PRINT

Qn No. 1 *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**What is the oxidation state of Mn in $MnCl_2$**

**(Oxidation stste of Cl= -1)**

**(a)-1 (b) +1 (c) +2 (d) -2**

**Hint.**
**+2**

***Marks :(1)***

Hide Answer

**Qn No. 2** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Iron with atomic number 26 shows +3 oxidation state in chemical reaction.**

**a .Write the subshell *electronic configuration of Fe.***

**b .Write the subshell *electronic configuration of the ion formed.***

**c .Write whether the element can show different oxidation state. *Justify?***

**Hint.**
**a. $1s^2 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^6\ 4s^2$**

**b. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5$**

**c. Yes .The d block elements can loose electrons from the outermost s subshell and inner d subshell**

***Marks :(3)***

Hide Answer

**Qn No. 3** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Analyse the table and answer the questions**

| Element (Symbols are not real) | Atomicnumber |
|---|---|
| P | 11 |
| Q | 18 |
| R | 16 |
| S | 26 |

**a . Which of the above is a first group element ?**

**b . Which is the valency of R?**

**c . Give the formula of the compound when P combines with R ?**

**d . Which of the above shows different oxidation state ?**

**Hint.**
**a. P**

**b. 2**

**c. $P_2R$**

**d. S**

***Marks :(4)***

Hide Answer

**Qn No. 4** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
***Match the following***

| A | B | C |
|---|---|---|
| $_{20}Ca$ | $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$ | *p*- block |
| $_{17}Cl$ | $[Ar]\ 3d^6\ 4s^2$ | *f*- block |
| $_{26}Fe$ | $[Ar]\ 4s^2$ | *d*- block |
| | | *s*-block |

**Hint.**

| A | B | C |
|---|---|---|
| $_{20}Ca$ | $[Ar]\ 4s^2$ | *s*-block |
| $_{17}Cl$ | $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$ | *p*- block |
| $_{26}Fe$ | $[Ar]\ 3d^6\ 4s^2$ | *d*-block |

***Marks :(3)***

Hide Answer

**Qn No. 5** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Subshell *electronic configuration of two elements are given .To which block ,period and group does each belong***

**(a) $1s^2\ 2s^2\ 2p^6\ 3s^2$** **(b) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^3\ 4s^2$**

**Hint.**
**a.**

**block- s**

***period*- 3**

***group*- 2**

**b.**

***block* - d**

*period-* **4**

**group - 5**

***Marks :(3)***

Hide Answer

**Qn No. 6** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**The outermost *electronic configuration of an element is* $3s^2\ 3p^4$**

**a . Write the complete *electronic configuration***

**b . What is the valency of this element?**

**c .Is it a metal or a non -metal? Justify your answer**

**Hint.**
**a. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$**

**b. 2**

**c .Non-metal**

**It gains two electrons in chemical reaction and attains stability.**

***Marks :(4)***

Hide Answer

**Qn No. 7** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Analyse the table and answer the questions**

| Elements (symbols are not real) | Atomic number |
|---|---|
| Elements (symbols are not real) | Atomic number |
| P | 11 |
| Q | 18 |
| R | 17 |
| S | 26 |

**a . Write the subsell *electronic configuration of S.To which block does it belong?***

**b . Which is an inert gas ?**

**c . Which of the above is a s block element?**

**Hint.**

**a. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^6\ 4s^2$ , d- ബ്ലോക്ക്**

**b. Q**

**c. P**

***Marks :(4)***

Hide Answer

**Qn No. 8** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**How many electrons can be accommodated in f subshell?**

**(a) 10** **(c) 6**

**(b) 7** **(d) 14**

**Hint.**
**(d) 14**

***Marks :(1)***

Hide Answer

**Qn No. 9** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Which are the subshells present in L shell**

**a. *s,p,d***

**b. *s,p,d,f***

**c. *s***

**d. *s,p***

**Hint.**
**d (*s,p*)**

***Marks :(1)***

Hide Answer

**Qn No. 10** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Arrange the subshell in the correct oder of electron filling?**

