENERAL MICROBIOLOGY

(2018 Admissions)

Time : Three Hours　　　　　　　　　　　　　　　Maximum : 64 Marks

Part A (Objective/One Word Type)

Answer **all** *questions.*
½ mark each.

1. Swan neck experiment was done by ————.

2. Expand LAF cabinets.

3. Cold sterilization uses ————.

4. Extra chromosomal DNA present bacteria is called ————.

5. Which part of the light microscope concentrates light to specimen ?

6. Who discovered Penicillin ?

7. The dormant resting form of bacteria are called ————.

8. Which type of stain is used for colouring bacteria ?

9. Write the name of the test used for checking potency of disinfectant.

10. Which method is suitable for sterilization of heat labile liquids ?

11. Who is known as the father of Immunization ?

12. Write any one example for agents which can be used both as disinfectant and antiseptics.

(12 × ½ = 6 marks)

Part B (Short Answer Type)

Answer **all** *questions.*
2 marks each.

13. Inclusion bodies.

14. Teichoic acid.

15. Inspissation.

Turn over

16. Define sterilization.

17. Basic stains.

18. Write the principle of autoclave.

19. What is a nucleoid ?

20. Write the contributions of Joseph Lister.

21. NAM.

22. Peritrichous flagella.

(10 × 2 = 20 marks)

Part C (Short Essays)

Answer any **six** *questions.*
3 marks each.

23. Koch postulates.

24. Gram stain and its principle.

25. Autoclave and its working.

26. Fluorescent microscope.

27. Cell membrane of bacteria.

28. Negative staining.

29. Endospore formation.

30. Spontaneous generation Vs biogenesis.

(6 × 3 = 18 marks)

Part D (Essays)

Answer any **two** *questions.*
10 marks each.

31. Write in detail the parts and working and types of electron microscope.

32. Explain various chemicals used for disinfection.

33. Explain briefly the history and scope of microbiology.

(2 × 10 = 20 marks)

FIRST SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION NOVEMBER 2021

Microbiology

MBY 1C 01—GENERAL MICROBIOLOGY

(2016—2017 Admissions)

Time : Three Hours　　　　　　　　　　　　　　　　Maximum : 64 Marks

Section A

Answer **all** *questions.*
Each question carries ½ mark.

1. Abiogenesis was disproved by ——————.

2. Example for selective media.

3. The counter stain used in gram staining is ——————.

4. The temperature condition in autoclave for sterilizing media is ——————.

5. TDT is ——————.

6. Write an example for basic stain.

7. Cold sterilization uses ——————.

8. The function of condenser in microscope is ——————.

9. Who is known as the father of microbiology ?

10. The outer most gelatinous covering found in some bacteria is ——————.

11. Five kingdom classification was proposed by ——————.

12. The word Protista was coined by ——————.

(12 × ½ = 6 marks)

Section B

Answer **all** *questions.*
Each question carries 2 marks.

13. Endospore.

14. Aldehydes.

Turn over

15. Motility of bacteria.

16. Contributions of Joseph lister.

17. Selective media.

18. Condenser.

19. What are non-ionizing radiations ?

20. Sterilization control in autoclave.

21. Numerical taxonomy.

22. Define sterilization.

(10 × 2 = 20 marks)

Section C

Answer any **six** *questions.*
Each question carries 3 marks.

23. Hot air oven.

24. Filtration.

25. Phase contrast microscopy.

26. Contributions of Louis Pasteur.

27. Gram staining.

28. Anaerobic culture methods.

29. TEM.

30. Cell wall of bacteria.

(6 × 3 = 18 marks)

Section D

Write essays on any **two** *of the following.*
Each question carries 10 marks.

31. Write on various chemicals used for disinfection.

32. Write on different types of media used for cultivation of bacteria.

33. Write on various staining technique.

(2 × 10 = 20 marks)

FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Microbiology

MBG 1B 01—GENERAL MICROBIOLOGY

(2018 Admissions)

Time : Three Hours   Maximum : 80 Marks

Part A

(Objective / one word type, answer **all** *questions)*
½ mark each.

1. Who is known as the father of microscopy ?

2. The ideal temperature condition in autoclave is ————.

3. Outer membrane is found in ———— bacteria

4. Cocci in clusters are called ————.

5. Which type of ribosomes are present in prokaryotes?

6. Theory of biogenesis was proposed by ————.

7. To view the morphological shapes and arrangement, which type of staining method is used ?

8. Who introduced phenol as disinfectant ?

9. Very thermo labile liquids are sterilized by ———— method.

10. The viruses which eats bacteria are known as ————.

11. The food storage reserve in bacterial cells are called ————.

12. The outermost covering which is not tightly bound in bacteria are called ————.

(12 × ½ = 6 marks)

Part B

(Short answer type, Answer all questions) 2 marks each

13. Condenser.

14. Flaming.

15. Candle filters.

16. Germ theory of disease.

Turn over

17. Intrinsic proteins.

18. Endospore.

19. Contributions of Leuwenhoek.

20. Fimbriae.

21. Inspissation.

22. Aldehydes.

(10 × 2 = 20 marks)

Part C

(Short Essay, Answer any six)
5 *marks each*

23. Write on the scope and different fields of microbiology.

24. Fluorescent microscopy.

25. Differentiate eubactcria and archae bacteria.

26. Explain Differential staining with any two examples.

27. What is phenol coefficient test ? Explain.

28. Effect of penicillin and lysozyme on cell wall of bacteria.

29. What is filtration? Explain various types of filters.

30. Explain different methods in moist heat sterilization.

(6 × 5 = 30 marks)

Part D

(Essay, Answer any two)
12 *marks each.*

31. Explain with a diagram the ultra-structure of bacteria.

32. Explain various chemicals used for disinfection.

33. Explain electron microscope with the help of a neat labelled diagram. Also explain its types briefly.

(2 × 12 = 24 marks)

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FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2021

Microbiology

MBY 1B 01—GENERAL MICROBIOLOGY

(2016—2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

Section A

Answer all questions.
Each question carries ½ mark.

1. What is the function of condenser in microscope ?

2. The cocci arranged in chains are called ———————.

3. Bacteria having flagella all over its surface are called ———————.

4. The decolorizing agent used in gram staining is ———————.

5. Write any *one* of the methods of spore staining.

6. Who is the father of vaccination ?

7. Who is known as father of antiseptic surgery ?

8. Bacteria without any specific shape are called ———————.

9. True nucleus is absent in ———————.

10. Who introduces staining technique ?

11. The culture containing only one bacterial cells are called ———————.

12. Write one example for ionizing radiation

(12 × ½ = 6 marks)

Section B

Answer all questions.
Each question carries 2 marks.

13. Flaming.

14. LAF.

Turn over

15. Death curve.

16. Feulgen staining.

17. Archaebacteria.

18. Biogenesis.

19. Joseph Lister.

20. Negative staining.

21. Cold sterilization.

22. Magnification power of microscope.

(10 × 2 = 20 marks)

Section C

Answer any **six** *questions.*
Each question carries 5 marks.

23. Bacterial forms and arrangement.

24. Bright field microscopy.

25. Gram staining.

26. Pasteurization and its types.

27. Phenol co-efficient.

28. Fluorescent microscope.

29. Difference between prokaryotes and eukaryotes.

30. Write on flagellar staining.

(6 × 5 = 30 marks)

Section D

Write essays on any **two** *of the following.*
Each question carries 12 marks.

31. Write on various methods of sterilization by heat.

32. Explain the working and types of electron microscope with neat labelled diagram.

33. Write on various chemicals used for sterilization and disinfection.

(2 × 12 = 24 marks)