

FINAL ANSWER KEY

Question Paper Code:	119/2026/OL
Category Code:	445/2025, 719/2025
Exam:	Non Vocational Teacher Junior (Chemistry)
Date of Test	11-06-2026
Department	Kerala Vocational Higher Secondary Education

Question1:-Which of the following element has the lowest electron affinity ?

A:-I

B:-F

C:-Br

D:-Cl

Correct Answer:- Option-A

Question2:-The increasing order of electronegativity of Li, Be and B is

A:-C < B < Be < Li

B:-Li < Be < B < C

C:-Li < Be < C < B

D:-C < B < Li < Be

Correct Answer:-**Question Cancelled**

Question3:-The smallest ionic radius among the following is

A:-O²⁻

B:-Mg²⁺

C:-F⁻

D:-Na⁺

Correct Answer:- Option-B

Question4:-Which of the following is a soft base ?

A:-H₂O

B:-NH₃

C:-ROH

D:-CO

Correct Answer:- Option-D

Question5:-An example of the complex having tetrahedral structure is

A:-[Ni(CN)₄]²⁻

B:-[Ni(Cl)₄]²⁻

C:-[Cu(NH₃)₄]²⁺

D:-None of these

Correct Answer:- Option-B

Question6:-Which one of the following sulphur-nitrogen compound has cradle like skeletal structure ?

A:-Polythiazyl

B:-Disulphur dinitride

C:-Tetrasulphur tetranitride

D:-None of these

Correct Answer:- Option-C

Question7:-The compound that will behave as an amphoteric character in liquid HF is

A:-SbF₅

B:-SnF₄

C:-HClO₄

D:-BF₃

Correct Answer:- Option-C

Question8:-The number of electron pairs present in the multicentre bonding orbitals of B₅H₁₁ is

A:-8

B:-9

C:-6

D:-7

Correct Answer:- Option-A

Question9:-Which of the following metal carbonyl does not obey EAN rule ?

A:-

$\text{Fe}(\text{CO})_5$

B:- $\text{V}(\text{CO})_6$

C:- $\text{Cr}(\text{CO})_6$

D:- $\text{Mo}(\text{CO})_6$

Correct Answer:- Option-B

Question10:-The ground state term symbol of Ti^{3+} is

A:- $^3\text{F}_2$

B:- $^2\text{D}_{3/2}$

C:- $^5\text{D}_0$

D:- $^2\text{D}_{5/2}$

Correct Answer:- Option-B

Question11:-Metal clusters without ligands are also known as

A:-Chevrel phases

B:-Zintl ions

C:-Carbonyl clusters

D:-None of these

Correct Answer:- Option-B

Question12:-Which of the following is a dihapto ligand ?

A:- C_2H_5

B:- C_6H_5

C:- CH_3

D:-C₂H₄

Correct Answer:- Option-D

Question13:-Which is the HNCC compound among the following ?

A:-Mn₂(CO)₁₀

B:-Fe₃(CO)₁₂

C:-Rh₆(CO)₁₆

D:-Ir₄(CO)₁₂

Correct Answer:- Option-C

Question14:-Which of the following statement is incorrect ?

A:-The Ziegler - Natta catalyst is formed from TiCl₄ and triethyl aluminium

B:-An example of homogeneous catalyst is Ziegler-Natta catalyst

C:-The polymerisation using Ziegler Natta catalyst is stereoselective

D:-Ziegler-Natta catalyst is employed in the conversion of ethene to straight chain polymer polythene

Correct Answer:- Option-B

Question15:-Wilson disease was caused due to the toxic effect of

A:-Copper

B:-Cobalt

C:-Cadmium

D:-Chromium

Correct Answer:- Option-A

Question16:-Consider the following statements

i) The active centre of the cytochrome is the heme group

ii) Cytochrome act as redox intermediates in electron transfer reactions

iii) The heme group in cytochrome c has a polypeptide chain attached and wrapped around it

The correct statements about cytochromes are

A:-Only i and iii

B:-Only ii and iii

C:-Only i and ii

D:-All of the above (i, ii and iii)

Correct Answer:- Option-D

Question17:-Which of the following statement is incorrect for the thermal reactors ?

A:- $^{238}\text{U}_{92}$ is used as a fuel in thermal reactor

B:-Commonly used moderators in thermal reactors are graphite and heavy water

C:-Cadmium rods are used to absorb the excess of neutrons

D:-An alloy of sodium and potassium metal is used as a coolant in thermal reactor

Correct Answer:-**Question Cancelled**

Question18:-Which of the following set represents magic numbers for nuclear shells ?

A:-2, 8, 18, 82, 126

B:-2, 8, 20, 80, 126

C:-2, 8, 20, 82, 126

D:-2, 8, 26, 82, 126

Correct Answer:- Option-C

Question19:-Calculate the Miller indices of crystal planes which cut through the crystal axes at (3a, 2b, c).

A:- (321)

B:- (123)

C:- (326)

D:- (236)

Correct Answer:- Option-D

Question20:-Which of the following statement is incorrect about Calcium fluoride structure ?

A:-The Ca^{2+} ions are arranged in ccp arrangement

B:-The F^- ions occupy all the tetrahedral sites

C:-In this arrangement, each F^- ion is surrounded by eight Ca^{2+} ions whereas each Ca^{2+} ion is surrounded by four F^- ions

D:-This structure is adopted by BaF_2 , SrF_2 , HgF_2 etc.

