Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021

Course Name - –Chemistry
Course Code - BSC(CSE)202

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- B.A.(JMC)
- BBA(HM)
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- B.SC.(MSJ)
- Bachelor of Physiotherapy
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- Dip.CSE
- Dip.ECE
- DIP.EE
- DIP.CE

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- M.SC.(BT)
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- M.SC.(MATH)
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- M.SC.(AM)
- M.SC.CS)
- M.SC.(ANCS)
- M.SC.(MM)
- B.A.(Eng)

Answer all the questions. Each question carry one mark.

9. 1. What is the term related the energy required to remove an electron from an isolated gaseous atom in its ground state to produce a unipositive ion in its ground state ?

Mark only one oval.

- Electron affinity
- Electronegativity
- Ionization energy
- Bond energy

10. 2. Which form is most stable form of n butane

Mark only one oval.

- Gauche
- Eclipsed
- Partially eclipsed
- Staggered

11. 3. What is the axis of symmetry present in water molecule?

Mark only one oval.

- C2
- C3
- C4
- C6

12. 4. What is formed by reaction of ammonia with formaldehyde?

Mark only one oval.

- Hexamethylenediamine
- Adipic acid
- Urotrophine
- Aldol

13. 5. E1 reaction is best shown by..... degree alkyl halide

Mark only one oval.

- 1
- 2
- 3
- 4

14. 6. SN1 reaction proceeds through the formation of

Mark only one oval.

- Carbon radicals
- Carbanion
- Carbocation
- Carbene

15. 7. Cannizaro reaction is shown by the compound having how many alpha hydrogen

Mark only one oval.

- 0
- 1
- 2
- 3

16. 8. A tree in a garden is an example of which of the thermodynamic system ?

Mark only one oval.

- Open system
- Closed system
- Isolated system
- Homogenous system

17. 9. Which of the following is maintained a closed system ?

Mark only one oval.

- A walking man
- Hydrogen gas filled in a baloon
- A cup of tea
- A pond

18. 10. In an isothermal expansion of an ideal gas

Mark only one oval.

- $\Delta S=0$
- $\Delta V=0$
- $\Delta q=0$
- $\Delta T=0$

19. 11. 100g of ice at 0 °C was melted to 100g of water at 0 °C. Given latent heat of fusion of ice at 0 °C is 80 Cal per g. The ΔU of the process is

Mark only one oval.

- 1000 Cal
- 2000 Cal
- 4000 Cal
- 8000 Cal

20. 12. For the reaction $2SO2(g)+O2(g)=2SO3(g)$

Mark only one oval.

- $\Delta H>\Delta U$
- $\Delta H=\Delta U$
- $\Delta H<\Delta U$
- $\Delta H=1/\Delta U$

21. 13. In a reversible cyclic process the entropy change is

Mark only one oval.

- Positive
- Negative
- Zero
- None of these

22. 14. In a reversible cyclic process the internal energy _____Which of the following holds right ?

Mark only one oval.

- Increases
- Decreases
- Remains unchanged
- Can not be predicted

23. 15. For a spontaneous process,

Mark only one oval.

- ΔGT,P=0
- ΔGT,P>0
- ΔGT,P<0
- ΔAV,T=0

24. 16. The relation between ΔG of the cell reaction and emf E of the cell is given by

Mark only one oval.

- ΔG=nFE
- ΔG=FE/n
- ΔG=-nFE
- ΔG=n/FE

25. 17. Standard hydrogen electrode has been assigned to a potential of

Mark only one oval.

- 1.5 Volt
- 1.0 Volt
- 0 Volt
- 0.5 Volt

26. 18. A galvanic cell is used for the conversion of

Mark only one oval.

- Chemical energy to heat energy
- Electrical energy to chemical energy
- Chemical energy to electrical energy
- Heat energy to chemical energy

27. 19. Which one is true for a galvanic cell?

Mark only one oval.

- The cell potential is always negative
- ΔG for the cell reaction is positive
- The cell potential is always positive
- ΔG for the cell reaction is zero

28. 20. In normal hydrogen electrode the activity of H+ ion is

Mark only one oval.

- 0.2
- 2.0
- 1.0
- 0.1

29. 21. The entropy of the universe is

Mark only one oval.

- Decreasing
- Constant
- Increasing
- Dependent on conditions

30. 22. For an ideal gas undergoing isothermal reversible expansion which of the following is true

Mark only one oval.

- $\Delta G=1/\Delta A$
- $\Delta G=2\Delta A$
- $\Delta G=\Delta A$
- $\Delta G=2/\Delta A$

31. 23. The stereoisomers which rotates the plain polarized light towards right is known as

Mark only one oval.

