

(6 pages)

Reg. No. :

Code No. : 6422

Sub. Code : ZBOM 34

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Botany — Core

RESEARCH METHODOLOGY AND
BIOINSTRUMENTATION

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Conference proceedings are considered as documents
- (a) conventional (b) primary
(c) secondary (d) tertiary

2. Information is _____
- (a) Processed data (b) Raw data
(c) Input data (d) Organized data
3. Mean, median and mode are measures of
- (a) ANOVA
(b) Ways of sampling
(c) Measure of control tendency
(d) None of the above
4. A circle divided into sectors proportional to the frequency of items shown is called
- (a) Bar chart (b) Pie chart
(c) Histogram (d) Frequency polygon
5. In fluorescence microscopy, which of the following performs the function of removing all light except the blue light?
- (a) Exciter filter (b) Barrier filter
(c) Dichroic mirror (d) Mercury arc lamp
6. Resolving power of a microscope depends upon
- (a) The focal length and aperture of the eye lens
(b) The focal length and objective of the eye lens
(c) The apertures of the objective and the eye lens
(d) The wavelength of light illuminating the object

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7. Select the correct statement from the following option
- (a) Spectroscopic methods require less time and more amount of sample than classical methods
 - (b) Spectroscopic methods require more time and more amount of sample than classical methods
 - (c) Spectroscopic methods require less time and less amount of sample than classical methods
 - (d) Spectroscopic methods require more time and less amount of sample than classical methods
8. Chromatography is a physical method that is used to separate _____
- (a) Simple mixtures (b) Complex mixtures
 - (c) Viscous mixtures (d) Metals
9. Which technique separates charged particles using electric field?
- (a) Hydrolysis (b) Electrophoresis
 - (c) Protein synthesis (d) Protein denaturing
10. What is IPR?
- (a) Intellectual Property Rights
 - (b) International Property Rights
 - (c) Indian Property Rights
 - (d) Intellectual Proper Right

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain the importance of bibliography.

Or

- (b) Write the differences between short communication, review paper and original research.

12. (a) Explain the tabulation of data.

Or

- (b) Define standard error. How to calculate standard error?

13. (a) Summarize the principles and applications of phase contrast microscopy.

Or

- (b) Describe the rotary microtome.

14. (a) Explain thin layer chromatography with its applications.

Or

- (b) Summarize the applications of centrifugation.

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15. (a) Explain the principles of electrophoresis and list its types.

Or

- (b) Explain the gel electrophoresis with its applications.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Summarize the importance of review of literature.

Or

- (b) Describe the structure of science thesis.

17. (a) Discuss the various tools and techniques of data collection used in research.

Or

- (b) Discuss the graphical representation of data.

18. (a) Describe the instrumentation of scanning electron microscope.

Or

- (b) Explain the fixation and fixatives.

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19. (a) Explain the instrumentation and applications of UV-Visible spectroscopy.

Or

- (b) Describe the instrumentation and applications of GLC.

20. (a) Explain the principle and procedure of SDS-PAGE.

Or

- (b) Explain the principle and steps involved in agarose gel electrophoresis.

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