Correct Answer:- Option-C

Question21:-The lattice parameters of tetragonal crystal system is

A:- $a=b=c$, $\alpha=\beta=\gamma \neq 90^\circ$

B:- $a=b \neq c$, $\alpha=\beta=90^\circ$, $\gamma \neq 120^\circ$

C:- $a \neq b \neq c$, $\alpha=\beta=\gamma=90^\circ$

D:- $a=b \neq c$, $\alpha=\beta=\gamma=90^\circ$

Correct Answer:- Option-D

Question22:-Potassium chloride is exposed to potassium vapour, a lilac colour is obtained. This is due to

A:-Metal deficiency defect

B:-Schottky defect

C:-Metal excess defect

D:-Frenkel defect

Correct Answer:- Option-C

Question23:-The X-ray diffraction pattern of a cubic system does not contain (100), (111), (210), (221) reflection lines. The structures of the cubic lattice is

A:-Primitive cubic lattice

B:-Body centered cubic lattice

C:-Face centered cubic lattice

D:-End centered cubic lattice

Correct Answer:- Option-B

Question24:-Which of the following compound giving smectic type of liquid crystals ?

A:-Ethyl p-azoxy benzoate

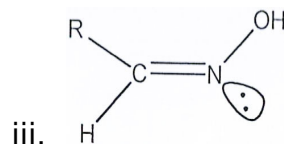
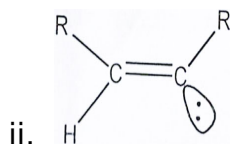
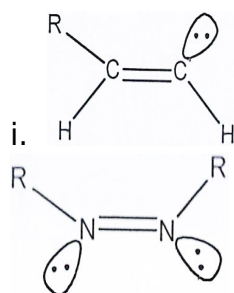
B:-P-Azoxy anisole

C:-P-Azoxy phenetole

D:-P-Methoxy cinnamic acid

Correct Answer:- Option-A

Question25:-Assign E and Z configuration of the following compounds :



iv.

A:-i, E; ii, Z; iii, Z; iv, Z

B:-i, Z; ii, Z; iii, Z; iv, Z

C:-i, E; ii, E; iii, Z; iv, Z

D:-i, Z; ii, Z; iii, E; iv, E

Correct Answer:- Option-A

Question26:-

Which of the following annulenes is/are not aromatic :

i) 14-annulene

ii) 18-annulene

iii) 10-annulene

iv) 12-annulene

A:-10 annulene

B:-18-annulene

C:-Both 14-annulene and 18-annulene

D:-Both 10-annulene and 12-annulene

Correct Answer:- Option-D

Question27:-Identify the intermediate formed during the addition-elimination aromatic nucleophilic substitution reaction

A:-Carbonium ion

B:-Meisenheimer intermediate

C:-Benzyne intermediate

D:-Free radical intermediate

Correct Answer:- Option-B

Question28:-Which of the following compounds would react fastest with N-bromosuccinimide ?

A:-Benzene

B:-Methane

C:-Pyridine

D:-Toluene

Correct Answer:- Option-D

Question29:-Vilsmeier-Hack reaction is an example of

A:-Aromatic electrophilic substitution

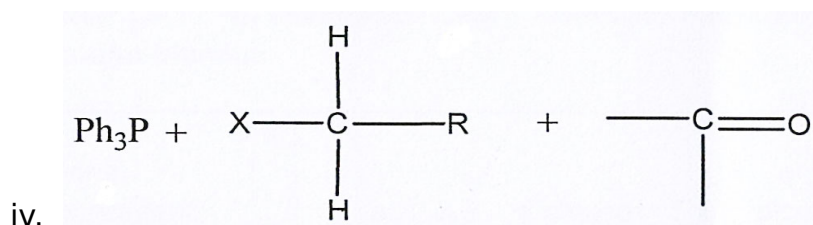
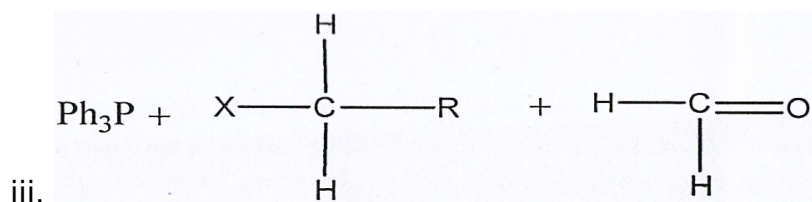
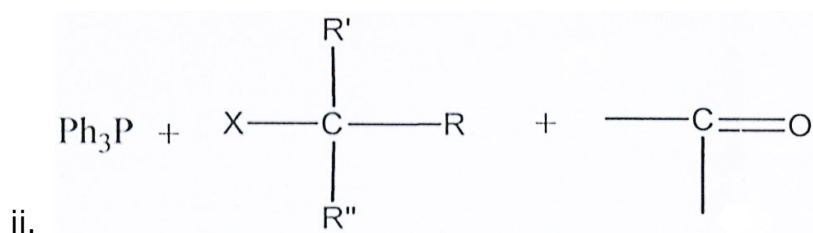
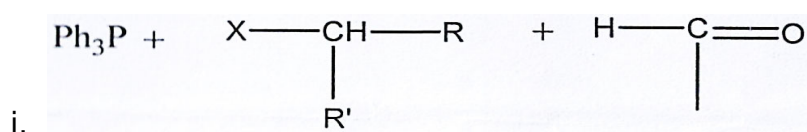
B:-Aromatic nucleophilic substitution

C:-Aliphatic electrophilic substitution

D:-Aliphatic nucleophilic substitution

Correct Answer:- Option-A

Question30:-Identify the reaction that does not lead to wittig product :



A:-i

B:-ii

C:-iii

D:-iv

Correct Answer:- Option-B

Question31:-Mustard gas ($\text{ClCH}_2\text{CH}_2\text{SCH}_2\text{CH}_2\text{Cl}$) gets easily hydrolysed in aqueous NaOH . The rate of hydrolysis is independent of hydroxide ions and is decreased by chloride ions. Suggest a mechanism consistent with this data

