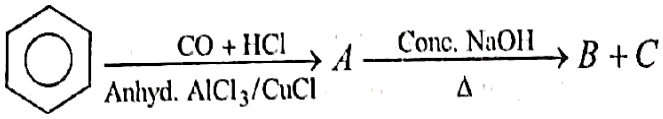
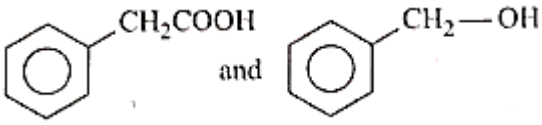
NEET FULL TEST	
No. OF QUES- 45	ARUN KULSHRESTHA CHEMISTRY
TIME- 1 Hr	

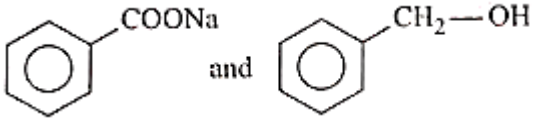
Chemistry: Section

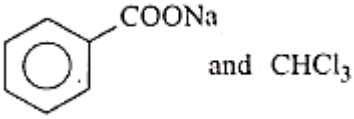
1. Consider the following reaction.

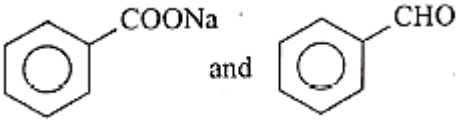


Products B and C are

(a) 

(b) 

(c) 

(d) 

2. Which of the following statement is incorrect?

(a) Sucrose is a dextrorotatory sugar.

(b) Sucrose has a pyranose and furanose ring linked together by 1,1 '- glycosidic linkage.

(c) Maltose has one glycosidic linkage and a free hemiacetal end.

(d) Sucrose is a reducing sugar.

3. Match List-I with List-II.

List-I		List-II	
A.	**Benzene sulphonyl chloride**	**I.**	**Test for primary amines**
B.	**Hofmann bromamide reaction**	**II.**	**Anti-Saytzeff**
C.	**Carbylamine reaction**	**III.**	**Hinsberg reagent**
D.	**Hofmann orientation**	**IV.**	**Known reaction of isocyanates**

Choose the correct answer from the options given below.

(a) A-IV, B-III, C-I, D-II (b) A-III, B-IV, C-I, D-II

(c) A-IV, B-II, C-I, D-III (d) A-IV, B-III, C-II, D-I

4. 2° and 3° amines fail to undergo the carbylamine reaction

(a) they react with alc. KOH

(b) they combine with chloroform to give a stable compound

(c) the nitrogen atom of the amine group does not have the required number of hydrogen atoms

(d) form water insoluble compound

5. All the following statements about the $3d$-series elements are true except that

(a) scandium has lowest melting point

(b) enthalpy of atomisation of zinc is lowest

(c) first ionisation energy of Sc is lowest and zinc is highest

(d) scandium has lowest density

6. Which of the following statements are correct regarding VBT?

(I) It does not explain the colour of coordination compounds.

(II) It can distinguish between strong and weak ligands.

(III) It does not explain the kinetic stabilities of coordination compounds.

(IV) It is unreliable in the prediction of geometries of 4-coordinate complexes.

(V) It explain the colour of coordination compounds.

(a) I and II only (b) Only III

(c) II, III and IV (d) I, III and IV

7. Which one is an incorrect statement?

(a) Principal quantum number gives the average distance of an electron from the nucleus.

(b) Azimuthal quantum number gives the information of angular momentum of an electron present in an subshell.

(c) The value of m for p_z-orbital is +1 .

(d) Five d-orbitals of a particular d-subshell are degenerate.

8. Compound P reacts with $CHCl_2$ and KOH to give an offensive smelling cmopoumd. The original compound P can be

(A)1° aliphatic amine

(B)2° amine

(C)3° amine

(D)1° aromatic amine

Choose the correct answer from the options given below.

(a) A, D (b) B. C

(c) C, D (d) A, C

9. Given below are two statements.

Statement I In the highest oxidation states, the transition metals show basic character and form cationic complexes.

Statement II In transition elements, once the d^5 configuration is exceeded, the tendency to involve all the $3d$ electrons in bonding decreases.

In the light of the above statements, choose the

correct answer from the options given below.

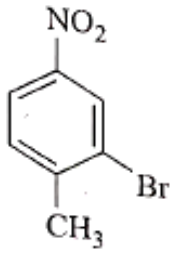
(a)Both Statement I and Statement II are incorrect.

(b)Statement I is correct but Statement II is incorrect.

