

Total No. of Questions : 27]

[Total No. of Printed Pages : 4

XIAP/BIKD22

7102-B

CHEMISTRY

Time : 3 Hours]

[Maximum Marks : 70

(Very Short Answer Type Questions)

1 each

1. What is one a.m.u. or one 'u' ?
2. Give one important use of Borax.
3. Name the element of Group 13 which forms the most stable +1 oxidation state.
4. Write empirical formula of hydrogen peroxide.
5. What is the general formula of Alkynes ?

(Short Answer Type Questions—I)

2 each

6. Define orbit and orbital.

Turn Over

XIAP/BIKD22-7102-B

W-2-B

7. What is Electronegativity ? How does it vary along a period ?
8. State Hesse's law of constant heat summation.
9. Define system and surroundings.
10. Calculate the oxidation number of 'S' in H_2S .
11. Give the reaction of H_2O_2 with acidified potassium ferrocyanide solution.

Or

Give the importance of heavy water in nuclear reactors.

12. What are the harmful effects of acid rain ?

(Short Answer Type Questions—II)

13. Calculate the mass of a molecule of CO_2 .
14. What are Quantum Numbers ? Name and explain one of them.
15. What are main features of long-term of Periodic Table ?
16. Explain Viscosity. What is the effect of temperature on it ?
17. Why is the effect of temperature more important for liquification of gases ?
Define critical temperature.
18. Name Alkaline earth metals and give their electronic configuration.

XIAP/BIKD22-7102-B

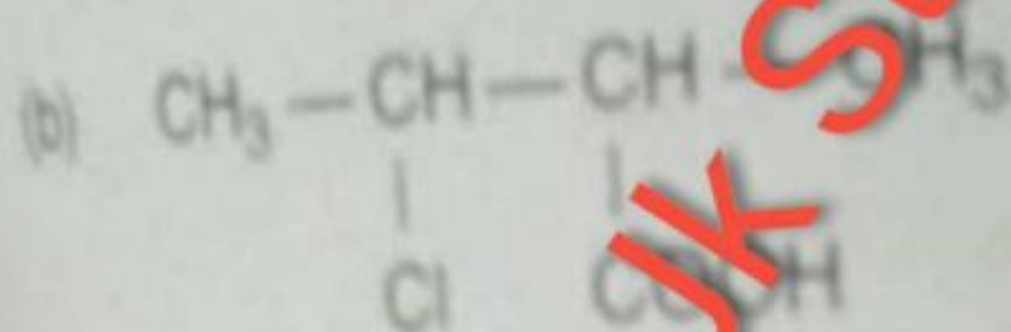
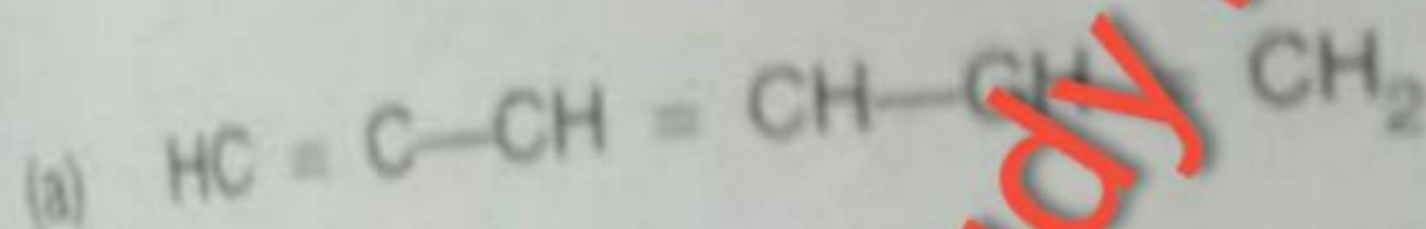
W-2-B

19. Explain biological importance of Mg and Ca.
20. What is dry ice ? Why is it so called ? Give its one use.
21. What are Carbocations ? Write the order of stability in Carbocations.
22. Explain homolytic and heterolytic fission of covalent bond.

Or

Explain Hyperconjugation effect.

23. (i) Give IUPAC names of the following compounds :



- (ii) Draw the structural formulae of 4-hydroxybutan-2-one.
24. Write short note on Friedel-Crafts alkylation.

Or

Explain the peroxide effect.

(Long Answer Type Questions)

25. What are the essential conditions for the formation of an ionic bond ?
Explain the formation of an ionic bond between an atom of Na and Cl.

Or

What is VSEPR theory ? How does it explain the bond angles observed in CH_4 ?

26. State and explain Le-Chatelier's principle. Give an example of its application in chemical industry.

Or

What is a Buffer Solution ? What are different types of Buffers ?

27. What are Conformations ? Discuss the different conformations of ethane.

Or

Discuss the effect of functional groups in Monosubstituted Benzene.

XIAP/BIKD22-7102-B
W-2-B

A-2-X

Roll No.....

Total No. of Questions : 27]

[Total No. of Printed Pages : 7

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XIARWZJD21

5702-X

CHEMISTRY

Time : 2.30 Hours]

[Maximum Marks : 70

General Instructions :-

- (i) All questions are compulsory.
- (ii) Question Nos. 1 to 5 are very short answer type questions and carry 1 mark each.
- (iii) Question Nos. 6 to 12 are short answer type questions—I and carry 2 marks each.
- (iv) Question Nos. 13 to 24 are short answer type questions—II and carry 3 marks each.
- (v) Question Nos. 25 to 27 are long answer type questions and carry 5 marks each.

