

**2003000203020117**  
**EXAMINATION DECEMBER 2024**  
**BACHELOR OF SCIENCE ( NON-NEP ) (THIRD SEMESTER)**  
**BIO SCIENCE (MICROBIOLOGY) PAPER - V**  
**INSTRUMENTATION & BIostatISTICS**

[Time: As Per Schedule]

[Max. Marks: 50]

**Instructions:**

**1. Fill up strictly the following details on your answer book**

- a. Name of the Examination: **BACHELOR OF SCIENCE (NON-NEP) (THIRD SEMESTER)**
  - b. Name of the Subject: **BIO SCIENCE (MICROBIOLOGY ) PAPER-V INSTRUMENTATION & BIostatISTICS**
  - c. Subject Code No: **2003000203020117**
2. Draw neat & clean diagram wherever necessary.  
3. Figures to the right indicate full marks of the question.  
4. All questions are compulsory.

Seat No:

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Student's Signature

**Q.1 Multiple choice questions:**

**08**

1. Atomic mass & atomic number are continuously changes in\_ \_ \_ \_ \_ .
  - a. Radioisotopes.
  - b. Stable compound
  - c. Isotopes
  - d. All
2. Which of the following is used for sterilization?
  - a. Alpha rays
  - b. Beta rays
  - c. Gamma rays
  - d. All
3. Photocell is present in\_ \_ \_ \_ \_ .
  - a. Electrophoresis
  - b. pH meter
  - c. Photometer
  - d. None
4. Basic requirement for pH meter is\_ \_ \_ \_ \_ .
  - a. Runner solution
  - b. Buffer solution
  - c. Monochromatic light
  - d. Glass electrode
5. Rf value is always
  - a. >1
  - b. =1
  - c. 0
  - d. None
6. Who discovered the pH?
  - a. H. Khorana
  - b. Sorenson

c. Nirenberg

d. Arne Tiselius

7. Table should have \_ \_ \_ \_

a. Number

b. Title

c. Row & column

d. All

8. Study of collection, analysis & interpretation of data obtained from biological study is called \_ \_ \_ \_

a. Mathematics

b. Arithmetic

c. Biostatistics

d. All

**Q.2 [A] Answer as directed:**

**04**

1. Define: Radioactivity
2. State the two examples of chromatographic technique.
3. What is pH?
4. State any two example of table.

**[B] Write short notes on (any two)**

**10**

1. Radioactivity.
2. Types of electrophoresis.
3. Measures of central tendency

**Q.3 Answer any two of the following.**

**14**

1. Write a brief account on principle & components of pH meter.
2. Describe in brief properties & application of EM Radiation.
3. Write a note on - Radiation hazards.

**Q.4 Describe in brief principle, types & procedure of electrophoresis techniques.**

**14**

**OR**

**Answer the following questions.**

**14**

1. Write a note on Histogram and frequency polygon.
2. Draw graph or of the following data & labelled properly.

Blood group	A	B	AB	O
No. of student	42	92	18	48

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