

M.Sc.(Chem.) Semester - 3 (CBCS) Examination**Oct/Nov. -2019– [OLD COURSE]****ADVANCE CHROMATOGRAPHIC TECHNIQUES (CORE)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q.1 Answer any seven of the following ten questions.**[14]**

1. Give the principal of chromatography.
2. What is isocratic system in HPLC?
3. Define the gradient system for analysis.
4. Enlist different separation techniques.
5. What is capacity factor?
6. Give work phenomena of degasser?
7. Give the principle of Ion Exchange chromatography.
8. Draw the schematic diagram of LCMS.
9. Give the principal of GCMS.
10. Give the characteristic of carrier gas in GC.

Q.2 Answer any Two of the following Three questions.**[14]**

1. Derive Rate theory.
2. Explain partition and adsorption chromatography with figure.
3. Discussion Instrumentation of HPLC.

Q.3 Answer the following questions.**[14]**

1. Explain ion-exchange chromatography with suitable example.
2. Give detail application of chromatography.

OR**Q.3 Answer the following questions.****[14]**

1. Give an account for columns used in gas chromatography.
2. Discuss Gel Permeation Chromatography.

Q.4 Answer any Three of the following five questions.**[14]**

1. Give detail application of hyphenated techniques.
2. Give difference between HPLC and GC?
3. Discuss instrumentation of HPTLC.
4. Explain Edge effect in TLC.
5. Describe UV detector with figure.

Q.5 Answer any two of the following four questions.**[14]**

1. Differentiate between TLC and HPTLC techniques
2. Discuss principle and theory of size exclusion chromatography.
3. Describe the different methods for preparation of TLC.
4. Derive plate theory in detail.
