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MSC3ACTC0110

Seat No: _____

M.Sc. Semester - 3 (CBCS) Examination

Oct/Nov. - 2018

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 Marks]

1. Explain the term chromatography.
2. Name the column used in GC. Give full form of SCOT and WCOT.
3. What is reverse phase chromatography? Give their advantages.
4. Briefly explain eddy diffusion in band broadening phenomenon.
5. Write Van Deemter equation for plate height and give the role of term used in it.
6. Give the name of gases used in GC. Why only inert gases are used in GC.
7. Explain split mode injection system in GC injection system.
8. Discuss the factors affecting the R_f value in planner chromatography.
9. Give an account of super critical fluid chromatography.
10. Give the principle of ion exchange chromatography.

Q.2 Answer any two of the following three questions.

[14 Marks]

1. Describe the functioning of HPLC in detail with diagram.
2. Explain various development techniques used in planner chromatography.
3. Write stepwise procedure for performing ascending paper chromatography.

Q.3 Answer the following questions.

[14 Marks]

1. Give the name of detectors used in GC. Describe flame ionization detector with diagram
2. Give the principle and explain instrumentation of LC-MS.

OR

Q.3 Answer the following questions.

[14 Marks]

1. Describe with diagram: Photo diode array detector.
2. Give the principle and explain instrumentation of GC-MS.

Q.4 Answer the following three questions.

[14 Marks]

1. Discuss the following
 - (a) Swelling in ion chromatography, (b) Types of exchangers in ion chromatography.
2. Give short introduction of size exclusion chromatography with symbolic representation.
3. Explain the terms with example (a) mobile phase (b) stationary phase

Q.5 Answer any two of the following four questions.

[14 Marks]

1. Discuss the RATE theory of chromatography in detail.
2. Why HP-TLC is more superior technique than TLC.
3. Give the principle and discuss experimental technique for gel permeation chromatography (GPC).
4. Discuss classification of chromatographic techniques with suitable examples.
