

Total No. of Printed Pages—4

5 SEM TDC DSE BOT (CBCS) 1 (H/NH)

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(Held in January/February, 2022)

BOTANY

(Discipline Specific Elective)

(For Honours and Non-Honours)

Paper : DSE-1

(Analytical Techniques in Plant Science)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. (a) Choose the correct answer of the following : 1×3=3

(i) If the average of a series of values is 10 and their variance is 4, then the coefficient of variance is 10% / 40% / 20% / 80%.

(2)

(ii) Millimeter / Nanometer / Centimeter / Decimeter is the smallest unit of measurement.

(iii) The PAGE stands for Polyacrylamide Gel Electrophoresis / Polymerization and Genetic Engineering / Post Application of Genetic Engineering / Poor Adaptation of Genetic Engineering.

(b) Fill in the blanks : $1 \times 2 = 2$

(i) _____ unit is used for sedimentation of coefficient gradient in centrifuge.

(ii) The technique to distinguish the individual based on their DNA print pattern is called _____.

2. Write short accounts on any *three* of the following : $4 \times 3 = 12$

(a) Marker enzymes

(b) Autoradiography

(c) Ultracentrifugation

(d) GLC

(e) X-ray crystallography

(3)

3. What is electrophoresis? Write on the different types of electrophoresis. Also describe on western blotting. $2+7+3=12$

Or

What is resolving power? How will you calculate the magnification of a compound microscope? Also mention the components of dark-field microscope. $1+8+3=12$

4. What are radioisotopes? Write briefly the application of radioisotopes in biological sciences. $2+10=12$

Or

Write notes on the following : $6+6=12$

(a) Mass spectrometry

(b) FISH

5. What is chromatography? Write briefly on different types of chromatography and their utility. $2+5+5=12$

(4)

Or.

What is standard deviation? Calculate mean, median and mode of the data given below :

$$3+3+3+3=12$$

<i>Class Interval</i>	<i>Frequency</i>
15-25	4
25-35	11
35-45	19
45-55	14
55-65	0
65-75	2
