

SARDAR PATEL UNIVERSITY

M.Sc. (Chemistry), Semester – IV

November 19, 2019 :: Tuesday

Time: 02:00 P.M. – 05:00 P.M.

NATURAL PRODUCTS [PS04CORC02] :: (OLD COURSE)

Note: Figures to the right indicate full marks.

Total marks: 70

Q-1 Select the correct answer and mention only the code of correct answer against their question numbers. [08]

- a. Night blindness is due to the deficiency of _____
 (i) Vitamin A₁ (iii) Vitamin B₆
 (ii) Vitamin B₁ (iv) Vitamin H.
- b. The basic heterocyclic moiety present in Mahanimbine is _____
 (i) Carbazole (iii) Pyrimidine
 (ii) Quinoline (iv) Phenanthrene
- c. β -Eudesmol is an example of _____
 (i) monoterpenoid (iii) diterpenoid
 (ii) sesquiterpenoid (iv) triterpenoid
- d. Deficiency of Vitamin-C causes _____
 (i) beri-Beri (ii) scurvy (iii) night blindness (iv) none of above
- e. Position of side chain in Cholesterol is at _____
 (i) C-13 (iii) C-25
 (ii) C-20 (iv) C-17
- f. Codiene on CrO₃ oxidation gives _____
 (i) thebaine (ii) codienone (iii) morphenol (iv) none of above
- g. The Bile acid secreted in _____
 (i) heart (iii) intestine
 (ii) kidney (iv) liver
- h. Morphine when heated with conc.HCl gives _____
 (i) apomorphine (ii) morphol (iii) methyl morphol (iv) codeine

Q-2 Answer ANY SEVEN of the following in short. [14]

- a. Discuss briefly on Emde modification.
 b. Write the synthesis of Vitamin-A₁.
 c. How will you convert morphine into morphol?
 d. Write a short note on Bile acids.
 e. Write the conversion of (+)-longifolene to (-)-longifolene.
 f. Explain the Barbier-Wieland degradation with suitable example.
 g. Write a short note on Zeisel's method.
 h. β -eudesmol is a bicyclic compound. Justify.
 i. How will you convert D-Glucose into Vitamin-C.

- Q-3 [A] Thiamine upon sodium sulphite cleavage gives an acid A and base B. Discuss the structure of base-B and give it's synthesis. [06]
- Q-3 [B] Discuss the structure of Biotin (Vitamin H) [06]
- OR
- Q-3 [B] Discuss the structure of pyridoxine (Vitamin B₆) and give it's synthesis. [06]
- Q-4 [A] Write the synthesis of Reserpine. [06]
- Q-4 [B] Discuss the structure of Mahanimbine and give it's synthesis. [06]
- OR
- Q-4 [B] Answer the following. [06]
- (i) Discuss the position of cyclic ether linkage present in morphine.
- (ii) Discuss the structure of methyl morphol.
- Q-5 [A] Discuss Campbell and Soffer's work for establishing position of double bonds in Cadinene. [06]
- Q-5 [B] Discuss the position of double bond and tertiary hydroxyl group in β -eudesmol [06]
- OR
- Q-5 [B] Discuss the biogenesis of mono and sesquiterpenoids. [06]
- Q-6 [A] Discuss the position of -OH group and double bond in Cholesterol. [06]
- Q-6 [B] Give the chemical evidence for nature and position of side chain present in Cholesterol. [06]
- OR
- Q-6 [B] Answer the following [06]
- (i) Write the synthesis of Oesterone.
- (ii) Give the evidence for the position of angular methyl group at C-10 in cholesterol.

