

U.G. 6th Semester Examination - 2020**BOTANY****Course Code : BBOTDSHC5****Course Title : Analytical Techniques in Plant Sciences**

Full Marks : 30

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **ten** questions from the following:
1×10=10
- What is numerical aperture?
 - What is GFP?
 - What do you mean by Cryofixation?
 - What is RF value?
 - Define isoelectric point.
 - What do you mean by cation exchanger?
 - What do you mean by synchrotrons?
 - What is Lambert-Beer law?

[Turn over]

- What do you mean by mobile phase and stationary phase in liquid chromatography?
 - What is m/z ratio?
 - Write down the function of EtBr in agarose gel electrophoresis.
 - What is SDS-PAGE?
 - What is 'p' value?
 - What do you mean by bar plot?
 - What is SD value?
2. Answer any **five** questions from the following:
2×5=10
- What is resolution power of light microscope?
 - What do you mean by FRET method?
 - What is differential centrifugation?
 - What is freeze etching technique?
 - What do you mean by MALDI?
 - What do you mean by isocratic and gradient HPLC?
 - Define median and mode.
 - What do you mean by frequency table?

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[2]

3. Answer any **two** questions from the following:

$$5 \times 2 = 10$$

a) You have supplied with protein samples with different molecular weight and structure. How can you differentiate and characterize the proteins? Justify your answer. $2+3$

b) How to qualify and quantify an isolated DNA sample using UV-vis spectrophotometer?

$$2 \frac{1}{2} \times 2$$

c) Write short notes on: $2 \frac{1}{2} \times 2$

i) Autoradiography

ii) FACS
