

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**M. PHARM. - SEMESTER – I • EXAMINATION – WINTER 2012**

**Subject code: 910105****Date: 09/01/2013****Subject Name: Chemistry of Medicinal Natural Products****Time: 10.30 am - 01.30 pm****Total Marks: 80****Instructions:**

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

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|------------|-----|--|-----------|
| <b>Q.1</b> | (a) | What is the difference between synthesis and biosynthesis? Enlist and explain the tracer techniques used in plants to elucidate biosynthetic pathways. | <b>06</b> |
|            | (b) | Write in detail biogenesis of indole alkaloids and tropane alkaloids.  | <b>05</b> |
|            | (c) | Explain in detail the biogenesis of phytosteroids and terpenoids.  | <b>05</b> |
| <b>Q.2</b> | (a) | Write in detail about shikimic acid pathway.   | <b>06</b> |
|            | (b) | Write in detail biogenesis of triglycerides.   | <b>05</b> |
|            | (c) | Enlist conventional extraction methods. Explain any two of them.   | <b>05</b> |
| <b>Q.3</b> | (a) | Explain in detail microwave-assisted extraction method.  | <b>06</b> |
|            | (b) | Give a detailed explanatory note on supercritical fluid extraction method.   | <b>05</b> |
|            | (c) | Give a note on successive solvent extraction method.   | <b>05</b> |
| <b>Q.4</b> | (a) | Define and classify terpenoids. Write structure elucidation of taxol.  | <b>06</b> |
|            | (b) | Define and classify resins. Give isolation methods and biological activities of podophyllotoxin.   | <b>05</b> |
|            | (c) | Define, classify and give isolation methods of alkaloids and glycosides.   | <b>05</b> |
| <b>Q.5</b> | (a) | Write detailed structure elucidation of penicillin and streptomycin.   | <b>06</b> |
|            | (b) | Write an explanatory note on isolation, stereochemistry and structure elucidation of calanolides.  | <b>05</b> |
|            | (c) | Explain in detail stereochemistry, structure elucidation and biological activity of glycyrrhetic acid.   | <b>05</b> |
| <b>Q.6</b> | (a) | Give definition, classification and properties of carbohydrates and lipids.  | <b>06</b> |
|            | (b) | Write down structure elucidation of camptothecin and vincristine.  | <b>05</b> |
|            | (c) | Write down and compare structure elucidation of one reducing and one non-reducing disaccharide sugars.   | <b>05</b> |
| <b>Q.7</b> | (a) | Give advantages of advanced extraction method over conventional extraction methods.  | <b>06</b> |
|            | (b) | What are immunoglobulins? Classify them with their specific properties and examples.   | <b>05</b> |
|            | (c) | Give applications of immunoglobulins obtained from natural sources.  | <b>05</b> |