(c) Statement I is incorrect but Statement II is correct.

(d) Both Statement I and Stat Statement II is correct.

10. IUPAC name of



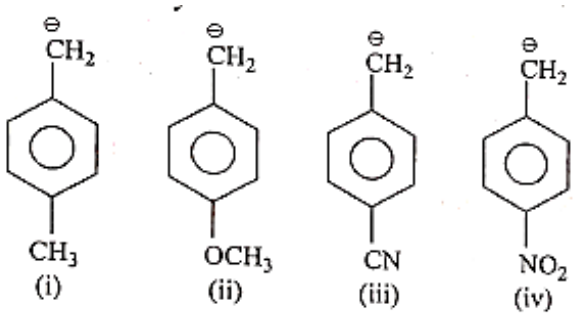
(a) 3-bromo-4 methylnitrobenzene

(b) 2-bromo-1-methyl-4-nitrobenzene

(c) 6-bromo-4-nitrotoluene

(d) 2-methyl-5-nitrobromobenzene

11. Arrange the following carbanions in decreasing order of stability.



Choose the correct option.

(a) (iv) > (iii) > (i) > (ii) (b) (iii) > (iv) > (ii) > (i)

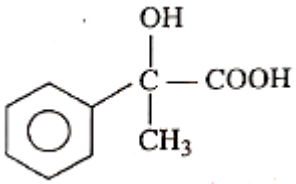
(c) (i) > (iii) > (ii) > (iv) (d) (ii) > (i) > (iii) > (iv)

12. In a set of reactions, acetic acid yielded a product S as follows

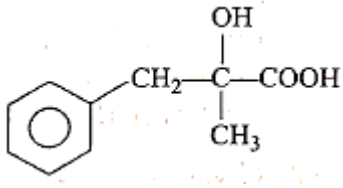
$$CH_3COOH \xrightarrow{SOCl_2} P \xrightarrow[\text{anhy. } AlCl_3]{\text{Benzene}} Q \xrightarrow{HCN} R \xrightarrow{H_2O} S$$

Here, S is

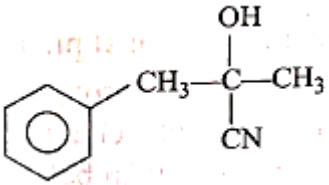
(a)



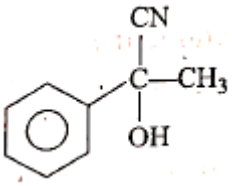
(b)



(c)



(d)



13. EAN of Ni in $[Ni(gly)_2]$ is

(a) 30 (b) 34

(c) 36 (d) 32

14. The enthalpy of hydrogenation of cyclohexene is $-119.5 kJmol^{-1}$. If resonance energy of benzene is $-150.4 kJmol^{-1}$, its enthalpy of hydrogenation would be

(a) $-269.9 kJmol^{-1}$ (b) $-508.9 kJmol^{-1}$

(c) $-358.5 kJmol^{-1}$ (d) $-208.1 kJmol^{-1}$

15. A sudden jump between the values of second and third ionisation energies of an element would be associated with the electronic configuration

(a) $1s^2 2s^2 2p^6 3s^1$

(b) $1s^2 2s^2 2p^6 3s^2 3p^1$

(c) $1s^2 2s^2 2p^6 3s^2 3p^3$

(d) $1s^2 2s^2 2p^6 3s^2$

16. Which of the following property is correct regarding the product which is obtained by reaction of boron with nitrogen gas above $900^\circ C$?

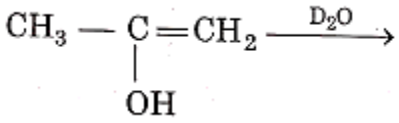
(a) Its structure is similar to graphite.

(b) It has unstable structure.

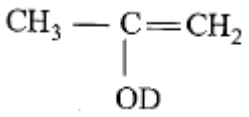
(c) Boron and nitrogen atoms are bound by ionic bonds.

(d) It is isomorphous with diamond.

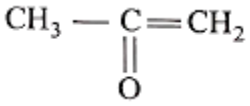
17. Predict product of the following reaction.



