PROVISIONAL ANSWER KEY

Question Paper Code:	10/2026/OL
Category Code:	278/2024
Exam:	Junior Chemist/Assistant Conservation Officer
Date of Test	20-01-2026
Department	Mininig And Geology

Question1:-A cation X^{3+} possess an electronic configuration of $[Kr]4d^{10}$. The element X belongs to

A:-s-block

B:-p-block

C:-d-block

D:-f-block

Correct Answer:- Option-B

Question2:-Which of the following is true about the ion-exchange process of separation of rare earth elements?

A:-Separation of lanthanides is based on their solubility

B:-Synthetic anion exchange resins are more effective for separating lanthanides

C:-Lu^{3+} has minimum firmness in column compared to La^{3+}

D:-Basicity of lanthanides is a crucial factor during separation

Correct Answer:- Option-C

Question3:-Synthetic zeolite HZSM-5 is obtained by

A:-Reducing ZSM-5

B:-Replacing Al^{3+} with H^{+}

C:-Replacing H^{+} with Si^{+}

D:-Replacing H^{+} with Na^{+}

Correct Answer:- Option-D

Question4:-The structure of a borane is edge contracted icosahedron with two missing vertices. Identify from the following.

A:-$C_2B_7H_{13}$

B:-B_6H_{10}

C:-$[B_{13}H_{13}]^{2-}$

D:-$C_2B_4H_6$

Correct Answer:- Option-A

Question5:-The configuration which exhibits *z-in* Jahn Teller distortion is

A:-Octahedral d^2

B:-Octahedral d^1

C:-Low Spin d^8

D:-None of these

Correct Answer:- Option-B

Question6:-The energy trend in LMCT transition follows the order

A:-$MnO_4^- < CrO_4^{2-} < VO_4^{3-}$

B:-$CrO_4^{2-} < VO_4^{3-} < MnO_4^-$

C:-$MnO_4^- < VO_4^{3-} < CrO_4^{2-}$

D:-$VO_4^{3-} < MnO_4^- < CrO_4^{2-}$

Correct Answer:- Option-A

Question7:-Consider the reaction
$[Co(NH_3)_5Cl]^{2+} + [Cr(OH_2)_6]^{4+} \rightarrow [(NH_3)_5Co(\mu\text{-}Cl)Cr(OH_2)_5]^{4+} H_2O$
This belongs to

A:-Substitution reaction involving water exchange

B:-Inner sphere process

C:-Outer sphere process

D:-Eigen - Wilkins mechanism

Correct Answer:- Option-B

Question8:-The $[NiCl_4]^{2-}$ is paramagnetic while $[Ni(CN)_4]^{2-}$ is diamagnetic. The correct explanation for this finding is

A:-Jahn - Teller distortion

B:-Tetrahedral and Square planar field respectively

C:-Ligand to metal back bonding

D:-Metal - ligand π-bonding

Correct Answer:- Option-B

Question9:-The electronic spectrum of $[Ti(H_2O)]^{3+}$ shows a single broad peak with maximum at 20300 cm^{-1}. The CFSE is found to be

A:-241 KJ mol^{-1}

B:-146 KJ mol^{-1}

C:-97 KJ mol^{-1}

D:-194 KJ mol^{-1}

Correct Answer:- Option-C

Question10:-When tris (pentafluorophenyl) borane is treated with XeF_2 in dichloromethane, the process of xenodeborylation is characterised by the formation of

A:-Xe-Xe bond

B:-Xe-C bond

C:-Xe-Cl bond

D:-Xe-B bond

Correct Answer:- Option-B

Question11:-Which of the following term symbol cannot exist for Ti^{2+} ion?

A:-^3F

B:-^3P

C:-^1G

D:-^3S

Correct Answer:- Option-D

Question12:-For the complex ion $[Cr(H_2O)_6]^{3+}$, the transition which is not allowed in electronic spectrum is

A:-$^4T_{2g} \rightarrow {}^4T_{1g}$

B:-$^4A_{2g} \rightarrow {}^4T_{2g}$

C:-$^4A_{2g} \rightarrow {}^4T_{1g(P)}$

D:-$^4A_{2g} \rightarrow {}^4T_{1g(F)}$

Correct Answer:- Option-A

Question13:-Which of the following species has the lowest value C-O stretching frequency?

