

Exam Date & Time: 16-Sep-2021 (01:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

B.Pharm Semester II End semester examination
Pharmaceutical Organic Chemistry-I [PCH-BP202T]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

Answer all questions

- 1) The nucleophilic addition reactions of aldehydes are carried out in following medium if the incoming nucleophile is weak (1)

1) Neutral	2) Acidic	3) weakly basic	4) extremely basic
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- 2) What is the correct order of reactivity of the following towards nucleophilic addition? (1)

1) Formaldehyde > Acetaldehyde > Acetone	2) Acetone > Acetaldehyde > Formaldehyde	3) Formaldehyde > Acetone > Acetaldehyde	4) Acetaldehyde > Formaldehyde > Acetone
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- 3) Which of the following compounds do not give Aldol condensation reactions? (1)

1) formaldehyde	2) acetaldehyde	3) diethyl ketone	4) propionaldehyde
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- 4) Cannizzaro's reaction is not given by the following compound (1)

1) formaldehyde	2) acetaldehyde	3) benzaldehyde	4) trimethyl acetaldehyde
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- 5) In which of the following reactions new carbon-carbon bond is not formed (1)

1) Aldol condensation	2) Perkin reaction	3) Cannizzaro's reaction	4) Benzoin condensation
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- 6) Shape and type of hybridization found in methyl cation (CH_3^+) are (1)

1) Trigonal pyramidal and sp^2	2) Trigonal planar and sp^2	3) Trigonal pyramidal and sp^3	4) Trigonal planar and sp^3
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- 7) Which of the following statements is not correct (1)

1) A sigma bond is weaker than a pi bond	2) A sigma bond is stronger than a pi bond	3) A double bond is stronger than a single bond	4) A double bond is shorter than a single bond
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- 8) The discoverer of peroxide effect in alkene addition (1)

1) Markonikov	2) Zaitsev	3) Vladimir Ivanov	4) Kharasch
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- 9)  (1)

The IUPAC name for the given organic compound is

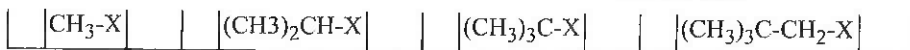
1) Bicyclo[4,3,2]decane	2) Bicyclo[4,3,2]undecane	3) Bicyclo[3,4,2]undecane	4) Bicyclo[2,3,4]undecane
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- 10) Natural rubber is made up of (1)

1) Polyisoprene units	2) poly nuclear hydrocarbons	3) Isoprene units	4) Iso allyl alcohol units
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- 11) Which alkyl halide out of the following may follow both $\text{S}_{\text{N}}1$ and $\text{S}_{\text{N}}2$ mechanism? (1)

1)	2)	3)	4)
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12) The alkyl halides are considered to be very reactive compounds towards nucleophile because

1) they have an electrophilic carbon & a bad leaving group	2) they have a nucleophilic carbon & a good leaving group	3) they have an electrophilic carbon	4) they have an electrophilic carbon & a good leaving group
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13) A tribasic acid is

1) Oxalic acid	2) Tartaric acid	3) Lactic acid	4) Citric acid
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14) In primary alkyl halides, carbon attached to the halogen atom is further attached to how many carbon atoms?

1) 1	2) 2	3) 3	4) 4
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15) What makes a lemon sour?

1) Tartaric acid	2) Oxalic acid	3) Citric acid	4) Hydrochloric acid
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16) Most acidic compound is

1) $\text{FCH}_2\text{CO}_2\text{H}$	2) $\text{ClCH}_2\text{CO}_2\text{H}$	3) $\text{BrCH}_2\text{CO}_2\text{H}$	4) $\text{ICH}_2\text{CO}_2\text{H}$
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17) The irritation caused by red ants bite is due to

1) Uric acid	2) Acetic acid	3) Lactic acid	4) Formic acid
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18) An anticoagulant is

1) Salicylic acid	2) Acetyl salicylic acid	3) Methyl salicylate	4) Benzoic acid
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19) Carboxylic acids are more acidic than alcohol because of

1) Intermolecular hydrogen bonding	2) Formation of dimers	3) Highly acidic hydrogen	4) Resonance stabilization of their conjugate base.
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20) Alkaline hydrolysis of chloroform gives

1) Acetic acid	2) Citric acid	3) Formic acid	4) Valeric acid
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II Long Answers

Answer all the questions.

Answer all questions

- What is peroxide effect? Explain the mechanism of peroxide initiated free radical addition to alkenes with a suitable example. [1+4=5]
 - Explain the formation of SP^3 hybrid orbitals using methane as a model. [3]
 - Explain stereochemistry of E_2 reactions with suitable illustration. [2]
- Explain the SN_2 reaction mechanism and write down the factor affecting SN_1 and SN_2 reactions. (10)

III Short Answers

Answer all the questions.

Answer all questions

- Write the structures for the following IUPAC names
 - 2,3-Dimethyl-6-(2-methylpropyl)decane
 - 3-Ethyl-2,2 dimethylhept-3-ene
 - Pent-4-en-1-ol
 - 5-Oxo octanoic acid
 - Dispiro[4.2.4.2] tetradecane [1x5=5]
- What is isomerism? Classify structural isomerism with one example each class. [1+4=5] (5)
- How will you prepare 2-hydroxy-1,2-diphenyl ethanone from Benzaldehyde? Construct a suitable reaction mechanism with proper explanations. (5)
- Write the structure and one use each for the following compounds. (5)
 - Chloral hydrate
 - Hexamine
 - Vanillin
 - Paraldehyde
- Write the structure and medicinal uses for the following compounds (5)
 - Chlorobutanol
 - Benzoic acid
 - Aspirin
 - Trichloroethylene

- 6) Explain the effect of substituents on the acidity of carboxylic acids. (5)
- 7) Explain the general preparations for the following (5)
- A. Alkyl halides from alcohol.
 - B. Carboxylic acids from Grignard reagent.[3+2=5]

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