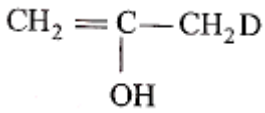
(a)



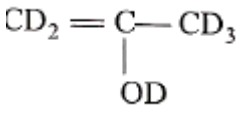
(b)



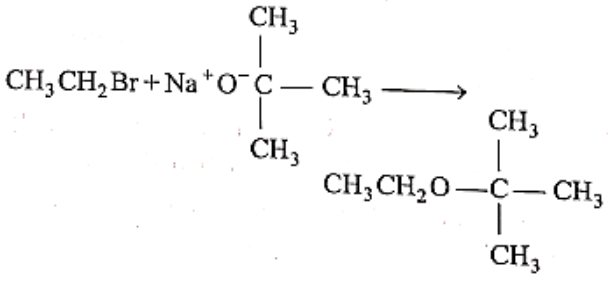
(c)



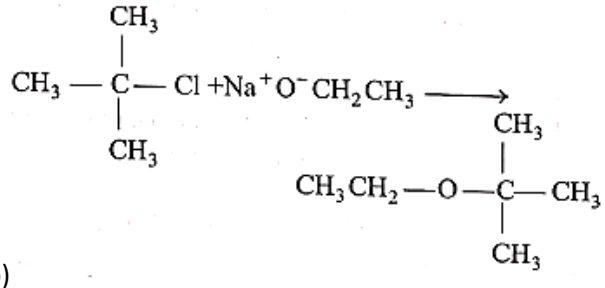
(d)



18. Which of the following reactions is feasible?



(a)



(b)

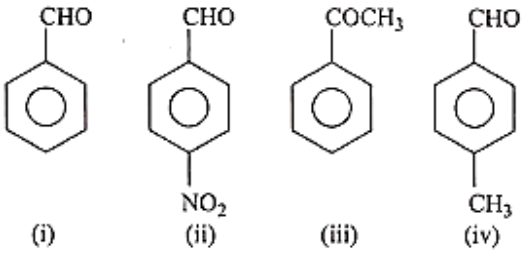
(c) Secondary amine react with $CHCl_3$ and KOH gives isocyanide.

(d) Tertiary amine reacts with $CHCl_3$ and KOH gives isocyanide

19. 20g of naphthoic acid $(C_{11}H_8O_2)$ dissolved in 50g of benzene $(K_f = 1.72 Kkgmol^{-1})$ shows a depression in freezing point of 2K. The van't Hoff factor is

(a) 0.5 (b) 0.1
(c) 2 (d) 3

20. Arrange the following carbonyl compounds in decreasing order of their reactivity in nucleophilic addition reaction.



(a) (ii) > (iii) > (i) > (iv)

(b) (ii) > (i) > (iv) > (iii)

(c) (iii) > (ii) > (i) > (iv)

(d) (iii) > (i) > (iv) > (ii)

21. 25mL of 3.0MHNO_3 are mixed with 75mL of 4.0MHNO_3. If the volumes are additive, the molarity of the final mixture would be

(a) 3.25M (b) 4.0M
(c) 3.75M (d) 3.50M

22. The electron gain enthalpies of halogens in $kJmol^{-1}$ are as given below.$F = -332, Cl = -349, Br = -324, I = -295$.The less negative value for F as compared to that of Cl is due to

(a) strong electron-electron repulsion in the compact $2p$-subshell of F.

(b) weak electron-electron repulsion in the bigger $3p$-subshell of Cl.

(c) smaller electronegativity value of F than Cl.

(d) Both (a) and (b)

23. Given below are two statements, one is labelled as Assertion (A) and other is labelled as Reason (R).

Assertion (A) N_2O is represented by (i) $N = N = O$ and (ii) $N \equiv N \rightarrow O$ but later is more stable.

Reason (R) The form (ii) shows resonance.

In the light of the above statements, choose the most appropriate answer from the options given below.

(a) (A) is false but (R) is true.

(b) Both (A) and (R) are true and (R) is a correct explanation of (A).

(c) Both (A) and (R) are true and (R) is not a correct explanation of (A).

(d) (A) is true but (R) is false.

24. Match the List-I with List-II

	List-I (Species)		**List-II (Lone pair of electrons on central atom)**
A.	Cl^-	**(i)**	**3**
B.	XeF_4	**(ii)**	**1**
C.	SF_4	**(iii)**	**2**
D.	$(I_3)^-$	**(iv)**	**4**

Choose the correct answer from the options given below.

(a) A-(iv), B-(iii), C-(ii), D-(i)

(b) A-(iv), B-(iii), C-(i), D-(ii)

(c) A-(iii), B-(iii), C-(ii), D-(iv)

(d) A-(i), B-(ii), C-(iii), D-(iv)

25. $CaCl_2$ is preferred over $NaCl$ for clearing ice on roads on particularly in very cold countries. This is because

(a) $CaCl_2$ is not soluble in H_2O than $NaCl$.