A:-$[Cr(CO)_6]$

B:-$[Ti(CO)_6]^{2-}$

C:-$[Mn(CO)_6]^{+}$

D:-$[V(CO)_6]^{-}$

Correct Answer:- Option-B

Question14:-The complex which does not obey EAN rule is

A:-$[Mn(CO)_5]^{-}$

B:-$[Fe(CO)_4]^{2+}$

C:-$[Co(NH_3)_6]^{3+}$

D:-$[Mn(CN_6)]^{4-}$

Correct Answer:- Option-D

Question15:-The total number of lines predicted theoretically in ESR spectrum of Bis(Salicylaldimine)copper(II) will be (Given I(^{63}Cu = 3/2)

A:-15

B:-20

C:-60

D:-75

Correct Answer:- Option-C

Question16:-When bis(η^5 - cyclopentadienyl) iron (II) is treated with a strong acid like HBF_4, it produces

A:-$[HFe(C_5H_5)_2]^+$

B:-Cyclopentadienyl anion

C:-bis(η^1 - cyclopentadienyl) iron (II)

D:-$[Fe(C_5H_5)_2]^+[BF_4]^-$

Correct Answer:- Option-A

Question17:-Which of the following can act as superconducting Chevrel phase?

A:-$[FeGe_{10}]^{3-}$

B:-$Na_{172}In_{192}Pt_2$

C:-$NaSn_{1.7}$

D:-$Cu_2Mo_6Se_8$

Correct Answer:- Option-D

Question18:-The metal that forms part of active site of nitrogenase enzyme produced by certain bacteria is

A:-Copper

B:-Zinc

C:-Molybdenum

D:-Chromium

Correct Answer:- Option-C

Question19:-Which of the following is not true about sodium-potassium pump is animal cells?

A:-The pump has higher affinity for K^+ than Na^+ ions

B:-Potassium binding leads to dephosphorylation

C:-The pump regulates cell volume

D:-The Na^+/K^+ - ATpase maintain membrane potential

Correct Answer:- Option-A

Question20:-The heart imaging agent (MIBI scan) cardiolite uses the isotope of

A:-Platinum

B:-Europium

C:-Technetium

D:-Molybdenum

Correct Answer:- Option-C

Question21:-When graphite is treated with excess of potassium, copper-coloured material is resulted. Which of the following is true regarding the intercalation?

A:-Changes staggered layers of graphite to eclipsed layers

B:-Decreases electrical conductivity

C:-It becomes diamagnetic

D:-Interlayer spacing decreases

Correct Answer:- Option-A

Question22:-A radioactive nuclide designated as $^{243}_{83}X$ emits a $\beta -$€particle followed by an α-particle. The number of neutrons present in the resultant atom is

A:-210

B:-84

C:-82

D:-128

Correct Answer:- Option-D

Question23:-Arsenic poisoning evident from the hair strands can be detected using

A:-Gieger-Muller counter

B:-Neutron activation analysis

C:-Isotope dilution analysis

D:-Radiocarbon dating

Correct Answer:- Option-B

Question24:-Which of the following is true about reaction cross-section in a nuclear reaction?

A:-Slow neutron capture cross section varies inversely with neutron velocity

B:-Unit of cross-section is Bq

C:-Probability of reaction between target and impinging particle is inversely related to cross-section

D:-A plot of log (cross-section) and log (neutron energy) will give gaussian type curve

Correct Answer:- Option-A

Question25:-In a crystalline lattice, element X form ccp lattice and 1/3rd of tetrahedral voids is filled by atoms of element Y. The formula of the compound will be

A:-X_2Y_3

B:-XY_3

C:-X_3Y

D:-X_3Y_2

Correct Answer:- Option-D

Question26:-Which of the following is a molecular solid?