- R
- D
- d
- S

32. 24. Light having a single wavelength and whose electronic vector vibrate in a plane perpendicular to the propagation of light is called

Mark only one oval.

- Monochromatic light
- Ordinary light
- Plain polarized light
- Non-polarized light

33. 25. If a solution of a compound (30.0 g/100 mL of solution) has a measured rotation of +15º in a 2 dm tube, the specific rotation is:

Mark only one oval.

- +50°
- +15º
- +25°
- +4.0º

34. 26. Let there be four substituents namely..... COOH, D, H and CONH2 attached to the chiral carbon , which one will have highest priority sequence

Mark only one oval.

- D
- H
- COOH
- CONH2

35. 27. In case of α amino acids which chiral carbon is taken to assign D,L nomenclature

Mark only one oval.

- First
- Second
- Last
- All of these

36. 28. Which is the least stable form of n-butane

Mark only one oval.

- Eclipsed
- Staggered
- Partially eclipsed
- Gauche

37. 29. In flying wedge projection formulae, horizontal bonds are projected .....

Mark only one oval.

- Above the plane of the paper
- Below the plane of the paper
- On the plane of the paper
- Both above and below plane of the paper

38. 30. In case of Newman projection formulae, the C atom facing the viewer is represented by

Mark only one oval.

- Circumference of circle
- Centre of Circle
- Both a and b
- Square

39. 31. Non superimposable mirror images are known as

Mark only one oval.

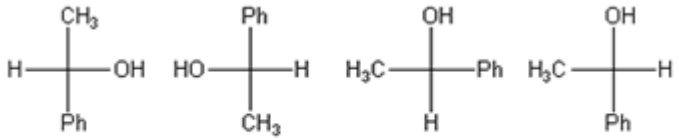
- Diasteromers
- Optical isomers
- Enantiomers
- Isomers

40. 32. Cis 2-butene and trans 2-Butene are

Mark only one oval.

- Configurational isomers
- Diasteroisomers
- Both Configurational isomers and Diasteroisomers
- Conformational isomers

41. 33. Which of the following Fischer projection is different from the others>



1 2 3 4

Mark only one oval.

- 1
- 2
- 3
- 4

42. 34. 1-butene on ozonolysis produces

Mark only one oval.

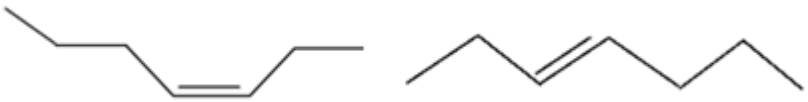
- Formaldehyde only
- propanal only
- Both Formaldehyde and propanal
- Acetone only

43. 35. Which reacts with Grignard reagent to produce 1° alcohol?

Mark only one oval.

- Acetaldehyde
- Propanal
- Methanal
- Acetone

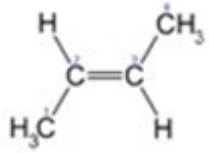
44. 36. Which of the following terms best describes the following pair of molecules?



Mark only one oval.

- Isomers
- Configurational isomers
- Geometrical isomers
- Constitutional isomers

45. 37. Assign configuration to the given compound



Mark only one oval.

- Z configuration
- R configuration
- E configuration
- S configuration

46. 38.

What is the major product of the reaction between CH_3-CH_2-$CH(NMe_3)$-CH_3 with NaOH ?

Mark only one oval.

- 2-butene
- Ethylene
- 1-butene
- Propene

47. 39. Iodination reaction is

Mark only one oval.

- Reversible
- Irreversible
- Reversible at high temperature only
- Reversible at low temperature only

48. 40. Electrophilic substitution of toluene occurs at ..... position

Mark only one oval.

- Ortho only
- Para only
- Both ortho and para
- Meta

49. 41. -OH group in spectroscopy is referred as

Mark only one oval.

- Chromophore
- Red shift
- Auxochrome
- Blue shift

50. 42. The most non-metallic element among the following is:

Mark only one oval.

- Be
- Mg
- B
- Al

51. 43. The probability density is the

Mark only one oval.

- Square root of the wave function
- Absolute value of the wave function
- Absolute square of the wave function
- Inverse of the wave function

52. 44. Magnetic moment of a transition metal can be calculated from

Mark only one oval.

- Number of total electrons
- Number of valence electrons
- Number of unpaired electrons
- Number of paired electrons

53. 45. The angular momentum of an electron of mass m moving in a circular orbit of radius r and velocity v is

Mark only one oval.

- mvr>nh/2π
- mv = h/2π
- mvr = nh/2π
- mvr<nh/2π

54. 46. Which is the correct trend of the change of Δo ?

Mark only one oval.

