

2021

**BOTANY — HONOURS**

**Paper : DSE-B-7**

**(Research Methodology)**

**Full Marks : 50**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

1. Answer **any five** questions :

- (a) What is 'Scale bar'? 2
- (b) Name two standard 'reference styles' used in scientific writing. 2
- (c) Calculate the molarity of a 500 ml solution prepared with 20g of NaOH. 2
- (d) What is secondary data? 2
- (e) Differentiate between microtome and free-hand sectioning. 2
- (f) What is cryofixation? 2
- (g) Name one fixative used for histological preparation. State the effect of fixation on plant chromosome staining with basic dyes. 1+1
- (h) What are the main differences between light microscopic and electron microscopic images? 2

2. Answer **any two** of the following :

- (a) Describe with diagrams the procedure of serial dilution. 5
- (b) Write notes on :
  - (i) Importance of documentation of observation
  - (ii) Field photography. 2½+2½
- (c) Mention different types of 'authorship abuse' in scientific writing. 5

3. Answer **any three** questions :

- (a) What is chronic toxicity? Name one chronic neurotoxicant. State the general guidelines of the safe handling of chemicals in the laboratory. 2+1+7
- (b) Write short notes : 2½×4
  - (i) Maceration
  - (ii) Plagiarism
  - (iii) Field photography
  - (iv) Micropipettes.

**Please Turn Over**

- (c) What are fluorochromes? Give an example. What is the significance of fluorochromes in karyotype study? Briefly explain the slide preparation method for the application of fluorochrome. 2+1+4+3
  - (d) State the differences between research method and research methodology. How conceptual research differs from empirical research? Write short discussion about literature survey. 4+3+3
  - (e) What is data? Enumerate different types of data. Explain different methods of graphical representation of data. 2+4+4
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