A:- $\text{S}_{\text{N}}1$ with anchimeric assistance by sulphide ions

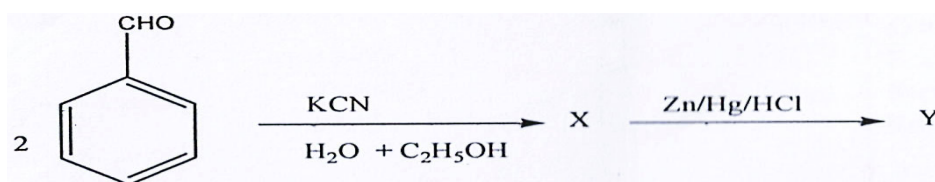
B:- $\text{S}_{\text{N}}1$ with anchimeric assistance by hydroxide ions

C:- $\text{S}_{\text{N}}2$ with anchimeric assistance by halide ions

D:- $\text{S}_{\text{N}}2$ with anchimeric assistance by hydroxide ions

Correct Answer:- Option-A

Question32:-Complete the following reaction by identifying X and Y



A:-X-benzoin, Y-stilbene

B:-X-benzyl alcohol, Y-Benzil

C:-X-Benzoin, Y-dibenzil

D:-X-Benzoin, Y-Hydrobenzoin

Correct Answer:- Option-A

Question33:-Use the Hammett equation to calculate the pK_a of base promoted hydrolysis of $\text{p-ClC}_6\text{H}_4\text{COOC}_2\text{H}_5$ given the pK_a value of 4.25 for the hydrolysis of ethyl benzoate and $\sigma = 0.23$.

A:- 4.02

B:- 4.48

C:- 0.9775

D:- 18.47

Correct Answer:- Option-A

Question34:-when n-propyl amine on treatment with nitrous acid yields n-propyl alcohol and iso-propyl alcohol. The mechanism involves the rearrangement of carbonium ion. Identify the rearrangement.

A:-Wolf

B:-Demjanov

C:-Pinnacol-Pinnacolone

D:-Hoffmann Martius

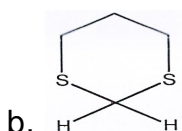
Correct Answer:- Option-B

Question35:-Match the following :

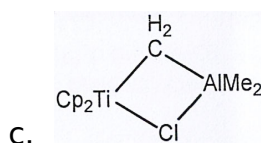
1. Jones reagent

a. 2, 3 dichloro 5,6 dicyano 1,4 benzoquinone

2. DDQ



3. 1, 3 Dithiane



4. Tebbe reagent

d. acidic aqueous solution of chromic acid

A:-1, d; 2, a; 3, c; 4, b

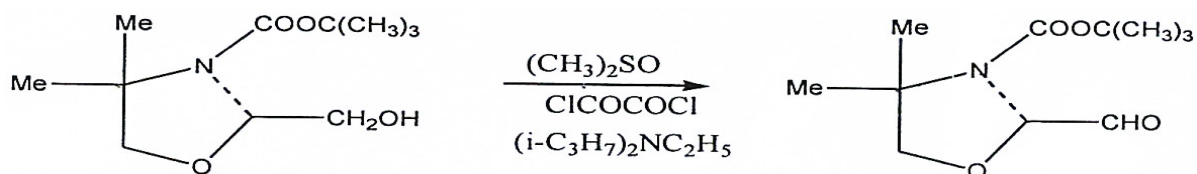
B:-1, d; 2, a; 3, b; 4, c

C:-1, a; 2, d; 3, c; 4, b

D:-1, c; 2, d; 3, a; 4, b

Correct Answer:- Option-B

Question36:-Identify the reaction :



A:-Moffat Oxidation

B:-Swern oxidation

C:-Jones oxidation

D:-Ozonolysis

Correct Answer:- Option-B

Question37:-The Huang-Minlon reaction involves the conversion of carbonyls to methylene in aldehydes and ketones is a modification of the following reaction. Identify the reaction :

A:-Clemmenson

B:-Rosenmund

C:-Wolff-Kishner

D:-Birch

Correct Answer:- Option-C

Question38:-Match the following Pd catalysed reactions :

- | | |
|---|--|
| 1. Stille Coupling substitution of the halide | a. aryl and alkenyl halides react with alkenes give by alkenyl group |
| 2. Sonogashira reaction compounds | b. Cross coupling reaction involving organo boron |
| 3. Suzuki coupling stannate | c. Cross coupling reaction uses aryl and alkenyl |
| 4. Heck reaction halides | d. Coupling of terminal alkynes with vinyl or aryl |

A:-1, d; 2, a; 3, c; 4, b

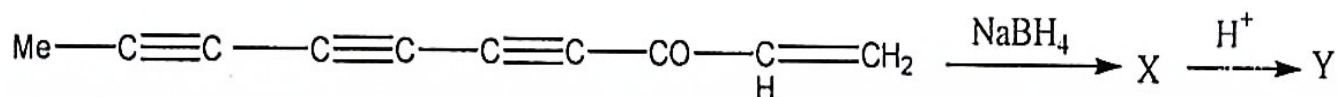
B:-1, c; 2, a; 3, b; 4, d

C:-1, c; 2, d; 3, b; 4, a

D:-1, c; 2, d; 3, a; 4, b

Correct Answer:- Option-C

Question39:-Complete the following :



A:-

X: $\text{Me}(\text{C}\equiv\text{C})_3-\text{CH}_2-\text{CH}=\text{CH}_2$, Y : $\text{Me}(\text{CH}_2-\text{CH}_2)_3-\text{CH}_2-\text{CH}_2-\text{CH}_3$

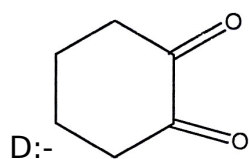
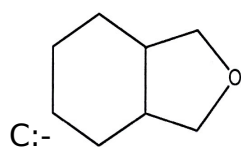
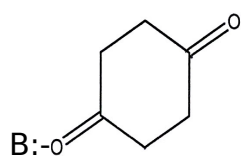
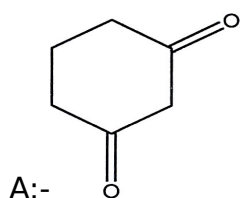
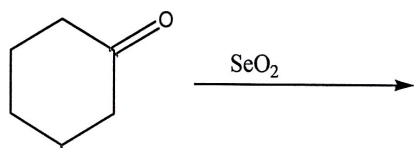
B:-X: $\text{Me}(\text{C}\equiv\text{C})_3-\text{CO}-\text{CH}=\text{CH}_2$, Y : $\text{Me}(\text{CH}_2-\text{CH}_2)_3-\text{CHOH}-\text{CH}_2-\text{CH}_3$