- 5d < 4d < 3d
- 3d < 4d > 5d
- 3d < 4d < 5d
- 4d < 3d < 5d

55. 47. Electrons should be filled in energy sub shells in order of increasing energy values, is the principle of

Mark only one oval.

- Pauling’s
- Pauli's exclusion
- Aufbau
- Hund's

56. 48. Bohr theory was not able to explain

Mark only one oval.

- Monoelectron systems
- Li ions
- Multielectron systems
- Hydrogen atom

57. 49. The time independent form of Scrodinger equation $\hat{H}\,\psi = E\,\psi$, $\hat{H}=$

Mark only one oval.

- Laplacian operator
- Eigen function
- Hamiltonian operator
- Hamiltonian function

58. 50. Which of the following notations is not used to distinguish between pairs of enantiomers?

Mark only one oval.

- R and S
- +and -
- E and Z
- D and L

59. 51. Conformations are different arrangements of atoms that can be converted into one another by rotation about

Mark only one oval.

- Covalent bond
- Double bond
- Single bond
- Triple bond

60. 52. What type of reaction takes place upon treatment of a ketone with HCN to form a cyanohydrin?

Mark only one oval.

- Electrophilic substitution
- Nucleophilic substitution
- Nucleophilic addition
- Electrophilic addition

61. 53. The shift of absorption maxima towards higher wavelength is called

Mark only one oval.

- Blue shift
- Auxochrome
- Red shift
- Chromophore

62. 54. Cis stilbene has lower wavelength than trans stilbene due to

Mark only one oval.

- Presence of steric repulsion between two H atoms in cis stilbene
- Presence of steric repulsion between two benzene rings in trans stilbene
- Presence of steric repulsion between two benzene rings in cis stilbene
- Presence of steric repulsion between two H atoms in trans stilbene

63. 55. Ozonolysis of Ethylene produces

Mark only one oval.

- Acetaldehyde
- Butanal
- Formaldehyde
- Acetone

64. 56. In bromination of benzene the electrophile is

Mark only one oval.

- Cl
- Br-
- Br
- Br2

65. 57. What is the effect of the optical angle of rotation (α) if length of polarimeter tube is halved and the concentration of the molecule is doubled ?

Mark only one oval.

- α gets halved
- α gets doubled
- α remains same
- α gets four times

66. 58. Electrophile are

Mark only one oval.

- Electron rich species
- Either electron deficient or electron rich depending on temperature
- Electron deficient species
- Vacant electrons

67. 59. The decreasing order of atomic numbers of the atoms He, C, F, B is

Mark only one oval.

- F> C> He> B
- C> F> B> He
- F> C> B> He
- He> B> C> F

68. 60. A process where volume remains constant is called

Mark only one oval.

- Isobaric process
- Isothermal process
- Isochoric process
- Adiabatic process

69. 61. A process where volume remains constant is called

Mark only one oval.

- Isochoric process
- Isobaric process
- Isothermal process
- Adiabatic process

70. 62. Which one of the following is an intensive property?

Mark only one oval.

- Isochoric process
- Isobaric process
- Isothermal process
- Adiabatic process

71. 63. The value of $\Delta H - \Delta E$ for a reaction involving gaseous substances is

Mark only one oval.

- ΔnRT
- $\Delta n/ RT$
- $\Delta nR/ T$
- $RT/\Delta n$

72. 64. Hexane and 3-methyl pentane are example of

Mark only one oval.

- Enantiomers
- Diasteroisomers
- Stereoisomers
- Chain isomers

73. 65. In which medium Favorskii rearrangement occurs?

Mark only one oval.

- Acidic
- Basic
- Neutral
- Water

74. 66. The shift of absorption maxima towards higher wavelength is called

Mark only one oval.

- Blue shift
- Red shift
- Auxochrome
- Chromophore

75. 67. Cis stilbene has lower wavelength than trans stilbene due to

Mark only one oval.

- Presence of steric repulsion between two benzene rings in cis stilbene
- Presence of steric repulsion between two H atoms in cis stilbene
- Presence of steric repulsion between two benzene rings in trans stilbene
- Presence of steric repulsion between two H atoms in trans stilbene

76. 68. Ozonolysis of Ethylene produces

Mark only one oval.

- Formaldehyde
- Acetaldehyde
- Butanal
- Acetone

77. 69. What is the effect of the optical angle of rotation (α) if length of polarimeter tube is halved and the concentration of the molecule is doubled

Mark only one oval.

- α gets halved
- α gets four times
- α remains same
- α eight times

78. 70. The decreasing order of atomic numbers of the atoms He, C, F, B is

Mark only one oval.

- F> C> B> He
- F> C> He> B
- C> F> B> He
- He> B> C> F