XIARWZJD21 – 5702-X

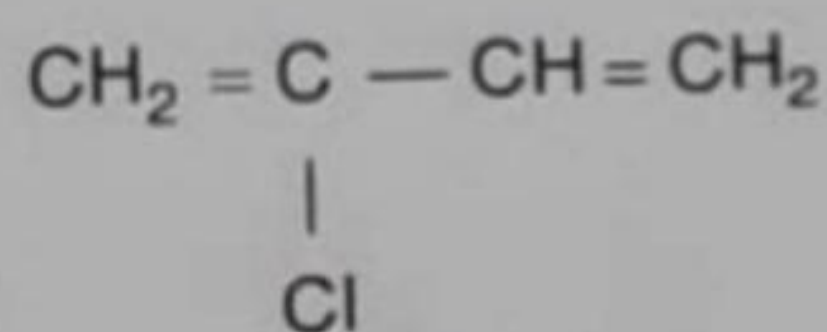
A-2-X

Turn Over

(Very Short Answer Type Questions)

1 each

- ✓ 1. What is Internal Energy ?
- ✓ 2. Define oxidising and reducing agents.
- ✓ 3. Calculate the oxidation number of C in CO_3^{2-} .
- ✓ 4. Write the IUPAC name of the compound given below :



5. Out of ethylene and acetylene which is more reactive towards nucleophilic addition reactions and why ?

(Short Answer Type Questions—I)

2 each

- ✓ 6. Calculate the mass of a molecule of CO_2 .
- ✓ 7. Distinguish between a particle and a wave.
8. Write the names and atomic number of the following elements :
 - (i) 2nd Alkali metal
 - (ii) 3rd Alkaline earth metal

XIARWZJD21 – 5702–X

A-2-Xwww.jkstudentsguider.in

(iii) 4th noble gas

(iv) 1st d -block element.

✓ 9. State the Law of Chemical Equilibrium.

✓ 10. Discuss any two characteristics in which hydrogen resembles halogens.

✓ 11. What are p -block elements ? Write the names of group-13 elements.

✓ 12. What should be done to manage Household and Industrial Waste ?

Or

Green plants use CO_2 for photosynthesis and return oxygen to atmosphere, even then CO_2 is considered to be responsible for greenhouse effect.

Explain, why ?

(Short Answer Type Questions—II)

3 each

✓ 13. Define the following with examples :

(i) Avogadro's number

(ii) Mole in terms mass

✓ (iii) Mole in terms of volume

XIARWZJD21 – 5702-X

A-2-X

Turn Over

- ✓ 14. Distinguish between s - and p -orbitals.
- ✓ 15. Define Electron Gain Enthalpy. Discuss the factors on which electron gain enthalpy depends.
- ✓ 16. State and explain Gay Lussac's Law.
17. What is Viscosity ? Describe the factors which affect viscosity.
- ✓ 18. What are intensive and extensive properties ?
19. Define the Lewis concept of acids and bases with examples. Name the types of Lewis acids.
- ✓ 20. Name the elements of group-2 and discuss the trends in variation of the following properties :
- ✓ (i) Atomic Radii
 - (ii) Ionization Enthalpy

XIARWZJD21 – 5702-X

A-2-X

21. What is Baking Soda ? How is it prepared ? Give its uses.

✓ 22. What is Catenation ? How does catenation vary in the 14th group ?

23. What are Carbocations ? How are they classified ? Give their order of stability.

Or

Explain the Carius method for estimation of halogens.

24. Discuss the following properties of alkanes with examples :

(i) Boiling points

(ii) Solubility

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Or

✓ What is Aromaticity ? What are the necessary and sufficient conditions for a molecule to be aromatic ?

XIARWZJD21 – 5702-X

A-2-X

Turn Over

32
32

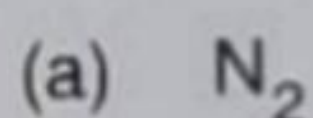
(Long Answer Type Questions)

5 each

25. What is a Covalent Bond ? Explain the formation of different covalent bonds with examples. What are polar and non-polar covalent bonds ?

Or

Write the molecular orbital configuration of the following species :



- (i) Calculate their bond order
- (ii) Predict their paramagnetic behaviour

26. (a) What is a Functional Group ? Write the functional groups of alcohol and carboxylic acids.

- (b) What is a Homologous Series ? Give the characteristics of homologous series.

Or

✓ Give an account of common types of organic reactions with suitable examples.

XIARWZJD21 – 5702-X

A-2-X

✓ 27. Write the structures of different chain isomers of alkanes corresponding to the molecular formula C_6H_{14} . Also write their IUPAC names.

Or

✓ What are Alkynes ? How are they prepared in the laboratory ? Give the chemical reactions of acetylene with Cl_2 and O_3/CH_2Cl_2 .

XIARWZJD21 – 5702-X

A-2-X

C-2-B

Roll No.....

Total No. of Questions : 27]

[Total No. of Printed Pages : 4

XIARKD21

5802-B

CHEMISTRY

Time : 2.30 Hours]

[Maximum Marks : 70

(Very Short Answer Type Questions)

1 each

1. Define Empirical Formula.
2. What is mass of 0.5 mole of Water ?
3. What is Catenation ?
4. Why do boron halides behave as Lewis acids ?
5. How does HBr react with 1-butene ?