C:-X: $\text{Me}(\text{CH}_2-\text{CH}_2)_3-\text{CHOH}-\text{CH}_2-\text{CH}_3$, Y : $\text{Me}(\text{CH}_2-\text{CH}_2)_3-\text{CH}_2-\text{CH}_2-\text{CH}_3$

D:-X: $\text{Me}(\text{C} \equiv \text{C})_3 - \text{CHOH} - \text{CH} = \text{CH}_2$, Y : $\text{Me}(\text{C} \equiv \text{C})_3 - \text{CH} = \text{CH} - \text{CH}_2\text{OH}$

Correct Answer:- Option-D

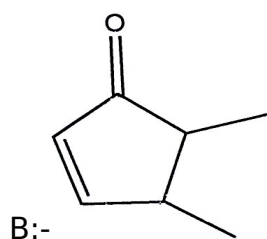
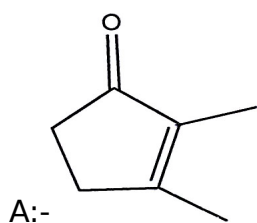
Question40:-Complete the following and identify the product :

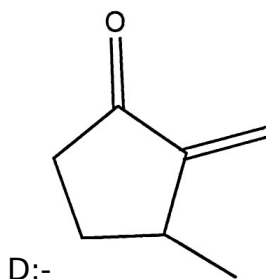
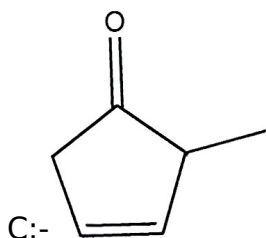


Correct Answer:- Option-D

Question41:-

A ketone was known to have one of the isomeric structures shown below and had λ_{max} at 224 nm. Which was it ?





Correct Answer:- Option-A

Question42:-An organic compound $C_8H_{11}N$ (molecular weight : 121), shows the following spectral data :

IR : sharp band around 3400 cm^{-1} , absorption above 3000 cm^{-1} and below 3000 cm^{-1} , bands around $1400, 1500, 1600\text{ cm}^{-1}$ and two strong bands around 700 and 750 cm^{-1} and two strong bands around 700 and 750 cm^{-1} .

NMR : a five proton multiplet $\delta\ 6.5-7.5$, a triplet - quartet pattern at $\delta\ 1.2$ and 3.1 respectively, sharp singlet (1H) at $\delta\ 3.3$.

MS : a base peak at $m/z = 106$. Suggest a structure for the compound.

A:-N-ethyl aniline

B:-N, N dimethyl aniline

C:-2-ethyl aniline

D:-4-ethyl aniline

Correct Answer:- Option-A

Question43:-Predict the carbon-13 chemical shift positions for the alkene carbons of 2-pentene. Assume the base value for alkenes as $\delta\text{-}123$

A:-Carbon 2= $\delta\ 132$, carbon 3= $\delta\ 123$

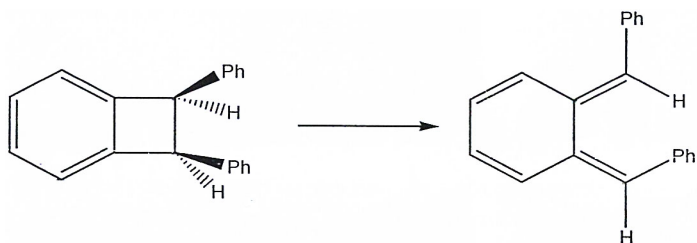
B:-Carbon 2= $\delta\ 123$, carbon 3= $\delta\ 132$

C:-Carbon 2= $\delta\ 113$, carbon 3= $\delta\ 108$

D:-Carbon 2= $\delta\ 108$, carbon 3= $\delta\ 113$

Correct Answer:- Option-B

Question44:-Describe the stereochemical modes of the following transformation :



A:-Ring opening is conrotatory and thermally allowed

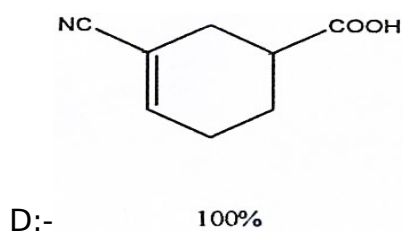
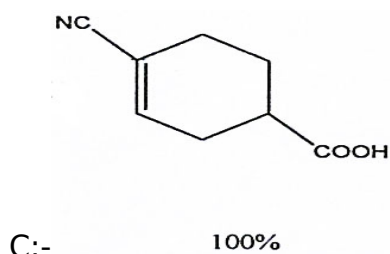
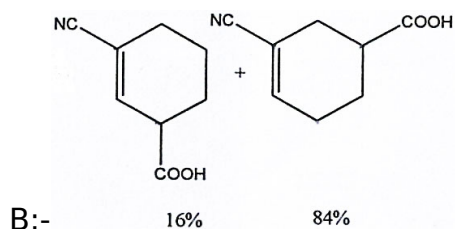
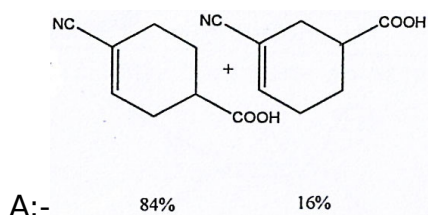
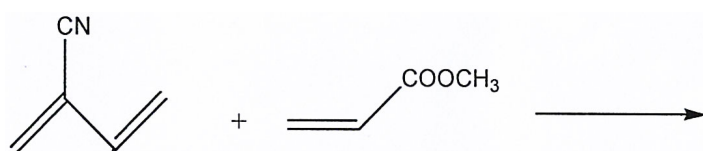
B:-Ring opening is conrotatory and photochemically allowed

C:-Ring opening is disrotatory and thermally allowed

D:-Ring opening is disrotatory and photochemically allowed

Correct Answer:- Option-A

Question45:-In the following Diels-Alder reaction, identify the products formed :



Correct Answer:- Option-A

Question46:-An example of acyclic monoterpenoid is

A:-Dipentene

B:- α -terpineol

C:-Myrcene

D:-Limonene

Correct Answer:- Option-C

Question47:-Which of the following is a not a characteristic of amylose ?

