

Question Paper

Exam Date & Time: 05-Jul-2023 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal College of Pharmaceutical Sciences

B.Pharm Semester II , End Semester Examination

Pharmaceutical Organic Chemistry I [PCH-BP202T-S1]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Which of the following is incorrect for primary amines? (1)
- [On reaction with nitrous acid alkylamines produce alcohol](#)
- [On reaction with nitrous acid arylamines produce phenol](#)
- [Alkylamines are more basic than ammonia](#)
- [Alkylamines are more basic than arylamines](#)
- 2) Which of the following is formed when an aryl primary amine reacts with nitrous acid? (1)
- [Alkyl nitrite](#)
- [Secondary amine](#)
- [Nitroalkane](#)
- [Benzene diazonium chloride](#)
- 3) Which of the following is a secondary amine? (1)
- [Aniline](#)
- [N-Methylaniline](#)
- [N,N-Dimethylaniline](#)
- [Trimethylaniline](#)
- 4) An aqueous NaOH solution is added to a mixture of benzaldehyde and formaldehyde to produce. (1)
- [benzyl alcohol + sodium formate](#)
- [sodium benzoate + methanol](#)
- [benzyl alcohol + methanol](#)
- [sodium benzoate + sodium formate](#)
- 5) As a result of Wolff-Kishner reduction, the following conversions can be made: (1)
- [Benzaldehyde into Benzyl alcohol](#)
- [Cyclohexanol into Cyclohexane](#)
- [Cyclohexanone into Cyclohexanol](#)
- [Benzophenone into Diphenylmethane.](#)

6) The formation of cyanohydrin from a ketone is an example of: (1)

- [electrophilic addition](#)
- [nucleophilic addition](#)
- [nucleophilic substitution](#)
- [electrophilic substitution](#)

7) How can Pentan-2-one and Pentan-3-one be differentiated? (1)

- [Iodoform test](#)
- [Benedict's test](#)
- [Fehling's test](#)
- [Tollen's test](#)

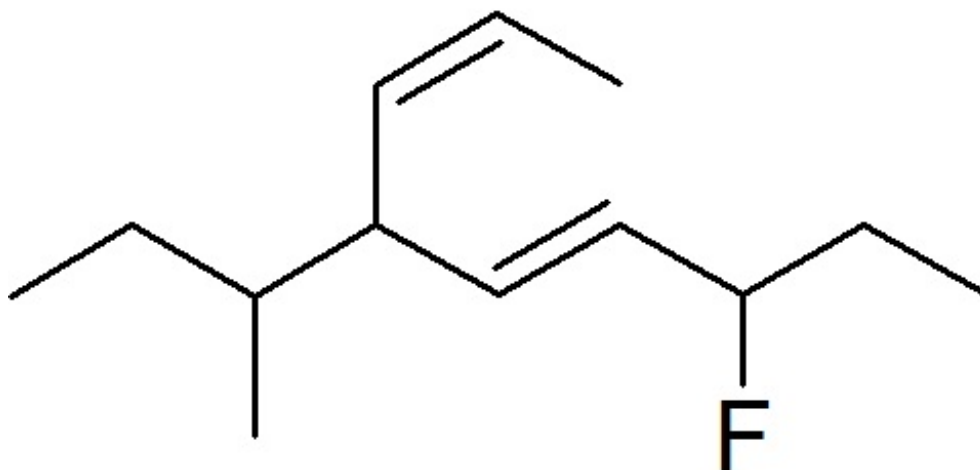
8) Which compound is obtained when acetaldehydes are treated with a dilute solution of caustic soda? (1)

- [Sodium acetate](#)
- [Resinous mass](#)
- [Aldol](#)
- [Ethyl acetate](#)

9) Acetaldehyde cyanohydrin on acid hydrolysis yields (1)

- [Tartaric acid](#)
- [Propanoic acid](#)
- [Lactic acid](#)
- [Valeric acid](#)