A:-SiO_2

B:-SiC

C:-SO_2

D:-AlN

Correct Answer:- Option-C

Question27:-The crystal defect arises in compounds of transition metals which exhibit variable oxidation state is

A:-F-centre

B:-Metal deficiency defect

C:-Frenkel defect

D:-Taylor dislocation

Correct Answer:- Option-B

Question28:-Piezoelectric crystals possessing permanent dipoles are said to have

A:-pyroelectricity

B:-ferroelectricity

C:-antiferroelectricity

D:-superconductivity

Correct Answer:- Option-B

Question29:-When fullerene is treated with potassium, the resulting compound is

A:-K_2C_{60}

B:-C_{120}

C:-$K_{60}C_{60}$

D:-CO_2

Correct Answer:- Option-A

Question30:-For an inverse spinel structure with divalent cation (X^{II}) and trivalent cation (Y^{III}), which of the following statement is true?

A:-$MgAl_2O_4$ is an inverse spinel

B:-X^{II} — Transition metal with higher CFSE, Y^{III} — transition metal with lower CFSE

C:-Mn_3O_4 is an inverse spinel

D:-The inverse spinels are always ferromagnetic

Correct Answer:- Option-B

Question31:-Select the correct IUPAC name of the following compound

A:-2,2,6-Trimethylbicyclo [3.2.1] hept-2-ene

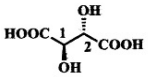
B:-2,6,6-Trimethylbicyclo [1 .3.3] hept-2-ene

C:-2,2,6-Trimethylbicyclo [3.1.1] hex-2-ene

D:-2,6,6-Trimethylbicyclo [3.1.1] hept-2-ene

Correct Answer:- Option-D

Question32:-Assign R & S configuration to the carbon atom labelled as 1 & 2



A:-1S,2S

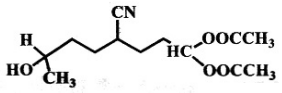
B:-IR,2S

C:-1S,2R

D:-1R,2R

Correct Answer:- Option-B

Question33:-The number of Optical isomers, the below given compound can give will be



A:-4

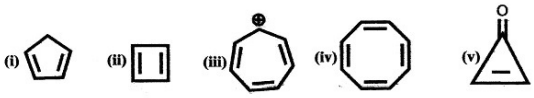
B:-2

C:-8

D:-16

Correct Answer:- Option-A

Question34:-Which of the following species below are aromatic?



A:-(iii), (iv) & (v)

B:-(iii) & (v)

C:-(iii) & (iv)

D:-(i) & (ii)

Correct Answer:- Option-B

Question35:-Which among the following is a better Diels Alder diene reacting with maleic anhydride?

A:- 

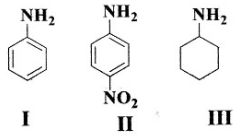
B:- 

C:- 

D:- 

Correct Answer:- Option-A

Question36:- Arrange the following compounds in the order of decreasing basicity



A:- I, II, III

B:- II, I, III

C:- III, I, II

D:- I, III, II

Correct Answer:- Option-C

Question37:- Which among the following statement is NOT true when multiple substituents are present on the aromatic ring:

A:- The directing effects are cumulative.

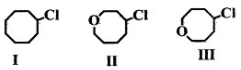
B:- The more activating group will control the regiochemistiy when the groups have opposing directive effects.

C:- The less sterically hindered controls the regiochemistry

D:- The stabilization of intermediate carbocation has no effect on directing effect

Correct Answer:- Option-D

Question38:- The correct order of the rate of solvolysis for the following chlorides in acetic acid is



A:- I>II>III

B:-III>II>I

C:-II>I>III

D:-II>III>I

Correct Answer:- Option-B

Question39:- With *cis*-alkene singlet carbenes give cis-product whereas triplet carbene gives

A:- cis-product

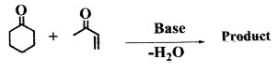
B:- trans-product

C:- both *cis*- & trans-product

D:- no product

Correct Answer:- Option-C

Question40:-Identify the product of the following reaction:



A:- 

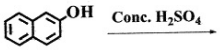
B:- 

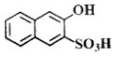
C:- 

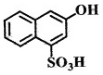
D:- 

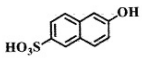
Correct Answer:- Option-C

Question41:-The kinetic product formed in the following reaction is



A:- 

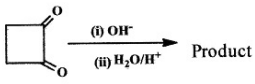
B:- 

C:- 

D:- 

Correct Answer:- Option-D

Question42:-Identify the product.



