2025/11

SET A

M.Sc. BOTANY
THIRD SEMESTER
RESEARCH METHODOLOGY
MSB-302

[USE OMR FOR OBJECTIVE PART]

Duration: 1.30 hrs. **Full Marks: 35**

Objective

Time: 15 min. **Marks: 10**

Choose the correct answer from the following: *1X10=10*

1. Denaturation is the process of _____.
   a. Heating between 72°C
   b. Heating between 40 to 60°C
   c. Heating between 90 to 98°C
   d. Above 100°C

2. A spectrophotometer measures
   a. light given off by a substance
   b. light changed (change in wavelength) by a substance
   c. light that is fluoresced by a substance
   d. light that passes through a substance

3. Which of the following statements is true about migration of biomolecules?
   a. The rate of migration is directly proportional to the resistance of medium
   b. Rate of migration is directly proportional to current
   c. Low voltage is used for separation of high mass molecules
   d. Rate of migration is inversely proportional to current

4. Cybrids are produced by
   a. The nucleus of one species but cytoplasm from both the parent species
   b. The fusion of two same nuclei from the same species
   c. The fusion of two different nuclei from different species
   d. None of the above

5. Population characteristics are called _____
   a. Statistics
   b. Parameters
   c. Sampling
   d. None of the above

6. _____ is considered to be the best average in research.
   a. Median
   b. Mode
   c. Mean
   d. None of the above

7. Which of the following measure is used to measure the consistency of data?
   a. Standard deviation
   b. Variance
   c. Standard error
   d. Coefficient of variation

8. Which section of a research paper provides background and research objectives?
   a. References
   b. Discussion
   c. Introduction
   d. Abstract

9. Which of the following is a primary data collection method?
   a. Literature review
   b. Online databases
   c. Secondary survey reports
   d. Laboratory experiments

10. Which source is considered the most reliable for literature review?
   a. Social media posts
   b. Personal blogs
   c. Peer-reviewed journal articles
   d. Wikipedia

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(Descriptive)

Time : 1 hrs. 15 min. **Marks : 25**

[Answer question no.1 & any two (2) from the rest]

1. Calculate standard deviation of the following distribution **5**

Class	0 – 10	10 – 20	20 – 30	30 – 40
Frequency	3	5	6	2

2. Write short notes **5+5=10**
   a) Separation of samples by Thin layer chromatography
   b) Preparation and uses of safranin stain

3. What is PCR? Write the steps for DNA amplification. **2+8=10**

4. To test the efficiency of a new drug a controlled experiment was conducted wherein 300 patients were administered the new drug and 200 other patients were not given the drug. The patients were monitored and results were obtained as follows: **2½ ×4=10**

	Cured	Worsened	Not effect
The drug given	200	40	60
The drug not given	120	30	50

[Given, $\chi^2_{2,0.05}$= 3.84 5.99 7.8
d.f. = 1 2 3]

5. Define research. Discuss the various types of research with suitable examples. **10**

Or

Explain the importance of scientific writing in research communication.

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