

B.Sc.I/ Sem. I Examination.

Oct 2021-22

CHEMISTRY – Paper II – DSC – 4A

Organic Chemistry

Subject code – 71605

Total Marks : 50

Day and Date – Tuesday, 08/02/2022

Time – 11:00-12:00 am

Roll No.		Supervisor's signature	
PRN No.		Obtained Marks	
Student's Signature		Examiner's signature	

Instructions :

- Attempt all 25 multiple choice questions. Each question having 2 marks
- Read each question carefully and choose the appropriate alternative A. B. C or D & write in the bracket.

Answer

1) Positive charged trivalent carbon species is _____ []

A) Free radical

B) Carbene

C) carbocation

D) Carbanion

2) Four groups attached to chiral centre are OH, Cl, NO₂, NH₂, so The priority order is []

A) OH > Cl > NO₂ > NH₂B) NO₂ > NH₂ > Cl > OHc) Cl > OH > NO₂ > NH₂D) OH > NO₂ > NH₂ > Cl

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- 3) In benzene C-H Bond distance is _____ A° []
A) 1.54 B) 1.09
C) 1.45 D) 1.39
- 4) The electron pulling power _____ from OH to C_6H_5 in phenol []
A) decreases B) increases
C) A or B D) None of these
- 5) Restricted rotation can be shown by the system []
A) Olefin B) imine
C) ring D) all of these
- 6) In Phenol each carbon atom is _____ hybridized []
A) SP^2 B) SP^3
C) SP D) none of these
- 7) Delocalization of sigma electron is _____ effect []
A) temporary B) permanent
C) time variable D) both A and B
- 8) Racemic mixture is optically inactive due to _____ []
A) external compensation B) internal compensation
C) racemisation D) none of these
- 9) In Sulphonation an electrophile is _____ []
A) SO_2 B) H_2SO_4
C) SO_3 D) SO_3H
- 10) The intermediate electronic state of molecule for which different electronic arrangement are possible are called _____ []
A) Electromeric effect B) Inductive effect

C) Resonance

D) Hyperconjugation

SUK/KVMW

Pg.No. 3

- 11) An optically inactive molecule shows _____ of symmetry []
- A) improper axis B) Plane
C) proper axis D) any of these
- 12) Halogenation occurs in presence of metal halide []
- A) FeCl_3 B) AlBr_3
C) ZnCl_2 D) any of these
- 13) The complete transfer of π electron towards attacking agent is called as _____ effect []
- A) -E B) +E
C) +I D) -I
- 14) Which of the following is optically inactive []
- A) meso tartaric acid B) lactic acid
C) 2-chloro Pentane D) 2-amino propionic acid
- 15) According to Huckel Furan is aromatic because oxygen _____ electron to aromatic sextet []
- A) does not contribute any B) contribute both lone pair of
C) does not have P-orbital D) contribute one lone pair of
- 16) Negative charged trivalent carbon species is _____ []
- A) carbocation B) carbanion
C) carbene D) free radical
- 17) Non-super imposable mirror images of optically active compound can be _____ []
- A) Optical antipodes B) enantiomorphs
C) enantiomers D) all of these
- 18) Aromatic compounds are _____ []
- A) Cyclic, planar B) conjugated

C) Obey Huckel rule

D) all of these

Pg.No. 4

SUK/KVMW

19) An atom or group which releases the bonding electron more strongly than hydrogen is said to have _____ []

A) -I

B) +I

C) M

D) E

20) 2- Pentene exhibit _____ isomerism []

A) Conformational

B) Optical

C) geometric

D) none of these

21) In benzene _____ type of overlapping is not observed []

A) SP^2-SP^2

B) P - P

C) SP^2-S

D) $SP-SP$

22) Heterolytic cleavage is shown by _____ []

A) half headed curved arrow

B) double headed curved arrow

C) reversible arrow

D) none of these

23) Ethane shows _____ isomerism []

A) optical

B) geometrical

C) conformational

D) none of these

24) The value of 'n' is zero in aromatic compound _____ []

A) Benzene

B) Pyrrole

C) Pyridine

D) cyclopropenyl cation

25) Lactic acid is optically active due to []