(Short Answer Type Questions—I)

2 each

6. Give reason, which of the following set of quantum numbers are not possible :
 - (i) $n = 1, l = 1, m = 0, s = +1/2$
 - (ii) $n = 1, l = 0, m = 0, s = -1/2$

XIARKD21-5802-B

Turn Over

C-2-B

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7. Write general electronic configuration of s- and f-block elements.
8. ✓ What are extensive and intensive properties ? Give one example of each.
9. ✓ What is Entropy ? State the effect of increased temperature on entropy of a substance.
10. Calculate oxidation number of Mn in KMnO_4 .
11. ✓ Define Isotopes. Name the three isotopes of hydrogen.
12. ✓ What is Acid Rain ?

Or

Name some Hydrocarbon Pollutants.

(Short Answer Type Questions—II)

3 each

13. ✓ State and explain law of constant composition.
14. ✓ State and derive de-Broglie relationship.
15. ✓ Define Atomic Radii. Discuss its trend in periodic table.
16. Define vapour pressure. Name factors affecting vapour pressure.
17. ✓ Define Boyle's law. How is it represented mathematically ?
18. Name alkali metals and give their electronic configuration.

XIARKD21 – 5802-B

C-2-B

19. Explain the biological importance of magnesium and calcium.
20. Name the elements of group 14. Explain why first element of group shows anomalous behaviour.
21. Give IUPAC name of the following :
- (i)
$$\text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \underset{\text{CH}_3}{\text{CH}} - \text{CH}_2$$
- (ii)
$$\text{H}_3\text{C} - \text{CH} = \text{CH} - \text{CH}_2 - \text{CH}_3$$
- (iii)
$$\text{H}_3\text{C} - \underset{\text{CH}_3}{\text{CH}} - \text{C} \equiv \text{CH}$$
22. Explain homolytic and heterolytic fission of covalent bond.
23. Explain inductive effect.
24. What happens when :
- (i) ethyl alcohol is heated in presence of H_2SO_4 at 443K
- (ii) ethyl bromide is heated with alcoholic KOH

(Long Answer Type Questions)

5 each

25. What are Sigma and Pi-bonds ? Explain the different ways of their formation diagrammatically which one is stronger and why ?

Or

Define the term hybridisation. Using this concept explain the shapes of PCl_5 and SF_6 molecules. <http://www.jkboseonline.com>

26. State Le-Chatelier's principle. Give two examples of its application in chemical industries.

Or

Explain the term Ionic product of water and pH value. How does the former change with temperature ? What is pH scale ?

27. Write short notes on the following :

- (i) Friedal-Craft reaction
- (ii) Wurtz reaction

Or

Explain the structure of benzene and give its important chemical reactions.

XIARKD21 – 5802-B

C-2-B

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B-2

Roll No.....

2

Total No. of Questions : 27]

[Total No. of Printed Pages : 7

**XILKGAR21
5602
CHEMISTRY**

Time : 2.30 Hours]

[Maximum Marks : 70

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(Very-Very Short Answer Type Questions)

1 each

1. How many groups and periods are there in the modern periodic table ? (1)
2. What is the basis of classification of elements in the long form of the periodic table ?
3. Define Isolated System.
4. Which is the most abundant alkaline earth metal ?
5. What is the general formula of alkynes ?

CN.

XILKGAR21-5602

Turn Over

B-2

(Very Short Answer Type Questions)

6. What is the mass of 2 moles of H_2O ? (2)
7. What requirements should a molecule fulfil for the formation of hydrogen bond ? (2)
8. What is 'Buffer Solution' ? (2)

Or

What is 'pH' ?

9. Calculate oxidation number of S in $H_2S_2O_7$ and K in $KMnO_4$.
10. Define Hydrides. Name its *three* types.
11. What do you understand by catenation ? (2)
12. Name full form of BOD and COD. (2)

Bio chemical oxygen demand
Chemical oxygen demand
3 each

(Short Answer Type Questions)

13. Define Empirical formula and Molecular formula. What is relationship between them ? (2)

XILKGAR21-5602

B-2

14. Define electron gain enthalpy. Discuss its trend in periodic table. (3)

15. What is Covalent Bond ? Explain with suitable example. (3)

Or

Explain sp^3 hybridisation.

