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(FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2023 ONLY)

23PBY413

N.G.M. COLLEGE (AUTONOMOUS): POLLACHI
END-OF-SEMESTER EXAMINATIONS: MAY- 2025
COURSE NAME: M.Sc.-BOTANY **MAXIMUM MARKS: 75**
SEMESTER: IV **TIME : 3 HOURS**

RESEARCH METHODOLOGY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. Formulation of hypothesis may NOT be required in:

a) Survey method b) Historical studies c) Experimental studies d) Normative studies

2. Bibliometrics is

a) Function of Library network b) Information management service

c) Information management tool d) Library service

3. Which one of the following is the true example of primary data?

a) Journal b) Book c) Census Report d) Newspaper

4. In SPSS, what is the "Data Viewer"?

a) A table summarizing the frequencies of data for one variable

b) A spreadsheet into which data can be entered

c) A dialog box that allows you to choose a statistical test.

d) A screen in which variables can be defined and labeled.

5. Gel electrophoresis separates nucleic acid molecules based on _____

a) charge on molecules b) size of the molecules

c) nature of the molecules d) chemical properties of the nucleic acids

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. What is a sample in research design?

7. Define: Monograph

8. Give a few examples of secondary data

9. Define: Significance

10. In TEM analysis the sample is coated with which material? Why?

SECTION – B (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Describe the objectives of the research.

(OR)

b) Differentiate quantitative and qualitative research.

12. a) How to write a citation and why it is important

(OR)

b) Enlist the E-learning resources with example

(CONTD…….2)

13. a) Which type of data can be collected by survey method and explain.

(OR)

b) Find the statistical formulas to find mean, median, mode of a data

14. a) Discuss the features of Excel.

(OR)

b) Interpret the key concepts of cluster analysis.

15. a) Examine the working principle and application of pH meter.

(OR)

b) Assess the principle and uses of lyophilizer.

SECTION – C (5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(K4 (Or) K5)

16. a) Analyse the parameters to choose a research problem **K5**

(OR)

b) Investigate the features of a proper research design **K4**

17. a) Outline the components of dissertation writing **K4**

(OR)

b) Justify the need for standard operating procedure **K5**

18. a) Prioritize the ways to present data graphically **K5**

(OR)

b) Compare the growth rate (height) of sunflower plants treated with different fertilizers using t test **K5**

The height (in cm) of the plants after 4 weeks is recorded as follows:

Group 1 (New Fertilizer) : 35, 38, 40, 32, 36, 42, 41, 37, 39, 40

Group 2 (Standard Fertilizer) : 30, 33, 31, 32, 28, 29, 30, 34, 33, 31

19. a) Categorize the types of probability distribution **K5**

(OR)

b) A researcher is studying the effectiveness of three different types of diets on weight loss. Find whether there are any statistically significant differences in the mean weight loss across the three groups using ANOVA for the following data. **K5**

Diet Type	**Weight Loss (kg)**				
Diet 1	3.1	3.4	2.8	3.0	3.2
Diet 2	5.0	5.1	4.9	5.3	5.0
Diet 3	2.0	2.2	1.9	2.5	2.1

20. a) Point out the principle and application of SEM **K4**

(OR)

b) Examine the instrumentation of GC-MS **K5**

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