**4s 3d 2p 3s 2s 1s 3p 4p**

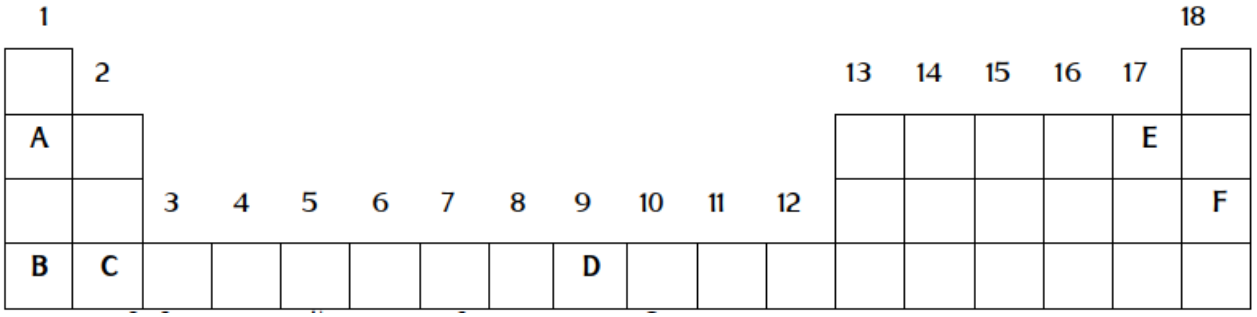
**Hint.**
**1s 2s 2p 3s 3p 4s 3d 4p**

***Marks :(1)***

Hide Answer

**Qn No. 11** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Part of the *Periodictable is given (symbols are not real )***




**a . Which are the s block elements?**

**b .Which may form coloured compounds ?**

**c . Which is the least reactive metal in group 1 ?**

**d . Find the element with only 1 electron in 4s subshell ?**

**Hint.**
**a. A , B, C**

**b. D**

**c. A**

**d. B**

***Marks :(4)***

Hide Answer

**Qn No. 12** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**The d subshell of an element with 4 shells is completely filled and there are two electrons in the $4^{th}$ shell**

**a .How many electrons can be accommodated in d sub shell ?**

**b.Write the subshell electronic configuration of the element.**

**Hint.**
**a. 10**

**b. $1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^6$ $3d^{10}$ $4s^2$**

***Marks :(2)***

Hide Answer

**Qn No. 13** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**The oxidation state shown by an element of the second period is -2**

**a.How many electrons are there in the outer most shell of this element?**

**b.Write down the s*ubshell electronic configuration of the element.***

**Hint.**
**a. 6**

**b. $1s^2\ 2s^2\ 2p^4$**

***Marks :(2)***

Hide Answer

**Qn No. 14** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**There are 7 electrons in the third shell of an element**

**a. Write its subshell *electronic configuration,***

**b. Find the group and block of this element**

**Hint.**
**a.$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$**

**b. group- 17, block - p**

***Marks :(2)***

Hide Answer

**Qn No. 15** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**The electronic configuration of Chromium ($_{24}$ Cr ) written as [Ar] $3d^4\ 4s^2$**

**Is it correct? Give reason**

**Hint.**
**Not correct. Half filled subshell give more stability. So the electronic configuration willbe [Ar]$3d^5 4s^1$**

***Marks :(2)***

Hide Answer

**Qn No. 16** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Match the following.**

| A | B | C |
|---|---|---|
| s- block | Electron filling occurs in the penultimate shell | Inner transition metals |
| p-block | Lanthanoids | Low ionisation energy |
| d- block | High Electronegativity | Elements in three states |
| f- block | Reactive metals | transition metals |

**Hint.**

| A | B | C |
|---|---|---|
| s- block | Reactive metals | Low ionisation energy |
| p-block | High Electronegativity | Elements in three states |
| d- block | Electron filling occurs in the penultimate shell | transition metals |
| f-block | Lanthanoids | Inner transition metals |

***Marks :(4)***

Hide Answer

**Qn No. 17** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**The element A belong to second period and 17$^{th}$ group and the element B belong third period and second group of the periodic table.(Symbols shown are not real)**

**a .Write the subshell electronic configuration of A**

**b . To which block does B belong? Whatis its valency?**

**c . Give the formula of the compound by A and B**

**Hint.**
**a - $1s^2\ 2s^2\ 2p^5$**

**b - block - s**

**valency- 2**

**c - $BA_2$**

***Marks :(4)***

Hide Answer

**Qn No. 18** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Which of the following is not a *charateristics of p block elements*?**

**a .High electronegativity**

**b .Belongs to 13 to 18 group.**

**c . High ionisation energy**

**d . High metallic nature**

**Hint.d** ***Marks :(1)***

Hide Answer

**Qn No. 19** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Which of the following electronic configuration is that of an inert gas?**

