Exam Date & Time: 16-Dec-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Pharmaceutical Organic Chemistry II [PCH-BP301T - S3]

Marks: 75 **Duration: 180 mins.**

I Multiple Choice Questions (MCQs)

Answer all the questions. Section Duration: 30 mins

1) Cleansing action of soap occurs due to

1)	the micelle formation between hydrophobic chain of soap and grease	2)	the micelle formation between hydrophilic chain of soap and grease	3)	the micelle formation between on both sides of soap with grease	4)	soap dissolves grease does not involve micelle formation	(1)

2) A butter substituent made from vegetable oils is:

1)	lard	2)	shortening	3)	margarine	4)	trans fat	(1)

3) The major intermolecular force between two long chain fatty acids:

1)	dipolar interactions	2)	covalent bond	3)	Van der Waals interactions	4)	hydrogen bonding	(1)

4) One of the following analytical constants help in determining the average molecular weight of the fatty acids in the given oil sample:

1)	acid value	2)	Iodine value	3)	ester value	4)	saponification value	(1)

5) Bromination of biphenyl gives one of the following as major product

1)	4-bromobiphenyl	2)	2-bromobiphenyl	3)	4:2-dibromoiphenyl	4)	4:4'-dibromophenyl	(1)

6) propyl gallate is added to foods containing oils and fats.

1)	as a flavouring agent	2)	as an anti-oxidant	3)	as a colouring agent	4)	as an emulsifying agent	(1)

7) Temporary dipole moment created in atoms are responsible for

1)	water solubility nature	2)	dipolar interactions	3)	covalent bond formation	4)	Van der Waal forces	(1)

8) The number of hydroxyl groups in a fat can be calculated by using:

1)	acid value	2)	Reichert Meissl value	3)	acetyl value	4)	ester value	(1)

9) Melting point of fat is _____ and melting point of oil is _____

1)	higher, higher	2)	lower, lower	3)	higher, lower	4)	lower, lower	(1)

10) Reichert Meissl value is an indicator of amount of

1)	water insoluble fatty acids	2)	volatile & water soluble fatty acids	3)	glycerol content	4)	free fatty acid content	(1)

11) In benzene each π bond has

1)	two electrons	2)	four electrons	3)	six electrons	4)	eight electrons	(1)

12) The protons on sp2 hybridized carbons in aromatic hydrocarbons are highly deshielded and absorb at

1)	5.5-6 ppm	2)	6.5-8 ppm	3)	3.5-4 ppm	4)	2.5-5 ppm	(1)

13) In benzene the unhybridised p-orbitals overlap sideways to form (1)

1) ionic bond	2) hydrogen bond	3) sigma bond	4) pi bond

14) Amines can be thought of as alkyl derivatives of (1)

1) amino acid	2) ammonia	3) aniline	4) phenol

15) Phenols are acidic because pKa value for phenol is (1)

1) 10	2) 1	3) 7	4) 3

16) When bromine water is added to aqueous solution of phenol ..... of tribromophenol is formed. (1)

1) brown precipitate	2) black precipitate	3) white precipitate	4) red precipitate

17) .....also known as gamma-hexachlorocyclohexane is used as an agricultural insecticide (1)

1) Lindane	2) Lignocaine	3) Gammane	4) Xidane

18) Electron-releasing groups..... the benzene ring towards further reaction. (1)

1) deactivate	2) activate	3) supress	4) have no effect on

19) tert-butylbenzene is..... times as reactive as benzene toward nitration. (1)

1) 10	2) 2	3) 16	4) 100

20) Methyl ketone can be converted to carboxylic acids via the (1)

1) haloform reaction	2) methylation	3) reduction reaction	4) nitration reaction

II Long Answers

Answer all the questions.

1) a) Explain the general methods of preparation and reactions of phenols. 5 marks
b) Discuss acidity of carboxylic acids. 5 marks (10)

2) a) Give the principle involved in the estimation of: i) Iodine value ii) acid value 5 marks
b) Define Iodine number, acid value and saponification value with mentioning their importance. 5 marks (10)

III Short Answers

Answer all the questions.

1) Explain the theory of reactivity in electrophilic aromatic substitution of benzene (5)

2) Discuss with mechanism, the substitution reactions of phenanthrene (5)

3) Explain the theory of resonance in Benzene. What are the criteria for aromaticity? (5)

4) Explain Friedel-crafts reaction of benzene with mechanism. Give its application. (5)

5) Give any one method of synthesis of biphenyl and naphthalene (5)

6) Explain the stability of cyclohexane by taking Bayer's strain theory and Sachse-More theory (5)

7) Explain the reactions of amines. Discuss the effect of substituents on basicity of amines (5)

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