A:- 

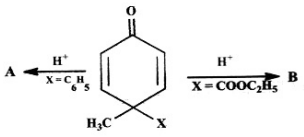
B:- 

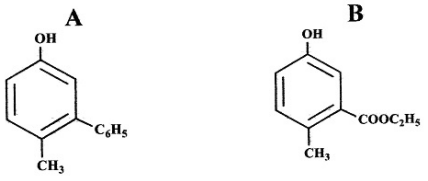
C:- 

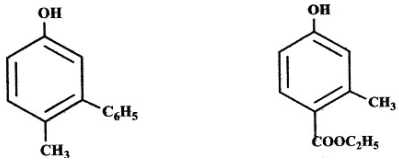
D:- 

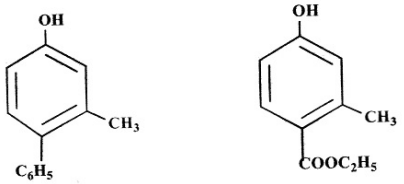
Correct Answer:- Option-A

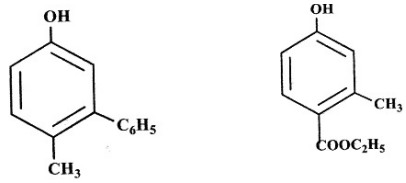
Question43:-Identify the products A & B in the following reaction



A:- 

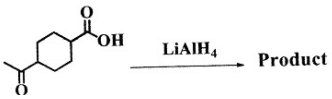
B:- 

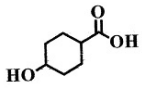
C:- 

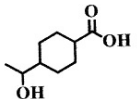
D:- 

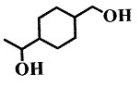
Correct Answer:- Option-A

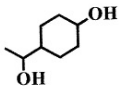
Question44:- Choose the correct product?



A:- 

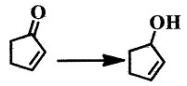
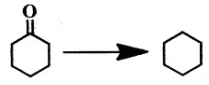
B:- 

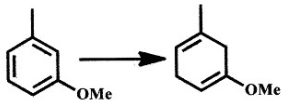
C:- 

D:- 

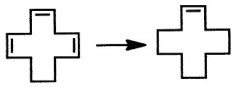
Correct Answer:- Option-C

Question45:- Match Column I with Column II and select the correct answer from the options.

Column I	Column II
A. 	i. $Li/Liq.\ NH_3$
B. 	ii. $NH_2.NH_2\ .O_2\ /Cu^{2+}$

C. 

iii. $LiAlH_4$/Ether

D. 
iv. $NaBH_4/CeCl_3.7H_2O$

A:-A-ii, B-iii, C-iv, D-i

B:-A-iv, B-iii, C-i, D-ii

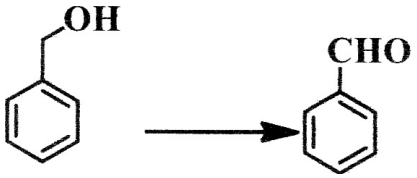
C:-A-iv, B-ii, C-i, D-iii

D:-A-iii, B-i, C-iv, D-ii

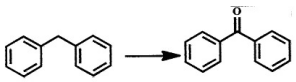
Correct Answer:- Option-B

Question46:-Match Column I with Column II and select the correct answer from the options

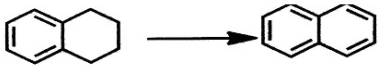
Column I Column II

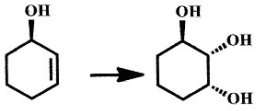
A. 

i PCC/CH_2Cl_2

B. 

ii. DDQ/Benzene

C. 
iii. OsO4/Py

D. 