16. Define Boyle's Law. How is it represented Mathematically ? (3)

17. Explain the term Viscosity. What are its units ? What is effect of temperature on it ?

18. State and explain First Law of Thermodynamics. (3)

19. State and explain the 'Law of Chemical Equilibrium'. (3)

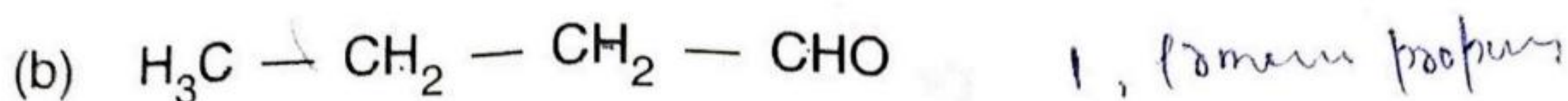
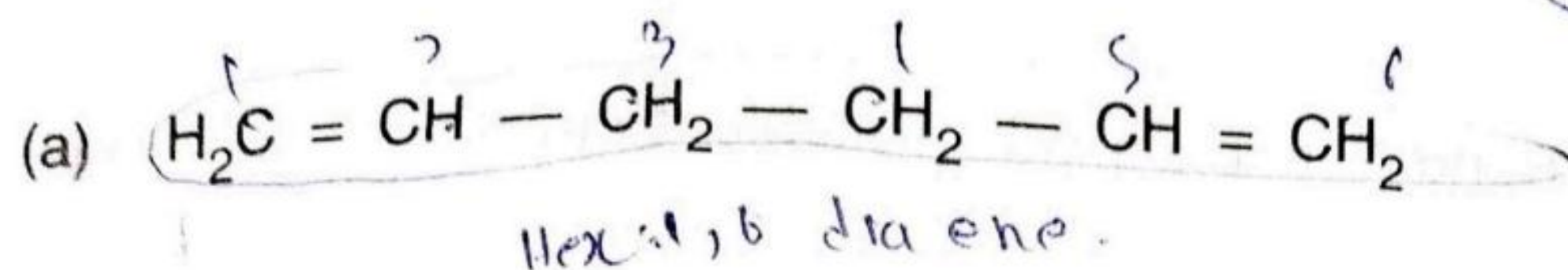
20. Name the elements of group 14 with their atomic numbers. Give their electronic configuration.

XILKGAR21 - 5602

B-2

Turn Over

21. Give IUPAC names of the following compounds :



22. What are Carboanions ? Discuss their various types.

23. Explain electrometric effect with examples.

24. What are necessary conditions for any compound to show aromaticity ?

(Long Answer Type Questions)

5 each

25. Give answer of the following questions in brief :

(i) What is de Broglie equation ?

(ii) Which quantum number determines the size of orbital ?

XILKGAR21-5602

B-2

(iii) What is shape of p -orbital ?

(iv) Write electronic configuration of O^{2-} (at no. 8).

(v) What are values of n and l for $3p$ orbitals ?

Or

Write short notes on the following :

(i) Aufbau's principle

(ii) Pauli's exclusion principle

26. Give reason for the following :

us

(i) Name two radioactive elements of s -block elements.

(ii) Why do alkaline earth metals have a greater tendency to form

complexes as compared to alkale metal ?

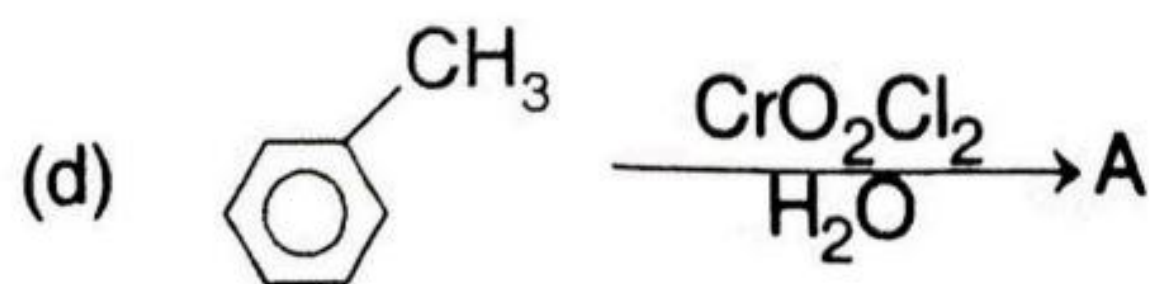
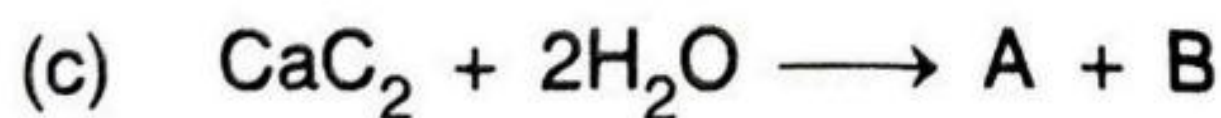
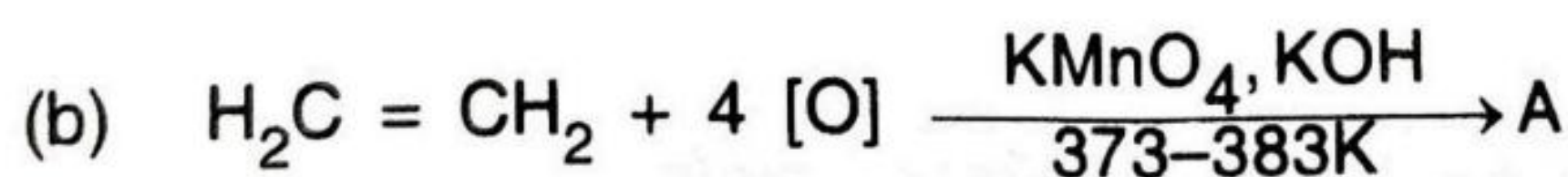
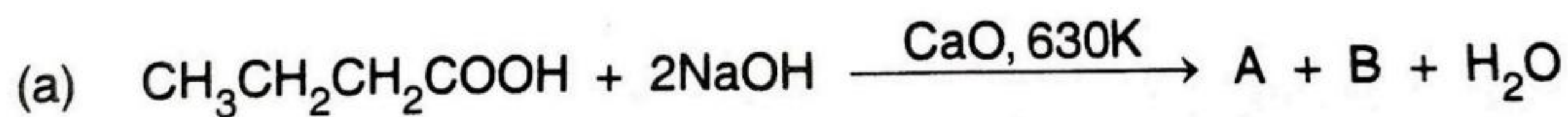
- (iii) How does solubility of hydroxides of alkaline earth metal vary ?
- (iv) What is slaked lime ?
- (v) Which s-block element involved in formation of Grignard's reagent ?

