

DEPARTMENT OF SCIENCES,  
IV SEMESTER M. Sc. (CHEMISTRY)  
END SEMESTER EXAMINATIONS, JUNE 2021

Chemistry of Natural Products [CHM 5013]

Scheme of Valuation

- 1A. Any 3 difference between Hoffmann and von-Brown degradation reaction  
– 1M each
- 1B. Structural variations observed in Vitamin A isomers      1M  
Any two differences by chemical tests      1M each
- 1C. Correct structure  
(a) 2 equivalents of acetyl chloride      - 1M  
(b) 1 equivalent of MeI      - 1M  
(c) oxidized product consumes 1 equivalent of 2,4-DNP      - 1M  
(d) basic skeleton resembles pyridine      - 1M
- 2A. Tests used for any 2 types of the carbonyl group in terpenoids      1M each  
Explanation -M
- 2B. Chemical tests to distinguish primary, secondary and tertiary amines  
– 1M each
- 2C. General reaction for the preparation of flavones and isoflavones – 2M each
- 3A. Emde degradation product of each molecule – 1M each
- 3B. Baker-Venkatraman synthesis – 2M  
Explanation for synthesis of isoflavonoids – 1M
- 3C. Correct answer for a to d – 1M each
- 4A. qualitative and quantitative analysis (isolated and conjugated C=C bond)  
- 1.5 M each
- 4B. Any 2 chemical reactions to differentiate Menthol and menthone      2M  
inter-conversion – 1M
- 4C. Product formed with (a) ethane (b) ozone and (c) acetyl chloride  
1+0.5+0.5 M each molecule
- 5A. Proper reasoning for 3 statement – 1M each
- 5B. general method of isolating terpenoids from plant source - 3 steps – 1M each
- 5C. Correct solution for A to D - 1M each

- 6A Nature of heteroatom – Any 3 types – 1M each
- 6B Any one difference for the functional groups – 1M each
- 6C Any 2 difference between - 1M each
- (i) epiphasic and hypophasic carotenoids
  - (ii) xanthophylls and carotenes

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