

(Following Paper ID and Roll No. to be filled in your  
Answer Books)

**Paper ID : 150806**

Roll No.

**B. PHARM.**

**Theory Examination (Semester-VIII) 2015-16**

**NATURAL PRODUCTS**

*Time : 3 Hours*

*Max. Marks : 100*

**Section-A**

**1. Attempt all questions of this section. All questions carry equal marks. (2×10=20)**

- (a) Give the identification tests for alkaloids.
- (b) Differentiate between biosynthesis and biogenesis with examples.
- (c) What are lignans?
- (d) Define isoprene rule.

- (e) Name the alkaloids derived from tryptophan.
- (f) Write the Von Braun method for identification of secondary cyclic amines.
- (g) Give the structure and biological source of morphine.
- (h) Enumerate various methods for isolation of essential oils.
- (i) Give any four herbal drugs used as immunomodulator.
- (j) Write the differences between sesquiterpenes and diterpenes with examples.

**Section-B**

**2. Attempt any five questions from this section. All questions carry equal marks. (10×5=50)**

- (a) Describe the EMF and Shikimic acid pathways.
- (b) What are the recent developments of natural products used as anticancer agents?
- (c) Define glycosides and give the structure elucidation of digitoxin.

- (d) Give general methods for structural determination of terpenes.
- (e) Write note on (any two)
- i) Herbal cosmetics
  - ii) Natural allergens
  - iii) Photosensitizing reactions
- (f) Write the extraction, isolation and chemistry of flavonoids.
- (g) Discuss the chemical and spectral approaches in identification of simple molecule of natural origin.
- (h) Describe the biogenesis and chemistry of Quinine.

**Section-C**

3. **Attempt any two questions. All questions carry equal marks.** **(15×2=30)**

- (a) Define and classify alkaloids with suitable examples. How will you elucidate the structure of Atropine?

- (b) What are terpenoids? Classify them with suitable example. Give the structure elucidation of (3- carotene.
- (c) Discuss the extraction, isolation and chemistry of Diosgenin and Sarsapogenin.

