

Exam Date & Time: 25-Apr-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Pharmaceutical Organic Chemistry II [PCH-BP301T - S2]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

1) chlorine is a gas whereas bromine is a liquid due to

1) dipolar interactions	2) present in the same group	3) Van der Waals interactions	4) hydrogen bonding	(1)
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2) One of the following is an example for trans fat:

1) elaidic acid	2) oleic acid	3) stearic acid	4) linoleic acid	(1)
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3) Which of the following oil or fat does not undergo saponification?

1) olive oil	2) coconut oil	3) mineral oil	4) butter fat	(1)
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4) One of the following statements is wrong on unsaturated fatty acids

1) presently mainly in oils	2) have lower melting points	3) fatty acid chains have kinks	4) not good for health	(1)
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5) Chlorination of biphenyl gives one of the following as major product

1) 4-chlorobiphenyl	2) 2-chlorobiphenyl	3) 4:2-dichlorobiphenyl	4) 4:4'-dichlorobiphenyl	(1)
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6) One of the following compounds has greater stability than the remaining three:

1) benzene	2) naphthalene	3) anthracene	4) phenanthrene	(1)
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7) One of the following statements is incorrect on intermolecular forces:

1) attractive forces between molecules	2) do not make new compounds	3) makes the molecules "sticky"	4) stronger than true "bonds"	(1)
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8) cyclohexane has greater stability although it has deviation from the normal bond angle in a planar structure:

1) due to its different shape	2) itself it is stable	3) it is stable in planar structure	4) because of six membered nature	(1)
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- 9) Melting point of fat is _____ and melting point of oil is _____

1) higher, higher	2) lower, lower	3) higher, lower	4) lower, lower
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 (1)
- 10) Which one of the following is an example for fats?

1) glyceryl trioleate	2) vegetable ghee	3) coconut oil	4) groundnut oil
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 (1)
- 11) Phthalein dye test is used to identify

1) Carboxylic acid	2) ester	3) phenol	4) primary amine
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 (1)
- 12) Arenediazonium ions react with highly reactive aromatic compounds such as phenol and aromatic tertiary amines. The reaction is called

1) Diazotization reaction	2) Diazo coupling reaction	3) Nucleophilic aromatic substitution reaction	4) Rearrangement reaction
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 (1)
- 13) Phenol is prepared from.....by Dow's process

1) Ammonia	2) chlorobenzene	3) Triphenyl methane	4) dichloromethane
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 (1)
- 14) If there is a nitro group substituted on phenol, it willthe acidic nature of phenol.

1) decrease	2) increase	3) destroy	4) have no effect on
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 (1)
- 15) BHC is an organochlorine chemical and an isomer of

1) hexachlorocyclohexane	2) hexahydrocyclohexane	3) hexacyclochlorohexane	4) hexylcyclochlorobenzene
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 (1)
- 16) Hydroxytoluene is

1) Methoxyphenol	2) ethoxyphenol	3) cresol	4) methoxybenzene
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 (1)
- 17) NaBH_3CN andare especially effective in reductive aminations

1) LiOBH_3CN	2) LiBH_3NCN	3) LiBH_3CN	4) LiBH_3SCN
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 (1)
- 18) sulphonic acid group is a

1) strongly activating group	2) moderately activating group	3) weakly activating group	4) deactivating group
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 (1)
- 19) The delocalisation of π -electrons, results, in the..... in energy, and hence, accounts for the stability of benzene molecule.

1) increase	2) decrease	3) no change	4) constant flow
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 (1)
- 20) Saccharin is about times as sweet as sucrose

1) 100-200	2) 600-800	3) 30-40	4) 300-400
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 (1)

II Long Answers

Answer all the questions.

- 1) a) What are the differences between oils and fats? 2 marks
 b) What is hydrogenation of oils? Write a note on trans fats. 3 marks
 c) Discuss the Haworth synthesis of naphthalene. Give its substitution reactions. (3+2) marks (10)
- 2) In Electrophilic aromatic substitution explain in detail the theory of reactivity and orientation of groups in monosubstituted benzene. Give the structure and uses of DDT and Chloramine. (10)

III Short Answers**Answer all the questions.**

- 1) Explain the criteria for aromaticity. Discuss resonance in benzene (5)
- 2) How will you convert nitro compounds to aromatic amines? Discuss basicity of amines and the effect of substituent groups on basicity. (5)
- 3) Explain the methods of preparation and qualitative tests for phenol. (5)
- 4) Explain the structure of benzene with a neat orbital diagram (5)
- 5) a) Why Sulfonation of naphthalene at high temperature yields Naphthalene-2-sulfonic as a major product than Naphthalene-1-sulfonic acid. 2 Marks (5)
b) What is Coulson-Moffitt model? Explain with example 3 Marks
- 6) a) What is heat of combustion? Mention its importance 2 Marks (5)
b) What types of strains are present in cyclopropane? Justify your answer 3 Marks
- 7) a) Discuss the mechanism of rancidity of oils. 3Marks (5)
b) Give the oxidation and reduction reactions of naphthalene. 2Marks

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