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MPC 104 T

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2023

M.Pharm. 1<sup>st</sup> Semester (Regular) End-Term Examination

Pharmaceutical Chemistry

CHEMISTRY OF NATURAL PRODUCTS (Theory)

(New Regulations)

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks for the questions.

Draw the structures wherever necessary.

1. Answer *all* the questions : (10 × 2 = 20)
- Define  $\beta$  - Lactam antibiotics and write one structure.
  - Write a note on oral contraceptives.
  - What are flavonoids? Give the structure of quercetin
  - Explain a brief note on Hybridoma technology.
  - Write the structural difference between etoposide and teniposide.
  - Write the stereochemistry of ephedrine.
  - Define and classify alkaloids.
  - Short notes on Niacin.
  - Write the uses of vitamin C and E.
  - Give a brief note on phenanthrene alkaloids.

[Turn over

2. Answer any *seven* questions :

(7 × 5 = 35)

(a) Match the following crude drugs with their active constituents

	Group A		Group B
(i)	<i>Panax quinquefolius</i>	(1)	Carbapenem
(ii)	<i>Chondrodendrontomentosum</i>	(2)	Ergot
(iii)	<i>Podophyllum peltatum</i>	(3)	Ginsenoside
(iv)	<i>Streptomyces cattleya</i>	(4)	d-Tubocurarine
(v)	<i>Claviceps purpurea</i>	(5)	Etoposide

- (b) Write a note on Recombinant DNA technology.
- (c) Describe the isoprene rule in detail with suitable example.
- (d) Discuss the chemistry and Physiological significance of Vitamin A.
- (e) Write a note on Anti-malarial drugs.
- (f) Explain the clinical application and recent advances in gene therapy.
- (g) Discuss the crude drug used for liver dysfunction.
- (h) Characterize Morphine using IR,  $^1\text{H}$ ,  $^{13}\text{C}$ NMR and MS Spectroscopy.
- (i) Elaborate the general methods of structural determination of ephedrine.

3. Answer the following questions (any *two*):

(2 × 10 = 20)

- (a) (i) Discuss in brief about the stereochemistry and nomenclature of steroids. (5+5)
- (ii) Write the chemistry of cardiac glycosides.
- (b) Explain in detail about the chemistry of erythromycin and its modifications with structures. (4+6)
- (c) Classify terpenoids. Write the structural elucidation of citral and phytol. (2+4+4)