A:-It consists of α -D-glucopyranose units

B:-It is a linear polymer

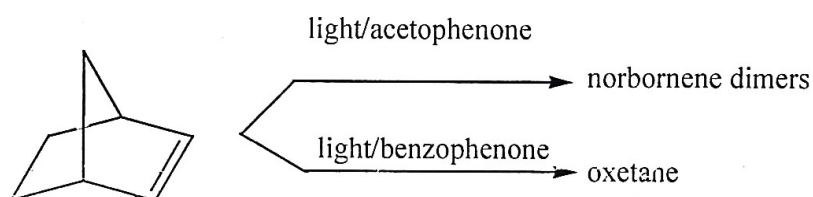
C:-It has 1, 4- α -glycosidic linkage

D:-It is a reducing carbohydrate

Correct Answer:- Option-D

Question48:-

Which of the statement(s) are correct for the following photochemical reaction :



i) Triplet energy of norbornene lies below that of acetophenone

ii) Triplet energy of norbornene lies above that of acetophenone

iii) Triple energy of norbornene lies above that of benzophenone

iv) Triplet energy transfer from acetophenone to norbornene causes dimer formation

v) Triplet energy transfer from norbornene to benzophenone causes oxetane formation

A:-All the above statements are correct

B:-i, ii, iii are correct

C:-i, iii, iv are correct

D:-iii and v are correct

Correct Answer:- Option-C

Question49:-

Identify the correct statements

a. The Gibbs-Duhem relation helps to compute relationships between quantities as a system which remains in equilibrium

- b. The Gibbs free energy can be defined as a sum of chemical potentials and amounts of species
- c. Gibbs-Duhem equation is used to calculate partial molar quantity of a binary mixture by measuring the composition of the mixture which depends on the total molar quantity
- d. Duhem-Margules equation is a relationship between the two components of a single liquid where the vapour mixture is regarded as an ideal gas

A:-a and b are correct

B:-b and c are correct

C:-a and c are correct

D:-All are correct

Correct Answer:- Option-D

Question50:-If NaCl is doped with 1×10^{-4} mol of a Ba^{+2} ion, then the number of cation vacancy produced will be

A:- 1×10^{-8}

B:- 1×10^{-4}

C:- 1×10^{-9}

D:- 1×10^{-2}

Correct Answer:- Option-B

Question51:-Which of the following statements are/is true ?

- a. The unit of Fugacity is same that of temperature
- b. The real gas pressure and fugacity are related through the dimensionless fugacity coefficient
- c. The fugacity goes to zero when the molar fraction of a component moves to zero
- d. Fugacity directly relates to the tendency of a substance to prefer one phase over another

A:-All the statements are correct

B:-a, b and c are correct

C:-b, c and d are correct

D:-c, d and a are correct

Correct Answer:- Option-C

Question52:-

Select the true statement(s) from the following

- a. The sackur-Tetrode equation expresses the entropy of a monatomic ideal gas in terms of its thermodynamic state
- b. The ratio of the specific heats, is called adiabatic index and the ratio of the specific

heats is $5/3$ for monatomic ideal gas and $7/5$ for diatomic gas

c. The ratio of the specific heats, is called isothermal index and the ratio of the specific heat is $7/5$ for monatomic ideal gas and $5/3$ for diatomic gas

d. Integrated vanHoff's equation could be effective in calculating equilibrium constant at another absolute temperature assuming a constant standard enthalpy change over the temperature range

A:-a, b, c and d are true

B:-b, c and d are true

C:-a, b and d are true

D:-a, c and d are true

Correct Answer:- Option-C

Question53:-The values of ΔH and ΔS for a reaction at 300K are -40 kJ and $+135 \text{ JK}^{-1}$ respectively. The reaction is

A:-Spontaneous and Exothermic

B:-Spontaneous and Endothermic

C:-Non spontaneous and Exothermic

D:-Non spontaneous and Endothermic

Correct Answer:- Option-A

Question54:-Which of the following statements is/are correct in polarographic method ?

A:-The diffusion current depends on drop time and temperature

B:-Limiting current is not equal to diffusion current

C:-Migration current cannot be made zero by adding supporting electrolyte

D:- I_d is proportional to the concentration of electro active species

Correct Answer:- **Question Cancelled**

Question55:-Consider a second order reaction $2X \rightarrow Y$ with a rate constant K_1 and let the initial concentration of the reactant be ' a_0 '. What will be the linear function of time ' t ' with the slope $K_1 \cdot a_0$, if the concentration at time t is " b_0 "

A:- $\frac{b_0}{(a_0 - b_0)}$

B:- $\frac{a_0 b_0}{(a_0 - b_0)}$

$$C: \frac{ta_0}{(a_0 - b_0)}$$

D:-None of these

Correct Answer:- Option-D

Question56:-Identify the correct statement(s) from the following

- a. Freundlich's adsorption isotherm fails at the high pressure of the gas
- b. A PES spectrum is a graph of photoelectron count vs. binding energy
- c. AES is not useful when investigating particles sizes smaller than 25 nm
- d. Brunauer-Emmett-Teller theory applies to systems of multilayer adsorption that usually utilizes a probing gas that do not react chemically with the adsorptive

A:-a, b and c are correct

B:-b and c are correct

C:-a, b and d are correct

D:-a and c are correct

Correct Answer:- Option-C

Question57:-In enzyme catalysis reactions, considering Michaelis-Menten Equation

A:-A plot of $1/r$ against $1/C_S$ will be linear with slope R/K_m and the intercept is $1/R$

B:-The greater the value of K_m , the more strongly the enzyme binds the substrate

C:-By knowing the K_m value of a particular enzyme-substrate system, one cannot predict whether the cell needs more enzymes or more substrate to speed up the enzymatic reaction

D:-Michaelis constant is a reflection of the affinity of enzyme for its substrate and is characteristic of a particular enzyme-substrate system

Correct Answer:- Option-D

Question58:-Which of the following statement is wrong ?

