



MCC/24/M.SC./SEM.-IV/BOT/1

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PG (CBCS)

M.Sc. Semester-IV Examination, 2026

BOTANY

PAPER: BOT 403

(INSTRUMENTATION AND BIOSTATISTICS)

Full Marks: 20

Time: 1 Hour

The figures in the right-hand margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable.

A. Answer any **TWO** of the following questions: **2×2=4**

1. Define RPM. How it is differed from RCF.
2. Briefly mention Lambert Beer law to explain the principle of spectroscopy.
3. Mention the significance of rotary evaporator.
4. Mention the components present in PCR mixture.

B. Answer any **TWO** of the following questions: **4×2=8**

5. Mention different types of chromatographic techniques. Briefly describe the detail components of a HPLC and mention its applications. **1+3**
6. Write down the basic principle of gel filtration chromatography.
7. Mention the basic principle of electron microscopy? Differentiate between TEM and SEM. **2+2**
8. Differentiate mean, median and mode with example. For the frequency distribution of seed yield of sesamum given in the table, calculate the mean yield per plot.

| YIELD PER PLOT (IN GRAM) | 64.5-84.5 | 84.5-104.5 | 104.5-124.5 | 124.5-144.5 |
|--------------------------|-----------|------------|-------------|-------------|
| NO. OF PLOTS             | 3         | 5          | 7           | 20          |

C. Answer any **ONE** of the following questions: **8×1=8**

9. Define suspension culture. Define Bioreactor. Briefly describe different types of bioreactors with their applications. **1+1+6**
10. Define sublimation procedure. Mention the basic principle of lyophilizer. Mention the different types of lyophilizer with its applications. **1+2+5**

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