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PY 132409

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2019

B.Pharm. 4th Semester End-Term Examination

**PHARMACEUTICAL CHEMISTRY — IV (ORGANIC
CHEMISTRY – III)**

(Old Regulation)

Full Marks – 100

Time – Three hours

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

1. Multiple choice questions (MCQS) : (10 × 1 = 10)
- (i) Fatty acids are
- (a) Unsaturated dicarboxylic acid
 - (b) Long chain alkanolic acids
 - (c) Aromatic carboxylic acid
 - (d) Aromatic dicarboxylic acid
- (ii) Alkaline hydrolysis of oils (or fats) are called
- (a) Saponification
 - (b) Fermentation
 - (c) Diazotization
 - (d) Rancidification

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- (iii) Upon hydrolysis proteins give
- (a) Hydroxy acids (b) Fatty acids
(c) Amino acids (d) Alcohols
- (iv) Which of the following is the main structural feature of proteins.
- (a) Peptide linkage (b) Ester linkage
(c) Ether linkage (d) α - β linkage
- (v) The sugar that yields only glucose on hydrolysis is
- (a) Lactose (b) Sucrose
(c) Maltose (d) Fructose
- (vi) Furan reacts with ammonia in the presence of alumina at 400°C to give
- (a) pyridine (b) furfural
(c) pyrrol (d) furoic acid
- (vii) Pyridine reacts with HCl to form
- (a) Pyridinium chloride
(b) 2-chloro pyridine
(c) 3-chloro pyridine
(d) All of these
- (viii) Which of the following five membered rings is most resonance stabilized?
- (a) Furan (b) Thiophene
(c) Pyrrole (d) Pyridine

- (ix) Electrophilic substitution in furan usually occurs at
- (a) The O atom
 - (b) The C(3) atom
 - (c) The C(2) atom
 - (d) Both the C(2) and C(3) atoms
- (x) Histamine is a derivative of
- (a) Pyridine
 - (b) Purine
 - (c) Imidazole
 - (d) Pyrrole

2. Answer the following questions (any six) :

(6 × 15 = 90)

- (a) Define mutarotation. How will you distinguish between glucose and fructose? Convert aldose to its epimer and aldohexose to aldopentose.
(4+4+4+3=15)
- (b) Write note on : (6+6+3)
- (i) Polysaccharides
 - (ii) Mannich reaction
 - (iii) Zwitter ion.
- (c) What are proteins? What is the importance of proteins? Discuss the structure of proteins.
(3+4+8=15)
- (d) Write the following reaction with mechanism (any three) : (3×5=15)
- (i) Benzoin condensation reaction
 - (ii) Beckmann rearrangement
 - (iii) Claisen condensation
 - (iv) Diels-Alder reaction.

- (e) Discuss Skraup quinoline synthesis. Describe important chemical reactions of quinoline. Explain why pyridine is more basic than pyrrole. (5+8+2=15)
- (f) Explain the aromaticity of pyridine. How pyrrole is synthesized? Write four important chemical reactions of pyrrole. (3+4+8)
- (g) Give in details about fats and oils with structure. (15)
- (h) Write five important chemical reactions of each of the following compound : (3×5=15)
- (i) Furan
 - (ii) Imidazole
 - (iii) Thiazole.
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