A:-The standard electrode potential of silver -silver chloride electrode is 0.2224 V

B:-Debye-Huckel-Onsagar conductance equation does not consider the electrophoretic effect and Asymmetric effect

C:-The potential of calomel electrode depends on the concentration of KCl solution taken in the half cell

D:-Quinhydrone electrode does not gives accurate results for solutions with pH value greater than 8.5

Correct Answer:- Option-B

Question59:-In cases where the potential at infinity is V_{ext} rather than zero, then

A:-Free states occur for $E \geq V_{\text{ext}}$ and bound states occur for $\min(V) < E < V_{\text{ext}}$

B:-Free states occur for $E = V_{\text{ext}}$ and bound states occur for $\min(V) < E \geq V_{\text{ext}}$

C:-Free states occur for $E \geq V_{\text{ext}}$ and bound states occur for $\min(V) < E = V_{\text{ext}}$

D:-Free states occur for $E = V_{\text{ext}}$ and bound states occur for $\min(V) > E \geq V_{\text{ext}}$

Correct Answer:- Option-A

Question60:-A particle is confined to move in one dimensional box of length $2a$ ($-a < x < a$) with $v=0$ inside and infinite outside. Then the function corresponding to first excited state is

A:- $\frac{\sqrt{1} \sin \pi x}{\sqrt{a} \ a}$

B:- $\frac{\sqrt{1} \cos \pi x}{\sqrt{a} \ a}$

C:- $\frac{\sqrt{1} \cos 2\pi x}{\sqrt{a} \ a}$

D:- $\frac{\sqrt{1} \sin 2\pi x}{\sqrt{a} \ a}$

Correct Answer:- Option-A

Question61:-Total number of IR active vibration modes of pyridine is

A:-12

B:-27

C:-24

D:-15

Correct Answer:- Option-C

Question62:-Find out the correct statements(s) regarding the widening of molecular spectral lines

- i. Doppler broadening frequency is proportional to $T^{1/2}$
- ii. Collision broadening frequency is directly proportional to the square root of pressure
- iii. Collision broadening frequency is inversely proportional to the square root of temperature
- iv. Doppler broadening peak is lorentzian in character

A:-All are correct

B:-a, b and c are correct

C:-a, b and d are correct

D:-a, c and d are correct

Correct Answer:- **Question Cancelled**

Question63:-The irreducible representations of C_{2h} are A_g , A_u , B_g and B_u . The Raman active mode of trans-1, 3 butadiene belongs to which of the following irreducible representations

A:- A_g and A_u

B:- A_g and B_g

C:- B_g and A_u

D:- A_g and B_u

Correct Answer:- Option-B

Question64:-In complexometric titration to determine the mass of copper using Murexide indicator at a pH between 9 and 11

A:-The colour of free indicator is violet and the colour of metal ion complex is orange

B:-The colour of free indicator is red and the colour of metal ion complex is orange

C:-The colour of free indicator is orange and the colour of metal ion complex is violet

D:-The colour of free indicator is green and the colour of metal ion complex is wine red

Correct Answer:- Option-A

Question65:-In the qualitative analysis of sixth group cations, the presence of potassium ion is confirmed by adding sodium cobalt nitrate and dilute acetic acid to the test solution. The colour of the precipitate obtained is

A:-Orange Red precipitate

B:-Yellow precipitate

C:-Deep green precipitate

D:-White precipitate

Correct Answer:- Option-B

Question66:-Which of the following statement is not correct regarding Thermal Analysis ?

A:-The area obtained in DTA is proportional to the heat of the reaction and mass of the sample

B:-TGA could record directly the loss in weight as a function of temperature or time

C:-DTA could be used in a temperature range of -90 to 2600 degree Celsius

D:-The area obtained in DTA is inversely proportional to the sample thermal diffusivity

Correct Answer:-**Question Cancelled**

Question67:-Which of the following are examples for natural polymers with pH-responsive behavior ?

A:-Chitosan and Dextran

B:-Chitosan and Chitin

C:-Chitin and Dextran

D:-Chitin and Hyaluronan

Correct Answer:- Option-B

Question68:-Which of the following are not the essence of green chemistry principles ?

A:-Prevention of waste and increased atom economy

B:-Reduction in the generation of derivatives and atom economy

C:-Incorporation of renewable feedstock and reduction in use of catalysts

D:-Prevention of waste and atom economy

Correct Answer:- Option-C

Question69:-Radio waves gets reflect at which atmospheric layer

A:-Troposphere

B:-Ionosphere

C:-Stratosphere

D:-Exosphere

Correct Answer:- Option-B

Question70:-Identify the correct statement(s)

- a. The colour change of halochromic substances occur when the chemical binds to existing hydrogen and hydroxide ions in solution
- b. Magnetocaloric materials are magnetic materials that heat up/cool down when they are placed in a magnetic field
- c. When the spiropyran is in a solution with polar solvents and exposed to radiation, it becomes coloured because its structure has changed and it has been transformed into the merocyanine form
- d. Diarylethene is a new family of thermally irreversible photochromic molecules

A:-b, c and d are correct

B:-a, c and d are correct

C:-a, b and d are correct

D:-a, b, c and d are correct

Correct Answer:- Option-D

Question71:-Assertion (A) : English education became important in Kerala due to administrative reforms in Travancore and Cochin.