**a,$1s^2\ 2s^2\ 2p^4$**

**b,$1s^2\ 2s^2\ 2p^6$**

**c,$1s^2\ 2s^2\ 2p^6\ 3s^2$**

**d,$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^2$**

**Hint.**
**b**

***Marks :(1)***

Hide Answer

**Qn No. 20** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Analyse the subshell electronic configuration and answer the questions**

**( Symbols are not real)**

**A - $[Ne]\ 3s^2\ 3p^2$**

**B - $[Ne]\ 3s^2$**

**C -$[Ar]\ 4s^1$**

**D -$[Ar]\ 4s^2\ 3d^2$**

**a .Which of the above has highest ectronegativity?**

**b . Which element shows different oxidation state?**

**c .How many p electrons are there in the atom C?**

**d . Which has the lowest ionisation energy?**

**Hint.**
**a. A**

**b. D**

**c. 12**

**d. C**

***Marks :(4)***

Hide Answer

**Qn No. 21** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Complete the table**

| Electronicconfiguration | State | Period | Group |
|---|---|---|---|
| [Ne] $3s^2$ | solid | 3 | (a) |
| [Ar] $3d^3\ 4s^2$ | (b) | (c) | 5 |
| [Ar] $4s^1$ | solid | (d) | (e) |
| [Ne] $3s^2\ 3p^6$ | (f) | 3 | 18 |

**Hint.**
**a. 2**

**b.solid**

**c. 4**

**d. 4**

**e. 1**

**f. gas**

***Marks :(3)***

Hide Answer

**Qn No. 22** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**The atomic number of A,B,C and D are 12,17,19 and 25 respetively (Symbols are not real)**

**a . write the subshell *electronic configuration of B***

**b . Find the group and block of D**

**c .Which among the above shows -1 oxidation state?**

**d. Write the subshell electronic configuration of D**

**Hint.**
**a. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$**

**b. block- d ; group - 7**

**c. B**

**d. $1s^2\ 2s^2\ 2p^6 3s^2\ 3p^6 3d^5 4s^2$**

***Marks :(4)***

Hide Answer

**Qn No. 23** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
***Subshell electronic configuration of some elements are given***

***( symbols are not real)***

**A - [Ne] $3s^1$**

**B - [Ar] $4s^2$**

**C - [Ar] $3d^6\ 4s^2$**

**D - [Ne] $3s^2\ 3p^4$**

**a .What is the atomic number of B?**

**b . Which among the above has the highest electronegativity ?**

**c . Name the element,the oxide of which shows acidic nature?**

**d .Which of the above elements form coloured compound?**

**Hint.**
**a) 20**

**b) D**

**c) D**

**d) C**

***Marks :(4)***

Hide Answer

**Qn No. 24** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Atomic number of the element of X is 25.The oxides are $X_2O_3$ and $X_2O_5$**

**a . Write down the subshell electronic configuration of X?**

**b. What is the oxidation state of X in $X_2O_3$ ?**

**( oxidation number of oxygen is -2)**

**c . To which period and block does this element belong?**

**Hint.**
**a. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5\ 4s^2$**

**b. +3**

**c. Group - 7**

**period - 4**

***Marks :(4)***

Hide Answer

**Qn No. 25** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
***Subshell electronic configuration*** **of some elements are given(Symbols are not real)**

**A - $1s^2\ 2s^2\ 2p^4$**

**B - $1s^2\ 2s^2\ 2p^6\ 3s^1$**

**C - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^1$**

**D - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^6\ 4s^2$**

**a Find the atomic number of B**

**b . Which subshell in D has the highest energy?**

**c . To which period does C belong?**

**d .Write theformula of the compound formed by A and B**

**Hint.**
**a. 11**

**b. 3d**

**c. 4**

**d. $B_2A$**

***Marks :(4)***

Hide Answer

**Qn No. 26** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**• The element Z has 2 Shells**

**• It always shows -1 oxidation state**

**a .Write the subshell electronic configuration of the element**

**b . Find the block and group of this element**

**cWrite the formula of the compound formed when it reacts with Aluminium**

**(Valency of Al = 3)**

**Hint.**
**a. $1s^2\ 2s^2\ 2p^5$**

**b. block - p**

**Group - 17**

**c. $AlZ_3$**

***Marks :(3)***

Hide Answer

**Qn No. 27** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Complete the table related with the oxides of manganese( Atomic No;Mn=25)**

| Compound | Oxidation state of Mn | Subshell electronic configuration of manganese ion |
|---|---|---|
| $MnO_2$ | +4 | (a) |
| $Mn_2O_3$ | (b) | $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^4$ |
| (c) | +7 | $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$ |