Or

What are s-block elements ? Discuss the anomalous behaviour of lithium in its group compare the properties of lithium with these of Magnesium.

27. Complete the following equations :

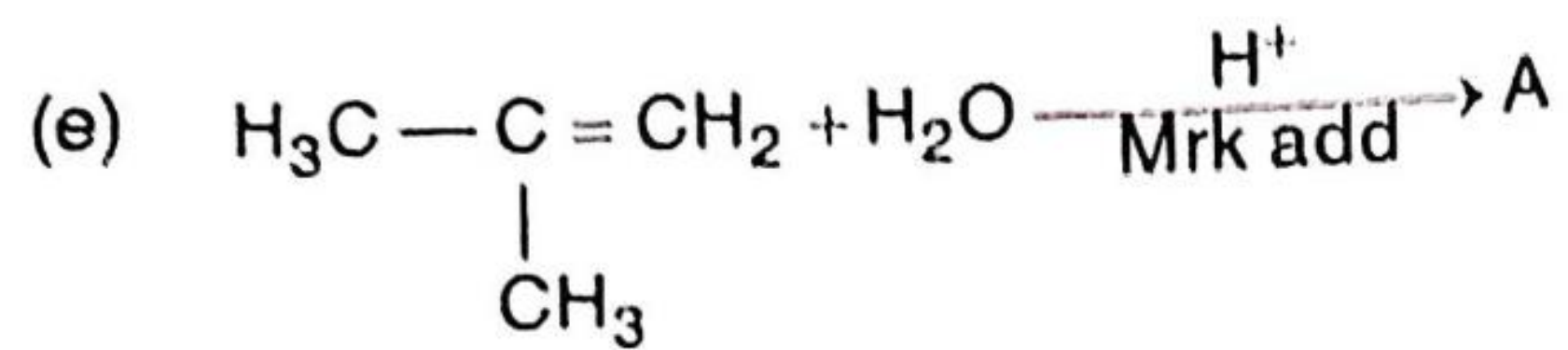
(5)



XILKGAR21 - 5602

B-2

(7)



Or

What are Arenes ? How are they classified ? Discuss briefly the isomerism and nomenclature of arenes.

XILKGAR21-5602

A-2-A

Roll No.....

Total No. of Questions : 27]

[Total No. of Printed Pages : 7

XIARKDD20
2702-A
CHEMISTRY

Time : 3 Hours]

[Maximum Marks : 70

(Very Short Answer Type Questions)

1. For a process to occur under adiabatic conditions, the correct condition is:

(A) $\Delta T = 0$

(B) $\Delta p = 0$

(C) $q=0$

(D) $w = 0$

2. What is the oxidation number of sulphur in H_2SO_4 ?

3. Define oxidation and reduction in terms of electrons.

4. Give the IUPAC name of $CH \equiv C - CH = CH_2$.

5. Out of ethylene and acetylene which is more acidic and why ?

(Short Answer Type Questions—I)

6. Define empirical formula and give its relation with molecular formula.

7. Write the electronic configuration of Fe and Fe^{3+} .

8. Define atomic radii. How does it vary along a period and down a group ?

9. Explain common ion effect with suitable examples.

10. What are Hydrides ? Name different types of hydrides.

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11. Eesh had red eyes. Aashi his sister took him to the doctor. The doctor diagnosed him to be suffering from conjunctivitis. The doctor washed his eyes with some eye lotion.

After reading the above passage, answer the following questions :

(i) What compound does eye lotion contain ?

(ii) What values are expressed by Aashi?

12. What is meant by B.O.D. and C.O.D. ?

Give two examples in which green chemistry has been applied.

(Short Answer Type Questions-II)

13. 1.3375 g of cupric oxide was reduced by heating in a current of hydrogen and the weight of copper remained was 1.098 g. In another experiment, 1.179 g of copper was dissolved in HNO_3 and resulting copper nitrate converted into CuO by ignition. The weight of CuO was 1.476 g. Show that these results, illustrates the law of constant composition.

14. State and explain Heisenberg's uncertainty principle.

15. What is Ionization Enthalpy ? Name the factors on which it depends. How does it vary along a period and down a group ?

16. With the help of gas laws, deduce an expression for the ideal gas equation.

17. What is the effect of temperature on :

(A) Density

(B) Surface tension

(C) Viscosity

(D) Vapour pressure of a liquid ?

18. State and explain the First Law of Thermodynamics.

Or

Given that $\Delta H = 0$ for mixing of two gases. Explain, whether the diffusion of these gases into each other in a container is a spontaneous process or not ?

19. What happens when :

(A) magnesium is burnt in air

(B) quick lime is heated with silica

(C) chlorine react with slaked lime ?

20. Name the elements of group-1 and write their electronic configurations.

21. Why is the temperature maintained around 393 K during the preparation of Plaster of Paris ? <https://www.jkboseonline.com>

22. +2 oxidation state of lead is more stable than +4 oxidation state. Give reasons.