Reason (R) : Separate judiciary and revenue departments required a trained hierarchy of officials who were educated mainly through the new English-medium schools.

A:-A and R are true and R is the correct explanation of A

B:-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

Question72:-The statements A, B, C and D below explain how printing influenced social change in Kerala. Read them carefully and choose the correct answer from the options given.

- A. The early printing presses helped democratize knowledge beyond caste restrictions
- B. Herman Gundert published early Malayalam newspapers such as *Rajya Samacharam*
- C. Printing and English education mutually supported each other in promoting modernity
- D. Printed texts strengthened the sacred aura of traditional manuscripts

A:-Only A and B are correct

B:-A, B and C are correct

C:-Only D is correct

D:-All the above

Correct Answer:- Option-B

Question73:-The following statements A, B, C and D describe aspects of Sree Narayana Guru's social reform vision. Read each statement carefully and select the correct answer from the options given below.

- A. He propagated the ideal "*One Caste, one Religion, One God for Man.*"
- B. His teachings emphasized overcoming caste oppression through education.
- C. He discouraged Sanskrit learning as a Brahmanical monopoly.
- D. He believed that spiritual equality must precede social equality.

A:-A is true but B, C and D are false

B:-A is false but B, C and D are true

C:-A, B and D are correct, but C is false

D:-All are true

Correct Answer:- Option-C

Question74:-The following statements A, B, C and D relate to the origins of the Sadhu Jana Paripalana Sangham. Read each statement carefully and choose the correct answer from the options given below.

- A. It was founded in 1907 by Ayyankali
- B. It primarily aimed to protect the rights and welfare of Pulaya community
- C. It emerged as a response to caste discrimination and denial of civil rights
- D. It was established through the patronage of Travancore royal government.

A:-Only A and B are correct

B:-A, B and C are correct

C:-All the above

D:-None of the above

Correct Answer:- Option-B

Question75:-Statements A, B and C below present different views about the abstention movement in Travancore. Read them carefully and choose the correct option from the choices given.

- A. It aimed to secure fair political representation for Ezhavas, Christians and Muslims
- B. The movement rejected the 1932 Legislative Council election due to caste-based voter discrimination
- C. It was led by community organizations such as the Nair Service Society, SNDP Yogam and Christian groups

A:-Both A and B are true

B:-A is true but B and C are false

C:-A is false but B and C are true

D:-All are true

Correct Answer:- Option-A

Question76:-Statements A, B and C describe the connection between the Malabar Rebellion and the wider Indian nationalist movements. Read the statements carefully and choose the correct option from those given below.

- A. Both the Khilafat and Non-Cooperation Movements created a new political consciousness among peasants in Malabar
- B. Congress leadership initially supported the anti-colonial dimension but distanced itself from violent phases.
- C. The rebellion revealed the complex intersection of nationalism, religion and agrarian distress.

A:-Both B and C are false

B:-Both A and B are false

C:-A and C are true

D:-All are true

Correct Answer:- Option-D

Question77:-The statement A, B, C and D describe the role played by newspapers during the Kerala Renaissance. After examining which statement are true or false, choose the correct combination from the options provided.

- A. Newspapers acted as platforms against caste discrimination and social evils
- B. Newspapers functioned only as entertainment journals for the elite
- C. Early Malayalam press avoided political issues to prevent government action
- D. Newspapers supported caste hierarchies and traditional inequalities.

A:-Only A is correct

B:-A and B are correct

C:-All except D are correct

D:-None are correct

Correct Answer:- Option-A

Question78:-Statements A, B, C and D give information about Accamma Cherian. Read each statement carefully, examine whether it is true or false and then choose the correct option that matches the right combination of statements.

- A. She led the historic 1938 "Women's March to the Secretariat" during the Travancore freedom struggle
- B. She was popularly known as the Jhansi Rani of Travancore
- C. She was known mainly as a literary critic and not a political leader
- D. She commonly known as 'Amma'

A:-Both A and B is correct but C and D are false

B:-Only A and C are correct

C:-All except D are correct

D:-None are correct

Correct Answer:- Option-A

Question79:-The statements A, B, C and D describe different aspects of Vaikom Muhammad Basheer's life and work. Read each statement carefully and pick the correct combination from the options provided.

- A. Basheer is celebrated for his humanistic themes and simple, humorous writing style that reflected everyday life
- B. He took part in the freedom struggle and was imprisoned during the Indian national movement
- C. Basheer confined his writings to elite social themes and avoided portraying the lives of common people
- D. He was primarily known as a Sanskrit scholar who focused only on classical literature.

A:-Only A is correct

B:-Only B is correct

C:-A and B are correct

D:-All the above

Correct Answer:- Option-C

Question80:-Read the statements A, B, C and D related to the history and legacy of the Vaikom Satyagraha. Analyse them carefully, eliminate the incorrect statements and choose the correct answer from the options given.

- A. The Satyagraha aimed to secure the right of all castes to walk on the temple roads surrounding the Vaikom Mahadeva Temple
- B. T. K. Madhavan, K. Kelappan and George Joseph were early organizers of the movement
- C. Mahatma Gandhi personally visited Vaikom and held discussions with the Travancore authorities
- D. The Satyagraha is widely considered the first mass civil rights movement in Kerala against caste restrictions.

A:-Only A and B are correct

B:-Only B and C are correct

C:-Only A, C and D are correct

D:-All are true

Correct Answer:- Option-D

Question81:-Directive Principles of states Policy are non-justiciable because

A:-These are directions given by the government

B:-These are not enforceable by courts

C:-These are directions given by Legislature

D:-These are implemented by the executive

Correct Answer:- Option-B

Question82:-The famous Objective Resolution was moved by

A:-Dr. B. R. Ambedkar

B:-K. M. Munshi

C:-Pandit Jawaharlal Nehru

D:-B. N. Rau

Correct Answer:- Option-C

Question83:-Fundamental Rights are contained in which part of Indian Constitution ?