A) Chiral centre

B) absence of symmetry

C) asymmetric carbon

D) all of these

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Answer

- 1) The electrophile is _____ species []
 A) Electron acceptor B) electron loving
 c) electron poor D) all of these
- 2) The compound 2,3-dihydroxy butane dioic acid shows _____ Isomerism []
 A) geometric B) Conformational
 C) optical D) cis – trans
- 3) Phenanthrene is benzenoid containing _____ benzene rings []
 A) One B) Three

C) Two

D) none of these

SUK/KVMW

Pg. 1

[]

4) The species that attacks centre of high electron density is

A) electrophile

B) nucleophile

C) Reagent

D) substrate

5) Optically active compound is _____

[]

A) $(\text{CH}_3)_2\text{CHCl}$

B) $\text{CH}_3\text{-CH=CH.Cl}$

C) CH_3CHCl_2

D) $\text{CH}_3\text{-CH}_2\text{-CH(OH)CHO}$

6] Thiophene is hetero monocyclic aromatic ring having heteroatom _____

[]

A) Nitrogen

B) oxygen

C) Sulphur

D) none of these

7) The electrophile amongst the following species

[]

A) R-NH_2

B) R-OH

C) RSH

D) AlCl_3

8) In organic compound presence of chiral carbon shows _____ isomerism

[]

A) geometric

B) conformational

C) Optical

D) cis - trans

9) Cyclopentadienyl cation is _____

[]

A) antiaromatic

B) aromatic

C) non- aromatic

D) none

10) The substitution of hydrogen of an aromatic compound by acyl group is called

[]

A) Reduction

B) Substitution

C) Friedel - craft acylation

D) Friedel craft alkylation

11) Homolytic bond fission is favored by _____

[]

A) UV light

B) heat

B) C) Polar solvent

D) both A & B

12) The compound having optical inactivity is []

- A) 2- chlorobutane B) Lactic acid
C) racemic D) 2- amino propionic acid

13) Which of the following is chiral compound []

- A) 1- Chlorobutane B) 2- Chloropropane
C) 2- chloropentane D) 1- chloropentane

14) Homolytic bond fission yields []

- A) Pair of anions B) Pair of cations
C) Pair of free radicals D) Cation and anion

15) Which of the following is anti- aromatic []

- A) Cyclopropenyl cation B) Cyclopentadienyl anion
C) Cyclopentadienyl cation D) Benzene

16) _____ is most stable carbocation []

- A) CH_3^{\oplus} B) $(\text{CH}_3)_2\text{CH}^{\oplus}$
C) $(\text{CH}_3)_3\text{C}^{\oplus}$ D) $\text{ph-CH}^{\oplus}\text{-ph}$

17) Mesotartaric acid optically inactive due to presence of _____ symmetry []

- A) alternating axis of B) Centre of
C) Plane of D) Proper axis of

18) _____ is benzenoid compound []

- A) Furan B) Pyrrole
C) Pyridine D) Anthracene

19) Protonation of _____ forms carbocation []

- A) Alkene B) Carbonyl

C) Alcohol

D) All of these

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20) The stability of carbocation is affected by _____

[

]

A) Inductive effect

B) Hyperconjugation

C) Resonance effect

D) All of these

21) Non- superimposable mirror images of optically active compound are _____

[]

A) Diastereomers

B) Enantiomorphs

C) Conformers

D) Geometric isomers

[]

22) Carbanions are electron _____

A) rich

B) poor

C) neutral

D) Nucleophilic

[]

23) Which of the following compounds shows geometrical isomerism

A) $(\text{CH}_3)_2\text{C} = \text{CH}(\text{OH})$

B) $\text{CH}_3\text{-CH}=\text{CH-OH}$

C) $\text{CH}_3\text{-CH}=\text{CH}_2$

D) $\text{Cl}_2\text{C}=\text{CHCH}_3$

24) A chiral centre is attached to CH_3 , Br, OH, OR so the priority order of these groups is

[

]

A) $\text{OR} > \text{OH} > \text{Br} > \text{CH}_3$

B) $\text{Br} > \text{OR} > \text{OH} > \text{CH}_3$

C) $\text{OH} > \text{Br} > \text{OR} > \text{CH}_3$

D) $\text{Br} > \text{CH}_3 > \text{OR} > \text{OH}$

25) Aniline is aromatic while _____ is anti- aromatic

[]

A) Pyrrole

B) Thiophene

C) Cyclopropenyl anion

D) Cyclopentadienyl anion