23. Give three points of differences between inductive effect and resonance effect.

24. What effect the branching of an alkane has on its melting point ?

(Long Answer Type Questions)

25. Use the molecular orbital energy level diagram to show that N_2 would be expected to have a triple bond, F_2 a single bond and Ne_2 no bond.

Or

What is an ionic bond ? With two suitable examples, explain the difference between an ionic bond and a covalent bond.

26. Explain the following giving examples :

(i) Functional group

(ii) Homologous series and its characteristics.

Or

How will you detect the presence of carbon and hydrogen in an organic compound ?

27. In the presence of peroxide addition of HBr to propene takes place according to Anti-Markownikov's rule but peroxide effect is not seen in case of HCl and HI. Explain.

OR

Give the following reactions of Benzene:

(i) Halogenation

(ii) Sulphonation

(iii) Nitration

(iv) Friedel-Crafts reactions.

K-2-Y

Roll No.....

Total No. of Questions : 27]

[Total No. of Printed Pages : 7

XIKDRO/N19

25502-Y

CHEMISTRY

Time : 3 Hours]

[Maximum Marks : 70

General instructions :

- (i) All questions are compulsory
- (ii) Question nos. 1 to 5 are very short answer type questions and carry 1 mark each.
- (iii) Question nos. 6 to 12 are short answer type questions and carry 2 marks each.
- (iv) Question nos. 13 to 24 are also short answer type questions and carry 3 marks each.
- (v) Question nos. 25 to 27 are long answer type questions and carry 5 marks each.
- (vi) Use log table if necessary. Use of calculators is not allowed.

XIKDRO/N19-25502-Y

K-2-Y

Turn Over

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(Very Short Answer Type Questions)

1 each

1. Write the formula of the compound Iron (III) sulphate.
2. $\text{NaH} + \text{H}_2\text{O} \longrightarrow \text{NaOH} + \text{H}_2$. In this reaction NaH is :
- (A) Oxidised
- (B) Reduced
- (C) Neither oxidised nor reduced
- (D) None of these

3. Which has greater entropy at 400 K, N_2 or NH_3 .

4. Name two heterocyclic aromatic compounds.

5. Write IUPAC name of $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{OH}$.

(Short Answer Type Questions)

2 each

6. What is difference between the mass of a molecule and molecular mass.
7. Calculate the wavelength of an electron moving with a velocity of $2.05 \times 10^7 \text{ ms}^{-1}$.

XIKDRO/N19-25502-Y

K-2-Y

~~8.~~ Which of the following pairs of elements have a more negative electron gain enthalpy :

(i) O or F

(ii) F or Cl

~~9.~~ How do you express the bond length in terms of bond order ?

~~10.~~ Write chemical reactions to show amphoteric nature of water.

~~11.~~ What are DDT and BHC ?

Or

Name some hydrocarbon pollutants.

~~12.~~ What are electron deficient compounds ? Is BCl_3 electron deficient species ?
Explain.

(Short Answer Type Questions)

3 each

~~13.~~ Determine the molecular formula of an oxide of iron in which the mass percent of iron and oxygen are 69.9 and 30.1 respectively. Given that molar mass of the oxide is 159.8.

XIKDRO/N19-25502-Y

K-2-Y

Turn Over

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~~14~~ State and explain Hund's rule of maximum spin multiplicity.

15. Explain :

~~(i)~~ Covalent radius

~~(ii)~~ Van der Waals' radius

~~(iii)~~ Ionic radius.

~~16~~ What is bond order ? Give its significance.

~~17~~ A balloon is filled with hydrogen at room temperature. It will burst if the pressure exceeds 0.2 bar. If at 1 bar pressure the gas occupies 2.27 L volume, upto what volume can the balloon be expanded ?

~~18~~ Define Charles' law. How does it lead to the concept of absolute zero ?

~~19~~ State Hess's law. How does it follow the first law of thermodynamics ?

~~20~~ How will you prepare the following ?

~~(i)~~ Sodium carbonate from sodium chloride

~~(ii)~~ Sodium cyanide from sodium metal

~~(iii)~~ Sodium silicate from silica.

XIKDRO/N19-25502-Y

K-2-Y

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21. Teacher asked Hema to perform test for unsaturation in the laboratory for ethylene gas. She took some chlorine water in a test tube and passed the vapours of the gas through it. Nothing happened. Teacher asked her to pass the vapours of the gas into bromine water. The orange colour of bromine immediately discharged :

- (i) What was the mistake committed by Hema ?
- (ii) How did teacher help her ?
- (iii) Write chemical equation for the reaction.

22. What happens, when :

- (i) Magnesium is burnt in air
- (ii) Quick lime is heated with silica
- (iii) Chlorine reacts with slaked lime ?