(b) $CaCl_2$ is hygroscopic but $NaCl$ is not.

(c) eutectic mixture of $CaCl_2/H_2O$ freezes at $-55°C$ while that of $NaCl/H_2O$ freezes at $-18°C$.

(d) $NaCl$ makes the road slippery but $CaCl_2$ does not.

26. Match the List-I with List-II.

List-I		List-II
A. $Na_2O_2 + H_2SO_4 \longrightarrow Na_2SO_4 + H_2O_2$	(i)	Redox reaction
B. $H_2 + Cl_2 \longrightarrow 2HCl$	(ii)	Oxidation reaction
C. $Cr(OH)_3 \longrightarrow CrO_4^{2-}$	(iii)	Not a redox reaction
D. $IO_3^- \longrightarrow I^-$	(iv)	Reduction reaction

Choose the correct answer from the options given below.

(a) A-(iii), B-(i), C-(ii), D-(iv)

(b) A-(iii), B-(ii), C-(i), D-(iv)

(c) A-(i), B-(iii), C-(ii), D-(iv)

(d) A-(iii), B-(i), C-(iv), D-(ii)

27. Given below are two statements.

Statement I Quartz contain hexagonal prism.

Statement II U.V. light can't pass through quartz. In the light of the above statements, choose the correct answer from the options given below.

(a) Both statement I and statement II are true.

(b) Both Statement I and statement II are false.

(c) Statement I is true but statement II is false.

(d) Statement I is false but statement II is true

28. Given below are two statements.

Statement I A tertiary acid (R_3CCOOH) usually fail in sodalime catalysed decarboxylation reaction to produce alkane, rationalise.

Statement II Tertiary carbanion is highly unstable,very less likely to be formed.

In the light of the above statements, choose the correct answer from the options given below.

(a) Both statement I and statement II are true.

(b) Both Statement I and statement II are false.

(c) Statement I is true but statement II is false.

(d) Statement I is false but statement II is true.

29. The molecule in which an atom is associated with more than $8e^-$is known as hyper valent molecule. All hypervalent molecules must have $d\pi - p\pi$ bonding but the molecule having back bonding need not have always $d\pi - d\pi$ bonding. Which of the molecule is not hypervalent but completes its octet?

(a) $AlCl_3$ (b) $AlBr_3$

(c) AlF_3 (d) BF_3

30. If the solubility product of AB_2 is 3.2×10^{-11} . M^3, then the solubility of AB_2 in pure water is $(molL^{-1})$ [Assuming that neither kind of ion reacts with water]

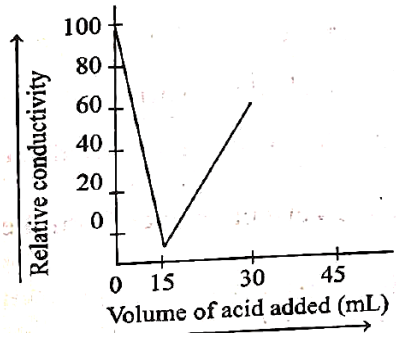
(a) $\left(\frac{3.2\times10^{-11}}{4}\right)^{\frac{1}{3}}$ (b) $(3.2 \times 10^{-11})^{\frac{1}{3}}$

(c) $\left(\frac{3.2\times10^{-11}}{2}\right)^{\frac{1}{3}}$ (d) $\left(\frac{3.2\times10^{-11}}{4}\right)^{3}$

31. Which of the following equimolar solution have highest vapour pressure?

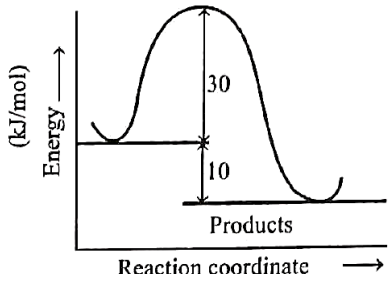
(a) Glucose (b) NaCl
(c) K_2SO_4 (d) $K_4[Fe(CN)_6]$

32. 20mL of KOH solution was titrated with 0.20M H_2SO_4 solution in a conductivity cell. The data obtained were plotted to give the graph shown below. The concentration of the KOH solution was



(a) $0.30 molL^{-1}$ (b) $0.12 molL^{-1}$
(c) $0.15 molL^{-1}$ (d) $0.075 molL^{-1}$

33. The energy of activation for the backward reaction is



(a) $30 kJmol^{-1}$ (b) $10 kJmol^{-1}$
(c) $20 kJmol^{-1}$ (d) $40 kJmol^{-1}$

34. Which of the following set contain all extensive property?

(a) Mass, volume, internal energy

(b) Enthalpy, temperature, density

(c) Mass, pressure, density

(d) Internal energy, temperature, pressure

35. Given below are two statements.

Statement I XeO_3 has 4σ-bonds and 4π-bonds.