A:-Part III (Articles 12-35)

B:-Part IV (Articles 36-51)

C:-Part IV Article 51 (A)

D:-

Part III (Articles 19-22)

Correct Answer:- Option-A

Question84:-Atal Pension Yojana is a pension scheme for

A:-Senior Citizens

B:-Workers in organized sector

C:-Workers in unorganized sector

D:-For Widows

Correct Answer:- Option-C

Question85:-POCSO Act 2012 came into force in line with

A:-Geneva Convention

B:-Convention on Rights of Child 1989

C:-Convention on Elimination of All forms of Discrimination Against Women 1979

D:-Universal Declaration of Human Rights

Correct Answer:- Option-B

Question86:-Poshan Abhiyan was launched

A:-To eradicate poverty

B:-To provide financial assistance for Widows

C:-To safeguard the interest of working women

D:-To improve nutritional outcomes of children, pregnant women, lactating mothers etc

Correct Answer:- Option-D

Question87:-Pradhan Manthri Suraksha Bima Yojana is available

A:-To people in the age group 18 to 70 years

B:-To people in the age group 50 to 70 years

C:-To people in the age group 40 to 70 years

D:-To people in the age group 18 to 60 years

Correct Answer:- Option-A

Question88:-While ordinary Legal Rights are protected and enforced by ordinary laws, fundamental rights are protected and guaranteed by

A:-The president of India

B:-The government of India

C:-Chief Justice of High Court

D:-The Constitution of India

Correct Answer:- Option-D

Question89:-Right of minorities to establish educational institutions comes under

A:-Right to freedom of Religion

B:-Right to constitutional Remedies

C:-Cultural and Educational Rights

D:-Right to Equality

Correct Answer:- Option-C

Question90:-Fundamental Duties were incorporated in Indian Constitution through

A:-42nd Amendment in 1976

B:-44th Amendment in 1978

C:-42nd Amendment in 1978

D:-44th Amendment in 1976

Correct Answer:- Option-A

Question91:-Which of the following is not associated with the concept of learning ?

A:-Learning is a process

B:-Learning is modification of behaviour

C:-Learning is a product

D:-Learning is universal and continuous

Correct Answer:- Option-C

Question92:-'Learning To Be', one of the four pillars of education involves :

A:-Learning to develop the multiple dimensions of the human personality

B:-Discrimination between what is really important and what is secondary

C:-Acquiring the skills whereby knowledge can be applied for human welfare

D:-Building bridges and not building walls

Correct Answer:- Option-A

Question93:-Conceptual Competency, one of the factors affecting teaching-learning process means :

A:-Familiar with educational system at state level, national level and global level

B:-Know the educational implications with respect to the physical, mental, social and cultural needs of the student

C:-Ability to analyse the curriculum and media intervention for high level content enrichment

D:-Skills in classroom management

Correct Answer:- Option-B

Question94:-A successful learner is

i. One who is able to connect his/her learning to life situations

ii. One who thinks oneself and push through challenges

iii. One who is self-directed and much oriented to self-discipline

iv. One who involves less in his/her activity but observes others

A:-Only i and iv

B:-Only i and ii

C:-Only ii

D:-Only i, ii and iii

Correct Answer:- Option-D

Question95:-Which of the following is/are the phases of a teaching task ?

- i. Reflective phase
- ii. Post-active phase
- iii. Interactive phase
- iv. Reaction phase

A:-Only iii

B:-Only ii

C:-Only iii and iv

D:-Only ii and iii

Correct Answer:- Option-D

Question96:-In a carefully carried out experimental study, the researcher found significant difference in the performance of the experimental and control group. This can be explained as since

A:-The experimental group and control group were drawn from different population

B:-The researcher divided the sample into sub-groups to control the intervening variables

C:-The researches manipulated the independent variable among groups

D:-High degree of control in the selection of subjects

Correct Answer:- Option-C

Question97:-Which of the following statements is/are correct about Historical research ?

- i. It used logical induction
- ii. It does not involve collection of data using structured tools
- iii. It is a mere accumulation of facts and data
- iv. It is a quantitative type of research

A:-Only i and iii

B:-Only i and ii

C:-Only ii and iv

D:-Only ii and iii

Correct Answer:- Option-B

Question98:-Three 'cardinal sins' of research conduct is

- A:-Falsification, Fabrication, Plagiarism
- B:-Falsification, Corroboration, Plagiarism
- C:-Corroboration, Fabrication, Plagiarism
- D:-Integrity, Falsification, Plagiarism

Correct Answer:- Option-A

Question99:-Which of the following sequence is correct in the context of a research ?

- i. Sample selection
- ii. Writing of the title
- iii. Selection of the variable
- iv. Writing of the objectives

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

Correct Answer:- Option-A

Question100:-Which of the following format of reference is correctly written as per APA style ?

A:-Ahamad, N. R., & Ariffin, M. (2018). *Assessment of knowledge, attitude and practice towards sustainable consumption among university students in Selangor, Malaysia*. *Sustainable Production and Consumption*, 16, 88-98.

B:-N. R. Ahamad & M. Ariffin. (2018). Assessment of knowledge, attitude and practice towards sustainable consumption among university students in Selangor, Malaysia. *Sustainable Production and Consumption*, 16, 88-98.

C:-Ahamad, N. R., & Ariffin, M. (2018). Assessment of knowledge, attitude and practice towards sustainable consumption among university students in Selangor, Malaysia. *Sustainable Production and Consumption*, 16, 88-98.

D:-Ahamad, N. R., & Ariffin, M. (2018). Assessment of knowledge, attitude and practice towards sustainable consumption among university students in Selangor, Malaysia. *Sustainable Production and Consumption*, 16, 88-98.

Correct Answer:- Option-D