10) The IUPAC name for the following compound is (1)



- [4-\(butan-2-yl\)-7-fluoronona-2,5-diene](#)
- [5-\(pentan-3-yl\)-7-fluoronona-2,6-diene](#)
- [3-\(butan-2-yl\)-6-fluoronona-2,4-diene](#)
- [4-\(butan-3-yl\)-8-fluoronona-2,5-diene](#)

11) The combustion of pentane produces (1)

- [CO₂ + H₂O](#)
- [HCl + H₂O](#)
- [Pentene](#)
- [Pentyne](#)

- 12) A tertiary carbon is bonded directly to (1)
- [2 Hydrogens](#)
 - [2 Carbons](#)
 - [3 Carbons](#)
 - [4 Carbons](#)
- 13) Which of the following statements applies to the E2 mechanism? (1)
- [It occurs with inversion of stereochemistry.](#)
 - [It occurs with racemization of stereochemistry.](#)
 - [It proceeds through the more stable carbocation intermediate.](#)
 - [The C-H and C-X bonds that break must be anti.](#)
- 14) Which compound is least acidic? (1)
- [FCH₂CO₂H](#)
 - [ClCH₂CO₂H](#)
 - [BrCH₂CO₂H](#)
 - [ICH₂CO₂H](#)
- 15) Aspirin is an acetylation product of (1)
- [O-hydroxybenzoic acid](#)
 - [O-dihydroxybenzene](#)
 - [m-hydroxybenzoic acid](#)
 - [p-dihydroxybenzene](#)
- 16) Alkyl halides react with metallic sodium in dry ether producing? (1)
- [Alkanes with same number of carbon atoms](#)
 - [Alkanes with double the number of carbon atoms](#)
 - [Alkenes with triple number of carbon atom](#)
 - [Alkenes with the same number of carbon atoms.](#)
- 17) Freon 12(CCl₂F₂) is used as a (1)
- [Local anaesthetic](#)
 - [Drycleaning agent](#)
 - [Refrigerant](#)
 - [Disinfectant](#)
- 18) Oxidation test of alcohol using KMnO₄ in presence of acetic acid is called as (1)
- [Ritter Test](#)
 - [Esterification](#)
 - [Lucas test](#)
 - [Victor meayer test](#)
- 19) Vinegar contains the following carboxylic acid (1)
- [Citric acid](#)
 - [Ethanoic acid](#)
 - [Nitric acid](#)
 - [Methanoic acid](#)
- 20) The irritation caused by red ants bite is due to (1)

[Uric acid](#)
[Acetic acid](#)
[Lactic acid](#)
[Formic acid](#)

II Long Answers

Answer all the questions.

- 1) A. Write the structure for the following IUPAC names. (10)
- a) Hexane
 - b) 1-methyl pentane
 - c) 1-Heptene
 - d) Butan-2-ol
 - e) Propanone
- B. Explain the concept of isomerism with their classifications. (5+5=10 Marks)
- 2) A. Discuss the free radical mechanism in the case of halogenation of alkanes. (10)
- B. Explain Diels-Alder Reaction. (7+3=10 Marks)

III Short Answers

Answer all the questions.

- 1) Give any five reactions for aldehydes and ketones. (5)
- 2) Explain the mechanism involved in the Aldol condensation with suitable example. (5)
- 3) Compare the basicity of aliphatic and aromatic amines giving suitable examples. (5)
- 4) Write the comparison of SN1 and SN2 reactions. (5)
- 5) Explain the preparation of alcohol from alkyl halide and from Grignard reagent. (5)
- 6) Explain the acidity of acetic acid. Explain the Effect of substituents on it. (5)
- 7) Write the structure, IUPAC name and medicinal uses for the following compounds. (5)
- a) Oil of wintergreen b) Benzoic acid c) Chlorobutanol d) Aspirin

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