

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

Course Name - --Chemistry

Course Code - BSC(CSE)202

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8. *

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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
- Ionization energy
- Electronegativity
- 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..... alkyl halide *

Mark only one oval.

- 1°
- 2°
- 3°
- Both (a) and (b)

14. 6. SN1 reaction proceeds through the formation of *

Mark only one oval.

- Carbon radicals
- Carbocation
- Carbanion
- 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 balloon
- 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 $2\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) = 2\text{SO}_3(\text{g})$ *

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
 Zero
 Negative
 Unpredictable

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

Mark only one oval.

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

23. 15. For a spontaneous process, *

Mark only one oval.

- $\Delta G_{T,P}=0$
- $\Delta G_{T,P}<0$
- $\Delta G_{T,P}>0$
- $\Delta A_{V,T}=0$

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

Mark only one oval.

- $\Delta G=-nFE$
- $\Delta G=nFE$
- $\Delta G=FE/n$
- $\Delta G=n/FE$

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

Mark only one oval.

1.5 Volt

1.0 Volt

0.5 Volt

0 Volt

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

Mark only one oval.

Chemical energy to heat energy

Chemical energy to electrical energy

Electrical energy to chemical 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 positive

The cell potential is always negative

ΔG for the cell reaction is 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

0.1

1.0

29. 21. The entropy of the universe is *

Mark only one oval.

Decreasing

Increasing

Constant

Dependent on conditions

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

Mark only one oval.

$\Delta G = \Delta A$

$\Delta G = 1/\Delta A$

$\Delta G = 2\Delta A$

$\Delta G = 2/\Delta A$

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

Mark only one oval.

R

D

S

d

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

Plain polarized light

Ordinary light

Non-polarized light

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

Mark only one oval.

$+50^\circ$

$+25^\circ$

$+15^\circ$

$+4.0^\circ$

34. 26. According to the second law of thermodynamics which of the following quantities represent the change in a state function (q=heat change)? *

Mark only one oval.

 q_{rev}

Option 1

 q_{rev}/T

Option 2

 Tq_{rev}

Option 3

 T/q_{rev}

Option 4

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

Mark only one oval.

- 1st
- 2nd
- 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 a and b

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.

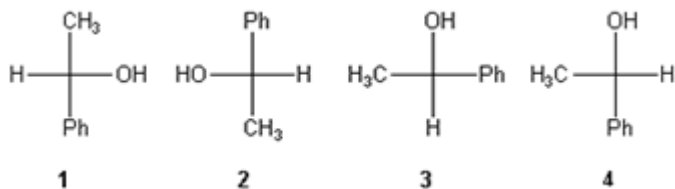
- Enantiomers
- Diastereomers
- Optical isomers
- Isomers

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

Mark only one oval.

- Configurational isomers
- Diastereoisomers
- Both a and b
- Conformational isomers

41. 33. *



Mark only one oval.

- 1
- 2
- 3
- 4

42. 34. 1-butene on ozonolysis produces *

Mark only one oval.

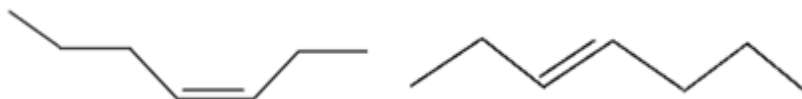
- Formaldehyde only
- Propanal only
- Both Formaldehyde and propanal
- Acetone only

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

Mark only one oval.

- Methanal
- Acetaldehyde
- Propanal
- Acetone

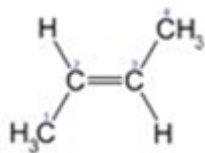
44. 36. Which of the following terms best describes the following pair of molecules? *



Mark only one oval.

- Isomers
- Configurational isomers
- Constitutional isomers
- Geometrical isomers

45. 37. Assign configuration to the given compound *



Mark only one oval.

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

46. 38. *

What is the major product of the reaction between $\text{CH}_3\text{-CH}_2\text{-CH(NMe}_3\text{)-CH}_3$ with NaOH ?

Mark only one oval.

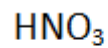
- 1-butene
- 2-butene
- Ethylene
- Propene

47. 39. In nitration the electrophile is *

Mark only one oval.



Option 1



Option 2



Option 3



Option 4

48. 40. Iodination reaction is *

Mark only one oval.

Reversible

Irreversible

Reversible at high temperature only

Reversible at low temperature only

49. 41. Electrophilic substitution of toluene occurs at position *

Mark only one oval.

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

50. 42. -OH group in spectroscopy is referred as *

Mark only one oval.

- Auxochrome
- Chromophore
- Red shift
- Blue shift

51. 43. The most non-metallic element among the following is: *

Mark only one oval.

- Be
- B
- Mg
- Al

52. 44. The probability density is the *

Mark only one oval.

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

53. 45. Magnetic moment of a transition metal can be calculated from *

Mark only one oval.

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

54. 46. 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.

- $mvr > nh/2\pi$
- $mv = h/2\pi$
- $mvr = nh/2\pi$
- $mvr < nh/2\pi$

55. 47. Which is the correct trend of the change of Δ_o ? *

Mark only one oval.

3d < 4d < 5d

5d < 4d < 3d

3d < 4d > 5d

4d < 3d < 5d

56. 48. Electrons should be filled in energy sub shells in order of increasing energy values, is the principle of *

Mark only one oval.

Aufbau

Pauling's

Pauli's exclusion

Hund's

57. 49. Bohr theory was not able to explain *

Mark only one oval.

Monoelectron systems

Li ions

Multielectron systems

Hydrogen atom

58. 50. The time independent form of Scrodinger equation $\hat{H} \psi = E \psi$, $\hat{H} =$ *

Mark only one oval.

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

59. 51. Which of the following notations is not used to distinguish between pairs of enantiomers? *

Mark only one oval.

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

60. 52. 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

61. 53. What type of reaction takes place upon treatment of a ketone with HCN to form a cyanohydrin? *

Mark only one oval.

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

62. 54. The shift of absorption maxima towards higher wavelength is called *

Mark only one oval.

- Blue shift
- Red shift
- Auxochrome
- Chromophore

63. 55. 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

64. 56. Ozonolysis of Ethylene produces *

Mark only one oval.

- Formaldehyde
- Acetaldehyde
- Butanal
- Acetone

65. 57. Electrophile are *

Mark only one oval.

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

66. 58. Which statement is not true for wave function, ψ ? *

Mark only one oval.

- Must be single-valued
- Must be continuous
- Must be infinite
- Must be normalized

67. 59. 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

68. 60. To calculate screening constant (S) the following rule is used *

Mark only one oval.

Hund's rule

Aufbau rule

Slater's rule

Fajan's rule

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