

M.Sc. (Zoology) Semester - 2 (CBCS) Examination
August/September -2020 [OLD COURSE]
ANALYTICAL TECHNIQUES (INTERDISCIPLINARY)

Time: 2:00 Hours**Marks: 56****Instructions:**

1. Figure to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any four of the following questions.
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Q.1 Answer the following (any seven out of ten, each of **two marks)****14**

1. Draw the light path of phase contrast microscopy.
2. What is radioisotope? Define its uses.
3. Define application of CD spectroscopy.
4. Define Affinity chromatography.
5. Explain the contribution of Ernst Ruska.
6. Enlist the application and importance of electrophoresis.
7. Enlist the components used in agarose gel preparation.
8. Describe Raman effect.
9. What is HPLC? Define its importance.
10. What is blotting?

Q. 2 Answer the following (any two out of three, each of **seven marks)****14**

1. Explain autoradiography with suitable example.
2. Describe the fluorescence microscopy.
3. Discuss scanning electron microscopy.

Q.3 Answer the following**14**

1. Write a note on ion exchange chromatography. [5]
2. Define gel permeation chromatography. [5]
3. Explain types of chromatography techniques used in biology. [4]

OR

Q. 3 Answer the following (each of **seven marks)****14**

1. Define GC-MS.
2. Explain in detail high pressure liquid chromatography.

Q.4 (A) Answer the following (any two out of three, each of **five marks)****10**

1. Explain principle and application of Raman Spectroscopy.
2. What is Infrared Spectroscopy? describe in detail.
3. Describe CD spectroscopy and mention its application.

Q.4 (B) Answer the following (any One out of two)**04**

1. Write a note on UV-vis spectroscopy.
2. Discuss the mass spectroscopy.

Q.5 Answer the following (any two out of four, each of **seven marks)****14**

1. Explain Western Blotting techniques with suitable diagram.
2. What is isoelectric focusing? explain in detail
3. Write a note on SDS-PAGE.
4. Describe the basic principle and application of centrifuge.