iv. SeO_2

A:-A-i, B-ii, C-iii, D-iv

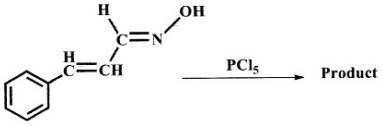
B:-A-iv, B-iii, C-ii, D-i

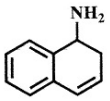
C:-A-iv, B-ii, C-i, D-iii

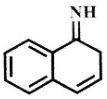
D:-A-i, B-iv, C-ii, D-iii

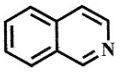
Correct Answer:- Option-D

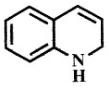
Question47:-Predict the product of the reaction



A:- 

B:- 

C:- 

D:- 

Correct Answer:- Option-C

Question48:-Select the reagent for the synthon 

A:- 

B:- 

C:-ROTs

D:- 

Correct Answer:- Option-D

Question49:-Which of the following compounds act as protecting group for alcohols?

A:-Ethers

B:-Acetals

C:-Ketals

D:-All of the above

Correct Answer:- Option-D

Question50:-The first person to separate a racemic mixture into individual enantiomers is

A:-H. E. Fischer

B:-Jean-Baptiste Biot

C:-Louis Pasteur

D:-François Arago

Correct Answer:- Option-C

Question51:-In the Jablonski diagram of energy transitions. non-radiative decay refers to

A:-The forbidden spin flip occurs prior to the process of phosphorescence

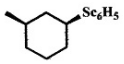
B:-The emission of light in the UV region (emission is not visible)

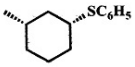
C:-Energy losses resulting from vibrations and or rotations

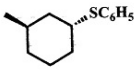
D:-The release of electromagnetic radiation which is not from the nucleus

Correct Answer:- Option-C

Question52:-Identify the major product of the reaction

A:- 

B:- 

C:- 

D:- 

Correct Answer:- Option-C

Question53:-How many different types of protons are present in allyl chloride molecule?

A:-2

B:-3

C:-4

D:-5

Correct Answer:- Option-C

Question54:-What number 1H NMR signals are observed for the following compound?

A:-7

B:-6

C:-5

D:-4

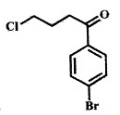
Correct Answer:- Option-D

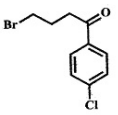
Question55:-

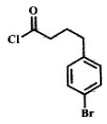
Identify the compound that exhibits the following spectral data.

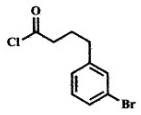
IR: (v) 1685 cm^{-1}; ^{1}HNMR: δ(ppm) 7.84 (d, J=8Hz, 2H) 7.60 (d, J=8Hz, 2H), 3.65(t,j = 7 Hz, 2H), 3.18(t, J=7Hz, 2H), 2.25 (pentet, J=7Hz, 2H).

^{13}CNMR: δppm: 28.36,45,128, 130, 133, 137, 197. El MS m/z: 200, 198 (1:1), 185, 183 (1:1)

A:- 

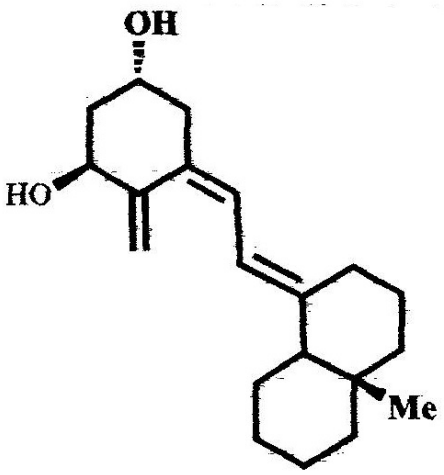
B:- 

C:- 

D:- 

Correct Answer:- Option-A

Question56:-The UV absorption wavelength of 1,3 -butadiene is 217 nm. Calculate the absorption wavelength (in nm) of the conjugated system given below: (Use these absorption values for auxochromic groups: substituent / ring residue: *+5*, exo-cyclic double bond: *+5:* every additional conjugated C=C +30)



A:-277 nm

B:-282 nm

C:-222 nm

D:-252 nm

Correct Answer:- Option-B

Question57:-Which one of the following is a bicyclic monoterpene?

