Enrollment No. _____

Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous)

Affiliated to Saurashtra University, Rajkot

SEMESTER END EXAMINATION APRIL – 2017

M. Sc. Chemistry

16PCECC06 – SEPARATION TECHNIQUES

Duration of Exam – 3 hrs ***Semester – II*** ***Max. Marks – 70***

***Part A** (5x2= 10 marks)*

Answer **ALL** questions

1. Define the following terms:
   i) Resolution
   ii) Chromatography
2. Give any eight visualizing agents for TLC.
3. What are the reverse phase chromatography and normal phase chromatography?
4. Give the characteristic of carrier gas in GC.
5. Enlist the component of LCMS.

***Part B** (5X5 = 25 marks)*

Answer **ALL** questions

6a. Classify chromatography according to mobile phase, stationary phase and attraction force.

OR

6b. Briefly derive the plate theory.

7a. Give difference between TLC and HPTLC.

OR

7b. How many types of ion exchange chromatography? Explain with equation.

8a. What are the dissimilarity between HPLC and GC?

OR

8b. Why chemical derivatization is needed in gas chromatography? Explain with examples.

9a. Explain flame ionization detector and thermal conductivity detector with figure.

OR

9b. How do you Interface GC with Mass spectroscopy techniques

10a. Explain principle and instrumentation of HPLC with schematic diagram.

OR

10b. Why impregnation necessary in TLC? Explain in detail.

Part C (5X7 = 35 marks)

Answer **ALL** questions

11a. Write a brief note on stationary phase of gas chromatography.

OR

11b. Derive rate theory in detail.

12a. How do you prepare manual column? Explain in detail.

OR

12b. Briefly explain affinity chromatography.

13a. Explain in detail instrumentation of high performance thin layer chromatography.

OR

13b. Write a brief note on adsorbent used in TLC.

14a. Briefly explain column of gas chromatography.

OR

14b. Give detail applications of hyphenated techniques.

15a. Explain UV and photodiode array detector with figure.

OR

15b. Explain Ion trap and quadrupole mass analyzer with figure.