Statement II The hybridisation of Xe^{in} XeF_4 is sp^3d^2.

In the light of the above statements, choose the correct answer from the options given below.

(a) Both statement I and statement II are true.

(b) Both Statement I and statement II are false.

(c) Statement I is true but statement II is false.

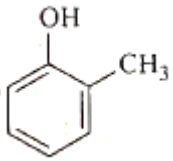
(d) Statement I is false but statement II is true.

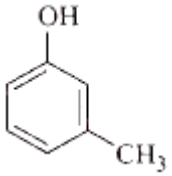
Section-B (Q. No. 86 to 100)

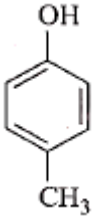
36. The compound used in enhrichment of uranium for nuclear power plant is
(a) $UO_2(NO_2)_2$ (b) UCl_4
(c) UF_6 (d) U_3O_8

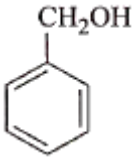
37. The spin only magnetic moment of $[Fe(CN)_6]^{3-}$ will be
(a) 2.98BM (b) 8.96BM
(c) 5.92BM (d) 1.732BM

38. Compound $C_7H_8O(A)$ gives colour with neutral $FeCl_3$ and can be nitrated to form three types of nitro compound A can be

(a) 

(b) 

(c) 

(d) 

39. $(CH_3)_3CCH = CH_2 \xrightarrow{X} (CH_3)_3 \underset{OH}{\overset{CH}{\underset{|}{\overset{|}{C}}}} - CH_3X$ can be

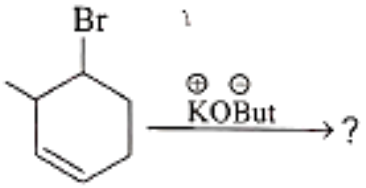
(a) $BH_3 \cdot THF/H_2O_2 \cdot OH^-$

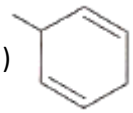
(b) H_3O^+

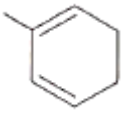
(c) $Hg(OAc)_2/NaBH_4, NaOH$

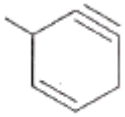
(d) None of the above

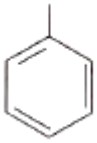
40. Choose the correct product among four options regarding following reaction.



(a) 

(b) 

(c) 

(d) 

41. 12g of a non-volatile solute dissolved in 108g of water produces the relative lowering of vapour pressure of 0.1 . The molecular mass of the solute is

(a) 80 (b) 40
(c) 20 (d) 120

42. A solution of sodium chloride discharges $6.1 \times 10^{16}\text{Na}^{+}$ions and $4.6 \times 10^{16}\text{Cl}^{-}$ions in 10 seconds. Find the current passing through the solution.

(a) 1.7mA (b) 1.8mA
(c) 1.9mA (d) 1.6mA

43. One gram of charcoal adsorbs 400mL of 0.5M acetic acid to form a monolayer, and the molarity of acetic acid reduces to 0.4M. Calculate surface area of charcoal adsorbed by each molecule of acetic acid, where the surface area of charcoal is $3.01 \times 10^{2}\text{m}^2\text{g}^{-1}$.

(a) $1 \times 10^{-19}\text{m}^2$
(b) $4.99 \times 10^{-21}\text{m}^2$
(c) $2.5 \times 10^{-21}\text{m}^2$
(d) $0.11 \times 10^{-22}\text{m}^2$

44. Among the following oxyacids of sulphur, which one has more than one oxidation state for sulphur?

(a) $\text{H}_2\text{S}_2\text{O}_6$ (b) $\text{H}_2\text{S}_2\text{O}_7$
(c) H_2SO_4 (d) $\text{H}_2\text{S}_2\text{O}_3$

45. The crystal field stabilisation energy (CFSF) and the spin-only magnetic moment in Bohr Magneton (BM) for the complex $\text{K}_3[\text{Fe}(\text{CN})_6]$ are respectively.

(a) $0.0\Delta_0$ and $\sqrt{35}\text{BM}$
(b) $2.0\Delta_0$ and $\sqrt{3}\text{BM}$
(c) $16\Delta_0$ and $\sqrt{24}\text{BM}$
(d) $-2.4\Delta_0$ and 0BM