A:-α –€pinene

B:-Menthol

C:-Rubber

D:-Limonene

Correct Answer:- Option-A

Question58:-Which among the following amino acid contains an indole ring?

A:-Tyrosine

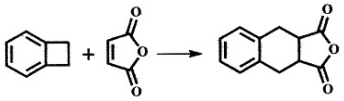
B:-Histidine

C:-Proline

D:-Tryptophan

Correct Answer:- Option-D

Question59:-For the following transformations to occur thermally, what pericyclic reaction must occur?



A:-Sigmatropic rearrangement, Electrocyclic ring closing

B:-Electrocyclic ring opening, Diels Alder Reaction

C:-Sigmatropic rearrangement, Diels Alder Reaction

D:-Electrocyclic ring opening, Electrocyclic ring-closing

Correct Answer:- Option-B

Question60:-If 30% of an organism's DNA is thymine, then it has

A:-70% Guanine

B:-20% Guanine

C:-30% Cytosine

D:-70% Adenine

Correct Answer:- Option-B

Question61:-The temperature at which the second virial coefficient vanishes is known as

A:-Inversion temperature

B:-Neel temperature

C:-Boyle temperature

D:-Critical temperature

Correct Answer:- Option-C

Question62:-The sum of all axes of symmetry elements shown by a cubic crystal will be

A:-23

B:-22

C:-9

D:-13

Correct Answer:- Option-D

Question63:-The equilibrium constant for the reaction.

$N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3\,(g)}$ is given as K. Then, the equilibrium constant for the reaction,

$NH_{3\,(g)} \rightleftharpoons 1/2\ N_{2(g)} + 3/2\ H_{2(g)}$ is equal to

A:-$\frac{1}{k}$

B:-$\frac{1}{k^2}$

C:-$\frac{1}{\sqrt{k}}$

D:-$\frac{2}{\mathrm{K}}$

Correct Answer:- Option-C

Question64:-Consider the following statements about activity (a) and activity coefficient (γ)

(i) For real gases, activity (a) is inversely proportional to pressure (P)

(ii) Activity (a) of a substance in any given state is the ratio of fugacity in that state to fugacity in standard state

(iii) For real gases, activity coefficient (γ) is related to activity (a) as, γ∈= P/a

(iv) For real gases, activity coefficient (γ) is related to activity (a) as, γ∈= a/P

Which of these statements are correct?

A:-Only (i) and (iv)

B:-Only (ii) and (iv)

C:-Only (ii) and (iii)

D:-Only (i) and (iii)

Correct Answer:- Option-B

Question65:-

The internal energy *(E)* per mole of a gas is related to partition function (q) as

A:- $E = RT^2 \left[\frac{\partial \ln q}{\partial T}\right]_V$

B:- $E = RT \left[\frac{\partial \ln q}{\partial T}\right]_V$

C:- $E = RT^2 \left[\frac{\partial \ln q}{\partial T}\right]_P$

D:- $E = RT \left[\frac{\partial \ln q}{\partial T}\right]_P$

Correct Answer:- Option-A

Question66:-According to the Maxwell's distribution, the most probable velocity of a gas

A:-Decreases with increase in temperature

B:-Increases with increase in temperature

C:-First increases with increase in temperature and then decreases

D:-Independent on temperature

Correct Answer:- Option-B

Question67:-A magenta-coloured non-stoichiometric compound is formed when KCl crystals are exposed to potassium metal vapour. This compound shows

A:-Metal deficiency defects

B:-K^+ ion vacancies filled with Cl^- ions

C:-Frenkel defects

D:-Cl^- ion vacancies filled with electrons

Correct Answer:- Option-D

Question68:-The Sucker-Tetrode equation is a statistical-mechanical expression used to calculate

A:-Entropy of ideal monatomic gas

B:-Entropy of crystalline solids

C:-Entropy of real monatomic gas

D:-Entropy of ideal diatomic gas

Correct Answer:- Option-A

Question69:-Based on the Gibbs-Helmholtz relation, under which conditions will a thermodynamic process remain spontaneous at all temperatures?