**Hint.**
**a.$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^3$**

**b. +3**

**c. $Mn_2O_7$**

***Marks :(3)***

Hide Answer

**Qn No. 28** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Analysis the given electronic configurations and answer the questions**

**(Symbols given are not real )**

**A -$1s^2\ 2s^2\ 2p^6 3s^2 3p^5$**

**B -$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^1$**

**C -$1s^2\ 2s^2\ 2p^6\ 3s^1$**

**D -$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$**

**i) .Which among the above is the biggest atom?**

**ii) . Which element normally shows +1 oxidation state?**

**iii). Write the formula of the compound formed by A and B**

***iv) Which one of the above is s block element*?**

**Hint.**
**i) C**

**ii) C**

**iii) $BA_3$**

**iv) C**

***Marks :(4)***

Hide Answer

**Qn No. 29** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Find the relation and fill up**

**[Ne] $3s^2$ $3p^4$ : Group 16 [Ar] $3d^3$ $4s^2$ : Group ___**

**Hint.**
**Group - 5**

***Marks :(1)***

Hide Answer

**Qn No. 30** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Some *Characteristic of Manganese are given***

**● There are 4 shells.**

**●Last 5 electrons enter d subshell**

**a . Write the subshell electronic configuration of manganese**

**(Oxidation number: O = -2)**

**b .Write the subshell electronic configuration of manganese ion in $MnO_2$.**

**c .Write any two characteristics of the block to which this element belongs.**

**Hint.**
**a. $1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^6$ $3d^5$ $4s^2$**

**b. $1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^6$ $3d^3$**

**c. any two *Characteristics of d block***

***Marks :(4)***

Hide Answer

**Qn No. 31** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**The element Y shows oxidation numbers +2, +3**

**a . Name the block to which Y may belong ?**

**b: Write the formula of any chloride of Y**

**( Hint:Valency of Chiorine- 1)**

**Hint.**
**a. *d*- block**

**b. $YCl_2$ or $YCl_3$**

***Marks :(2)***

Hide Answer

**Qn No. 32** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**The Atomic number of Iron is 26 and shows +3 oxidation state when it combines with oxygen(valency of oxygen=2)**

**a . Write the formula of the compound**

***b* . Write the subshell electronic configuaration of $Fe^{3+}$**

**Hint.**
**a. $Fe_2O_3$**

**b. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5$**

***Marks :(3)***

Hide Answer

**Qn No. 33** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
***Analyse the given subshell electronic configuaration and answer the question***

**A - $1s^2\ 2s^2\ 2p^6$**

**B - $1s^2\ 2s^2\ 2p^6\ 3s^2 3p^4$**

**C - $1s^2 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^6\ 4s^2$**

**D - $1s^2\ 2s^2\ 2p^6\ 3s^2$**

**a. Which is the element that shows -2 oxidation number?**

**b. Which is the element that does not take part in chemical reaction ?**

**c. Which element shows different oxidation states?**

**Hint.**
**a. B**

**b. A**

**c. C**

***Marks :(3)***

Hide Answer

**Qn No. 34** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Question: Third shell of an element X contains 6 electrons.**

**a. Write down the subshell electronic configuration of the element**

**b.Find the block and the group of the element.**

**c.Write the subshell electronic configuration of the element of the**

**same group with two subshells in its outer most shell.**

**Hint.**
**a. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$**

**b. *p* -Block, Group- 16**

**c. $2s^2\ 2p^4$**

***Marks :(3)***

Hide Answer

**Qn No. 35** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Of the given two subshell elecrtonic configuration of an element A**

**( symbol is not real)**

**i) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^1$**

**ii)$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^1$**

**a. Find the correct elecrtonic configuration of the element “A”**

**b. To which blockof the periodictable does this element belong ?**

**c. Write the formula of the oxide of this element**

**(Valency : Oxygen= 2 )**

**Hint.**
**a. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^1$**

**b. *s* - Block**

**c. $A_2O$**

***Marks :(3)***

Hide Answer

**Qn No. 36** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Complete the table (Symbols are not real )**

| Elements | Subshell electronic configuration | Period number | Group number |
|---|---|---|---|
| A | $1s^2\ 2s^2$ | 2 | 2 |
| B | $1s^2\ 2s^2\ 2p^1$ | 2 | (a) |
| C | (b) | 3 | 17 |
| D | $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^2\ 4s^2$ | (c) | 4 |

