

GUJARAT TECHNOLOGICAL UNIVERSITY
M.PHARM - SEMESTER-1 EXAMINATION – SUMMER-2019

Subject Code: MPG103T
Subject Name: Phytochemistry
Time: 02:30 PM TO 05:30 PM

Date: 01/06/2019

Total Marks: 80

Instructions:

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- | | | |
|------------|--|-----------|
| Q.1 | (a) Write a detailed note on methods used for labelling plants with radioactive substances. | 06 |
| | (b) Write a note on radioactive substances used for studying biosynthetic pathways. Mention their advantages and disadvantages. | 05 |
| | (c) Enumerate techniques used for identification of radiolabeled substances. Write note on any one technique. | 05 |
| Q.2 | (a) Write the detailed procedure for isolation of alkaloids from ephedra. | 06 |
| | (b) Which steroidal molecule is used for production of sex hormones? Write a note on biotransformation of it to various sex hormones. | 05 |
| | (c) Write the isolation and characterization of taxol. | 05 |
| Q.3 | (a) Explain the word “lead molecule”. What is the importance of clinical trials for lead molecules from plants? Enumerate the phases of clinical trials. | 06 |
| | (b) Explain in brief, phases of clinical trials. | 05 |
| | (c) What are the parameters of protocol design for clinical trials? | 05 |
| Q.4 | (a) Explain finger printing. How is High Performance Thin Layer Chromatographic technique helpful in finger printing. | 06 |
| | (b) Name the hyphenated planar chromatographic techniques used to determine molecular weight of separated compound. Explain the working of this instrument. | 05 |
| | (c) Write the working principle of instrument used for the analysis of volatile oil containing extracts. | 05 |
| Q.5 | (a) What is the effect on λ_{max} of luteolin when it is treated with specific reagents and then subjected to U V Spectrophotometer? Explain with diagrams of spectra. | 06 |
| | (b) Explain the structure elucidation of carvone. | 05 |
| | (c) Write a note on structural elucidation of caffeine. | 05 |
| Q.6 | (a) Write a detailed note on microwave assisted extraction. What are the advantages and disadvantages of this technique? | 06 |
| | (b) Write selection and optimization method of lead compounds from artemisin. | 05 |
| | (c) Write working principle of flash chromatography. Draw suitable diagram. | 05 |
| Q.7 | (a) Write a note on history of herbs as a source of lead molecules. Enumerate lead molecules obtained from plants. | 06 |
| | (b) Give examples of at least 5 synthetic molecules used in modern medicine whose lead molecules were obtained from plants. | 05 |
| | (c) Write structural elucidation of citral. | 05 |