A:- $\Delta_{H > 0}$ and $\Delta_{S < 0}$

B:- $\Delta_{H < 0}$ and $\Delta_{S < 0}$

C:- $\Delta_{H > 0}$ and $\Delta_{S > 0}$

D:- $\Delta_{H < 0}$ and $\Delta_{S > 0}$

Correct Answer:- Option-D

Question70:-Variation of chemical potential of any constituent *i* of a gaseous system with pressure, $\left(\frac{\partial \mu_i}{\partial P}\right)_{T,N}$ will be equal to

A:-Partial molar volume

B:-Partial molar entropy

C:-Partial molar internal energy

D:-Partial molar enthalpy

Correct Answer:- Option-A

Question71:-Which of the following statements is incorrect regarding physisorption?

A:-It occurs due to weak intermolecular (van der Waals) forces

B:-More easily liquefiable gases are adsorbed to a greater extent

C:-At high pressure, it leads to the formation of multiple layers of adsorbed molecules on the surface

D:-The enthalpy change ($\Delta H_{adsorption}$) is small and positive

Correct Answer:- Option-D

Question72:-In a BET adsorption isotherm, Point B corresponds to:

A:-Beginning of chemisorption

B:-Completion of monolayer adsorption

C:-Onset of capillary condensation

D:-Maximum multilayer thickness

Correct Answer:- Option-B

Question73:-The Auger process involves:

A:-Photon emission

B:-Electron-hole recombination

C:-Non-radiative relaxation with emission of an electron

D:-Nuclear reaction

Correct Answer:- Option-C

Question74:-Consider the following statements about LEED:

(i) It uses electrons of energy 20—200 eV.

(ii) It provides information about surface crystallography.

(iii) Electrons penetrate several micrometers, so bulk structure is studied

Which of the above are correct?

A:-(i) and (ii)

B:-(ii) and (iii)

C:-(i) and (iii)

D:-All

Correct Answer:- Option-A

Question75:-The diffusion current in polarography is proportional to

A:-applied voltage

B:-electrode surface area

C:-concentration of analyte

D:-resistance of solution

Correct Answer:- Option-C

Question76:-Amperometric sensors are highly selective primarily because

A:-they operate at zero current

B:-the applied potential is chosen for a specific redox process

C:-they measure total charge

D:-they use reference electrodes

Correct Answer:- Option-B

Question77:-If the unit of the rate constant of a reaction is $L^{3}mo1^{-3}s^{-1}$, the order of the reaction is:

A:-1

B:-2

C:-3

D:-4

Correct Answer:- Option-D

Question78:-According to Arrhenius equation (k = rate constant and T = temperature)

A:-in k decreases linearly with 1/T

B:-in k decreases linearly with T

C:-in k increases linearly with 1/T

D:-in k increases linearly with T

Correct Answer:- Option-A

Question79:-

Assertion (A): In reactions between ionic species, a plot of log k versus $\sqrt{\mu}$ gives a straight line whose slope depends on the charges of the reacting ions.

Reason (R): According to the Bronsted-Bjerrum equation, the rate constant varies with ionic strength through a term proportional to the product of the ionic charges ($Z_A Z_B$).

Choose the correct option:

A:-Both (A) and (R) are true, and (R) is the correct explanation of (A)

B:-Both (A) and (R) are true, but (R) is not the correct explanation of (A)

C:-(A) is true, but (R) is false

D:-(A) is false, but (R) is true

Correct Answer:- Option-A

Question80:-In homogeneous catalysis, the rate enhancement mainly arises due to:

A:-Increase in collision frequency

B:-

Formation of an intermediate with lower activation energy

C:-Increase in entropy of activation

D:-Increase in surface area

Correct Answer:- Option-B

Question81:-Classical mechanics fails for atomic systems primarily because it assumes that

A:-Energy levels are quantized

B:-Electrons radiate energy continuously when accelerated

C:-Matter behaves only as particles

D:-Forces are velocity dependent

Correct Answer:- Option-B

Question82:-Hermitian operators must have:

A:-Only non-degenerate eigenvalues

B:-Real eigenvalues and orthogonal eigenfunctions

C:-Complex eigenvalues

D:-No physical meaning

Correct Answer:- Option-B

Question83:-The zero-point energy of the harmonic oscillator exists because:

A:-Kinetic energy cannot be zero

B:-Potential energy oscillates

C:-Δ x and Δ p cannot both be zero simultaneously

D:-Frequency is quantized

Correct Answer:- Option-C

Question84:-For a particle in a box, which change produces the largest decrease in energy spacing?