**Hint.**
**a. 13**

**b. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$**

**c. 4**

***Marks :(3)***

Hide Answer

**Qn No. 37** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
***Some subshells are given.Find out the subshells which are not possible***

***(3s, 1p, 3f, 3d)***

**Hint.**
**1p , 3f**

***Marks :(1)***

Hide Answer

**Qn No. 38** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Which of the following elements have half filled p sub shell?**

**a) $_7$N b)$_{13}$Al c)$_5$B d) $_{15}$P**

**Hint.**
**a) $_7$N d) $_{15}$P**

***Marks :(2)***

Hide Answer

**Qn No. 39** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**Some electronic configurations are given below.**

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

b)$1s^2 2s^2 2p^4$

c)$1s^2 2s^2 2p^6 3s^2 3p^5$

d)$1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10}\ 4s^1$

a)Which among the above is the smallest atom?

b)Which of the above is the configuration of $Ca^{2+}$ ion

(Atomic number of Ca=20)

c)Why calcium looses 2 electrons in chemical reaction. Explain on the basis of above configuration?

d)which among the above shows -1 oxidation state?

Hint.
a) $1s^2 2s^2 2p^4$

b $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$

c)On loosing 2 electrons it attains inert gas configuration.

d) $1s^2 2s^2 2p^6 3s^2 3p^5$

*Marks :(4)*

Hide Answer

**Qn No. 40** *Chapter Name:Periodic Table and electronic configuration*

Qn.
Match suitably

| A | B |
|---|---|
| $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$ | Shows different oxidation states |
| $1s^2\ 2s^2\ 2p^6$ | More reactive Metal |
| $1s^2\ 2s^1$ | High ionisation energy |
| $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5\ 4s^2$ | Non-metals |

Hint.

| A | B |
|---|---|
| $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$ | Non-metals |
| $1s^2\ 2s^2\ 2p^6$ | High ionisation energy |
| $1s^2\ 2s^1$ | Metal |
| $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5\ 4s^2$ | Shows different oxidation states |

*Marks :(2)*

Hide Answer

**Qn No. 41** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**The last electron of an atom enters the 3d sub shell.There are 3 electrons in it.**

**a) How many electrons are there in the outer most shell?**

**b) Write the subshell electronic configuration of this element?**

**c) Write any two characteristics of the block to which it belongs.**

**Hint.**
**a) 2**

**b) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^3\ 4s^2$**

**c) Different oxidation states/ Forms coloured compounds/ Show similar properties in groups and properties/ All are metals ( Any two )**

***Marks :(4)***

Hide Answer

**Qn No. 42** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**
**Correct the wrong statements if any.**

**a) As distance from nucleus increaes energy of shells decreases.**

**b) Electron filling occurs in the increasing order of energy.**

**c) As distance increases attraction between the nucleus and electron decreases.**

**d) Number of subshells in a shell will always be greater than the shell number**

**Hint.**
**a) As distance from nucleus increaes energy of shells increases.**

**d) Number of subshells in a shell will always be equal to the shell number**

***Marks :(2)***

Hide Answer

**Qn No. 43** *Chapter Name:Periodic Table and electronic configuration*

**Qn.**

**A part of the periodic table is given below(Symbols are not real)**

| | | |
|---|---|---|
| | | |
| | P [Ne]$3s^2 3p^4$ | |
| | Q | R |

**a . To which block does P,Q,R belong?**

**b .To which period and group does Q belong?**

***c . Write the subshell electronic configuration of R.***

**Hint.**
**a. Block -*p***

**b. Group - 16**

**Period- 4**

**c. [Ar] $3d^{10}$ $4s^2$ $4p^5$**

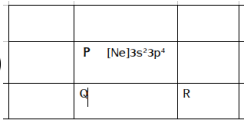
***Marks :(4)***

Hide Answer

**Qn No. 44** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**

**A part of the periodic table is given below(Symbols are not real)**




**a . To which block does P,Q,R belong?**

**b .To which period and group does Q belong?**

***c . Write the subshell electronic configuration of R.***

**Hint.**
**a. Block -*p***

**b. Group - 16**

**Period- 4**

**c. [Ar] $3d^{10}$ $4s^2$ $4p^5$**

***Marks :(4)***

Hide Answer

**Qn No. 45** ***Chapter Name:Periodic Table and electronic configuration***

**Qn.**
**The subshell electronic configuration of an element is $1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^5$.**

