

(6 Pages)

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M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021.

Third Semester

Botany — Core

RESEARCH METHODOLOGY
BIOINSTRUMENTATION AND BIOLOGICAL
TECHNIQUES

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answers :

1. The essential qualities of a researcher are
 - (a) Spirit of free enquiry
 - (b) Reliance on observation and evidence
 - (c) Systematization or theorizing of knowledge
 - (d) All of the above

2. A research paper is a brief report of research work based on
 - (a) Primary data only
 - (b) Secondary data only
 - (c) Both primary and secondary data
 - (d) Previous data only
3. The word 'statistik' in German means
 - (a) Calculation
 - (b) Government
 - (c) Maths
 - (d) Classification
4. The mean, median and mode are
 - (a) Measures of deviation
 - (b) Ways of sampling
 - (c) Method of sampling
 - (d) None of the above
5. Which of the following is an azodye?
 - (a) Safranin
 - (b) Haematoxylin
 - (c) Aniline blue
 - (d) Orange G
6. Sudan Black B is often used for visualization of
 - (a) Protein
 - (b) Carbohydrates
 - (c) Aminoacids
 - (d) Lipids

7. Which of the following is not a type of centrifugation?
- (a) Hydro cyclone (b) Tubular centrifuge
(c) Microfiltration (d) Separating funnel
8. From the following which is the type of filtration centrifuge?
- (a) Screen centrifuge (b) Tubular centrifuge
(c) Decanter centrifuge (d) Separator centrifuge
9. The techniques electrophoresis for the separation of charged molecules was developed by
- (a) Tswett (b) Svedberg
(c) Tiselius (d) Sanger
10. Nanoscience can be studied with the help of
- (a) Quantum mechanics
(b) Newtonian mechanics
(c) Macro-dynamics
(d) Geophysics

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 250 words.

11. (a) Explain the oral presentation.

Or

- (b) Write short notes on impact factor.

12. (a) Describe the mean.

Or

- (b) Explain the median.

13. (a) Briefly explain the principles and applications of microscope.

Or

- (b) Give a concise account on types of microtome.

14. (a) Explain the high speed centrifugation.

Or

- (b) Out line the ultra centrifugation technique.

15. (a) Write short notes on principles of electrophoresis.

Or

- (b) Explain the applications of starch gel electrophoresis.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) How to choose the problem for research? Explain it.

Or

- (b) Write an essay on planning and preparation of thesis.

17. (a) Narrate the student t-test.

Or

- (b) Explain the ANOVA.

18. (a) Write an essay on transmission electron microscope.

Or

- (b) Describe the preparation of sample for ultra microtome techniques.

19. (a) Write an essay on flame photometer.

Or

(b) Give an account of TLC and its application.

20. (a) Explain the PAGE.

Or

(b) Describe the radioimmuno assay.