A:-Doubling the mass

B:-Doubling the length

C:-Halving the length

D:-Tripling the length

Correct Answer:- Option-D

Question85:-The first excited vibrational state of SHO has how many nodes?

A:-0

B:-1

C:-2

D:-Depends on mass

Correct Answer:- Option-B

Question86:-For the term symbol $^3P_2$, the correct values are:

A:-S= 1, L= 1, J=2

B:-S=0, L= 1, J=2

C:-S=1, L= 2, J=1

D:-S=1, L= 1, J=1

Correct Answer:- Option-A

Question87:-Which term is NOT included in a typical molecular mechanics force-field equation?

A:-Bond stretching

B:-Angle bending

C:-Electron correlation energy

D:-Non-bonded interactions

Correct Answer:- Option-C

Question88:-Which heat capacity value is predicted by the Dulong—Petit law at high temperatures?

A:-$\frac{3}{2}$ R per mole

B:-3 R per mole

C:-$\frac{5}{2}$ R per mole

D:-R per mole

Correct Answer:- Option-B

Question89:-For point group C_3v, how many irreducible representations exist?

A:-2

B:-3

C:-4

D:-6

Correct Answer:- Option-B

Question90:-A quadrupole splitting in Mössbauer spectroscopy requires:

A:-A non-zero nuclear quadrupole moment

B:-An unpaired electron

C:-High magnetic fields

D:-Isotopic substitution

Correct Answer:- Option-A

Question91:-The F test is mostly used...

A:-For rejection of data

B:-For testing of significance

C:-For obtaining best fitting line

D:-For completion of data

Correct Answer:- Option-B

Question92:-Identify the techniques which is most likely to be used in quantitative analysis?

A:-Multivariate analysis

B:-Sound-tape recordings

C:-Transcripts

D:-Videos

Correct Answer:- Option-B

Question93:-Which of the following option is appropriate for the TGA and DTA?

A:-TGA and DTA measures only weight

B:-TGA measures only weight while DTA measures other effects

C:-TGA and DTA measures only temperature

D:-TGA measures only temperature while DTA measures other effects

Correct Answer:- Option-B

Question94:-In reverse phase chromatography the stationary phase is made of

A:-Non-polar

B:-Polar

C:-Both "1 "and "2"

D:-None of the above

Correct Answer:- Option-A

Question95:-Supercritical CO_2 is used as

A:-Dry ice

B:-Fire fighting

C:-A Solvent for extraction of organic compound from natural sources

D:-A highly inert medium for carrying our various reactions

Correct Answer:- Option-C

Question96:-Which of the following is not a principle of Green Chemistry?

A:-Green solvents and auxiliaries

B:-Use of renewable feedstock

C:-Hazardous chemical synthesis

D:-Design for energy efficiency

Correct Answer:- Option-C

Question97:-What process accounts for the fact that the water on Earth now is the same water that has been on Earth for 4 billion years?

A:-Nitrogen Cycle

B:-Water Cycle

C:-Kreb's Cycle

D:-Life Cycle

Correct Answer:- Option-B

Question98:-Quantum dots can be used in

A:-Crystallography

B:-Optoelectronics

C:-Mechanics

D:-Quantum physics

Correct Answer:- Option-B

Question99:-Piezoelectric effect is observed when materials produce electric charges when

A:-Voltage is applied

B:-Mechanical Stress is applied

C:-Electric field is applied

D:-Magnetic field is applied

Correct Answer:- Option-B

Question100:-Which of the following is a green solvent used for bleaching clothes?

A:-Hydrogen peroxide

B:-Tetrachloroethene

C:-Benzene

D:-Toluene

Correct Answer:- Option-A