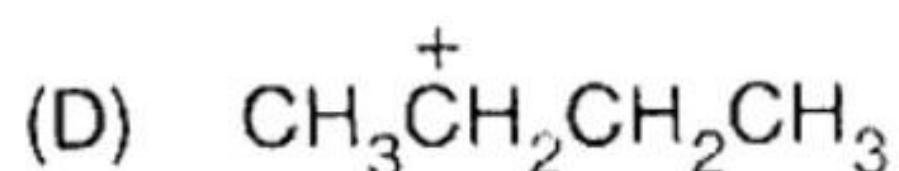
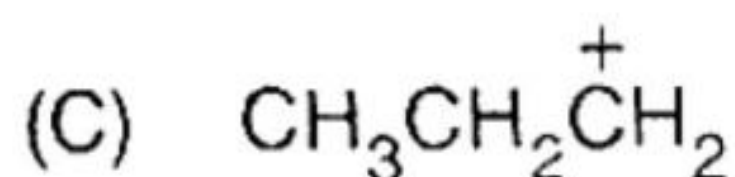
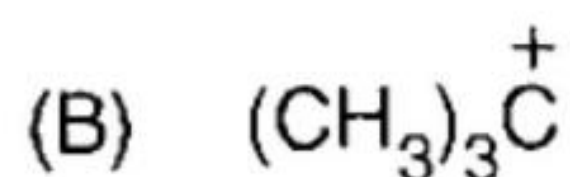
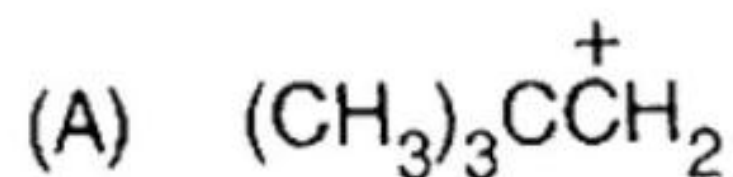
23. What are silicones, silicates and zeolites ?

24. On Complete combustion 0.246 g of an organic compound gave 1.98 g of carbon dioxide and 0.1014 g of water. Determine the percentage composition of carbon and hydrogen in the compound.

Or

(i) Why is it necessary to use acetic acid and not sulphuric acid for acidification of sodium extract for testing sulphur by lead acetate test ?

(ii) Which of the following carbocations is most stable ?



(iii) Name a suitable technique of separation of the components from a mixture of calcium sulphate and camphor.

(Long Answer Type Questions)

5 each

25. Explain inductive and electromeric effect with examples.

Or

How are nitrogen, sulphur and halogens identified in an organic compound ?

Give equations for the chemical reactions.

26. (i) An alkene 'A' on ozonolysis gives a mixture of ethanal and pentan-3-one. Write the structure and IUPAC name of 'A'.

(ii) Why is Wurtz reaction not preferred for the preparation of alkanes containing odd number of carbon atoms ?

XIKDRO/N19-25502-Y

K-2-Y

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(7)

Or

Write chemical equations for the combustion reactions of the following hydrocarbons :

(A) Butane

(B) Pentene

(C) Hexyne

(D) Toluene

~~27.~~ State and explain Le Chatelier's principle. Which factors can alter the equilibrium state ?

Or

50 ml of 0.001 N HCl and 10 ml of 0.01 N H_2SO_4 are mixed together.

Calculate pH of resulting solution.

XIKDRO/N19-25502-Y
K-2-Y

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A-Z-B

Total No. of Questions : 21]

[Total No. of Printed Pages : 7

X1RKDO18

20802-B

CHEMISTRY

Time : 3 Hours]

[Maximum Marks : 70

(Long Answer Type Questions)

1. State and explain :

(i) Pauli's exclusion principle

(ii) Hund's rule of maximum spin multiplicity

Or

What is meant by dual nature of a particle in motion ? Explain also dual nature of light radiations.

2. State and explain Le-Chatelier's principle. Which factors can alter the equilibrium state.

Or

Explain the terms :

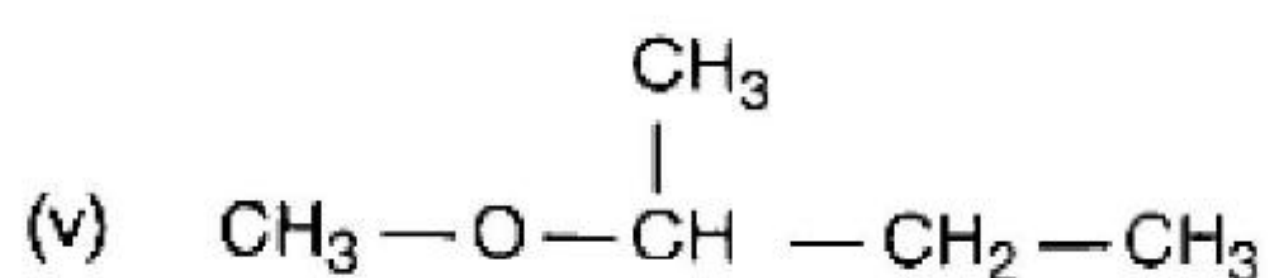
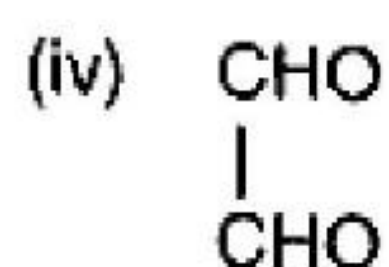
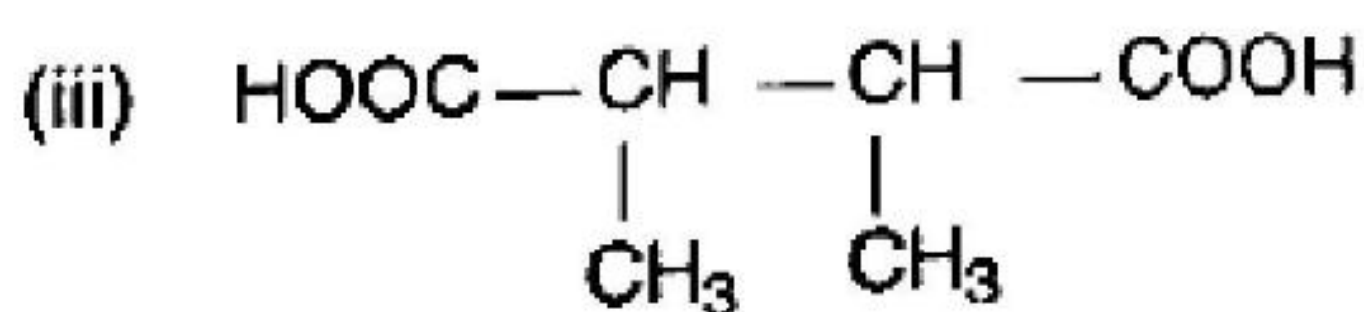
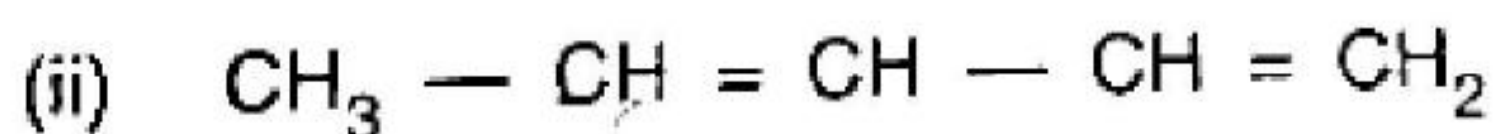
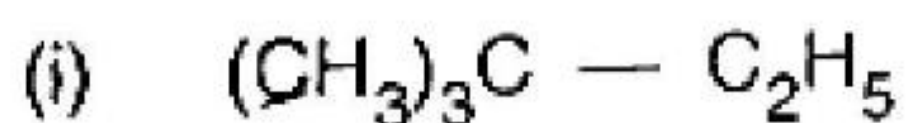
(i) Solubility product

(ii) Common ion effect

3. What are reaction intermediates ? Discuss the structure and relative stabilities of carbocation, carbanion and free radicals.

OR

Write IUPAC names of the following compounds :



4. What is Conformation ? Discuss the conformation of ethane.

OR

Discuss the mechanism of electrophilic substitution in benzene ring.

(Short Answer Type Questions)

5. State and explain law of conservation of mass and energy.
6. Distinguish between electron gain enthalpy and electronegativity.
7. Define Charle's law. How does it lead to the concept of absolute zero ?
8. Describe the factors which affect (a) surface tension, (b) viscosity.
9. State Hess's Law. How does it follow the first law of thermodynamics ?
10. Discuss anomalous behaviour of Beryllium.
11. Give biological importance of potassium.
12. What are silicones, silicates and zeolites?

(Very Short Answer Type Questions)

13. What are empirical and molecular formulae ?

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14. Which of the following compounds have polar covalent bond BeCl_2 , BF_3 , CO_2 and CCl_4 ?

15. BeCl_2 is a linear molecule whereas CaCl_2 is not, why?

16. Hydride of Be is covalent while that of Na is ionic, why ?

17. What are Boranes ?

18. How is mixture containing iodine and common salt purified ?

19. What is formed when a mixture of CH_4 and O_2 is passed over MoO_3 ?

20. Name the oxides of nitrogen which are pollutants.

(Objective Type Questions)

21. Choose the most appropriate option :

(i) Which pair of atomic numbers represents s-block elements ?

(A) 7, 15

(B) 6, 12

(C) 9, 17

(D) 3, 4

(ii) in the long form of periodic table all the non-metals are placed under:

(A) s-block <https://www.jkboseonline.com>

(B) p-block

(C) f-block

(D) d-block

(iii) The species having bond order different from that of CO_2 is :

(A) NO^-

(B) NO^+

(C) CN^-

(D) N_2

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(iv) At equilibrium Gibbs' free energy (ΔG) is :

(A) > 0

(B) < 0

(C) Zero

(D) depends upon reaction

(V) Oxidation number of Cr in CrO_5 is :

(A) +2

(B) +4

(C) +6

(D) +10

(vi) $-I$ effect is shown by :

(A) $-\text{COOH}$

(B) $-\text{C}_2\text{H}_5$

(C) $-\text{CHR}_2$

(D) $-\text{CH}_2\text{R}$

(vii) Which of the following will not be oxidised by O_3 ?

(A) KI

(B) FeSO_4

(C) KMnO_4

(D) K_2MnO_4

(viii) Which is strongest acid ?

(A) $\text{CH}_3\text{CH}_2\text{COOH}$

(B) $\text{CH}_3\text{CHClCOOH}$

(C) $\text{CH}_2\text{ClCH}_2\text{COOH}$

(D) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$

(ix) The compound with highest boiling point is :

(A) n-hexane

(B) n-pentane

(C) 2, 2-dimethyl propane

(D) 2-methyl butane

(x) Addition of HBr to 3-methyl-1-pentyne follows :

(A) Markownikov's rule

(B) Anti-Markownikov's rule

(C) Saytzeff rule

(D) None of these