**a) How many 'p'electrons are there in it?**

**b)What is its atomoc number?**

**c)Is it a metal or a non metal.Justify.**

**Hint.**
**a)11**

**b)17**

**c) Non metal.**

**As it has 7 electrons in its outermost shell/ 5 electrons in outer most p subshell,it gains 1 electron in chemical reaction.So it is a non metal.**

***Marks :(4)***

Hide Answer

PRINT

Qn No. 1 *Chapter Name:Gas laws and Mole concept*

**Qn.**
***The volume of a fixed mass of gas at 300K is 10L.What will be the volume of the gas,if the temperature is doubled without changing the pressure.***

**Hint.**
**Volume and temperature are directly proportional.Therefore volume changes to 20L / Volume doubled .**

***Marks :(2)***

Hide Answer

**Qn No. 2** *Chapter Name:Gas laws and Mole concept*

**Qn.**
***The relation showing the volume and temperature of fixed mass of gas at constant pressure is tabulated below.***

| Volume V(L) | Temperature T(K) | V / T |
|---|---|---|
| 600 | 300 | 2 |
| 800 | .....(a)..... | 2 |
| .....(b)..... | 450 | 2 |

**i) Find out the values of a and b.**

***ii)State the gas law associated with this.***

**iii) Write down any one instance from daily life related with this law.**

**Hint.**
**i) a = 400, b = 900**

**ii) At constant pressure,the volume of a definite mass of a gas is directly preportional to the temperature in kelvin scale.**

**iii) Writes suitable situations.**

***Marks :(4)***

Hide Answer

**Qn No. 3** *Chapter Name:Gas laws and Mole concept*

**Qn.**
***a) What happens to the size of a gas bubble rising from the bottom of a water body?why?***

**b)Which is the gas law assosiated with this?**

**Hint.**
**a)size increases**

**As the bubbles move from bottom to top in a water body,pressure decreases and correspondingly the volume increases.**

**b)Boyle's law**

*Marks :(3)*

Hide Answer

**Qn No. 4** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**The volume of a fixed mass of gas at 2 atm pressure is 20L.What will be its volume if the pressure is increased 4 times without changing the temperature.**

**Hint.**
**PV = a constant**

**2 x20 = 40**

**8 x X = 40**

**X = 40 / 8 =5**

**Volume changes to 5 L.**

*Marks :(2)*

Hide Answer

**Qn No. 5** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**The data of an experiment conducted on a fixed mass of gas at constant temperature are given**

| Pressure P(atm) | Volume V(L) | PV |
|---|---|---|
| 1 | 10 | .....(a).... |
| 2 | ......(b)..... | 10 |
| .....(c)..... | 2.5 | 10 |

**i)Complete the table and find out the speciality of PV.**

**ii)What is the relation between pressure and volume?**

**iii) Which gas law can be proved by this experiment?**

**Hint.**
**i) a = 10,b = 5L, c = 4 atm, PV ia a constant**

**ii)Volume and pressure are inversely propotional.**

**iii)Boyle's law**

*Marks :(4)*

Hide Answer

**Qn No. 6** *Chapter Name:Gas laws and Mole concept*

**Qn.**
***What happenens to the following when the temperature of a gas in a closed container is increased ?***

**a) Kinetic energy**

**b)Pressure**

**Hint.**
**a) Kinetic energy increases**

***b)*Pressure increases**

***Marks :(2)***

Hide Answer

**Qn No. 7** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
***When a gas contained in a 2L cylinder is completely transferred to a 4L cylinder,the volume of the gas will be .....***

**Hint.**
**4L**

***Marks :(1)***

Hide Answer

**Qn No. 8** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Select the statements suitable to gases from those given below.**

**a) Intermolecular distance is very low.**

**b)The volume of gas depends on the volume of the container in which it is occupied.**

**c)The energy of gaseous molecules is very high.**

**d)The attractive force between gaseous molecules is very high.**

**Hint.**
**b)The volume of gas depends on the volume of the container in which it is occupied**

**c / The energy of gaseous molecules is very high.**

***Marks :(2)***

Hide Answer

**Qn No. 9** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**a) How many moles are there in 140g Nitrogen?.**

**b) How many atoms are there in 140g Nitrogen?**

**(Atomic mass : N- 14 )**

**Hint.**
**(a) 5**

**(b) 10**

***Marks :(2)***

Hide Answer

**Qn No. 10** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Find out the molecular mass of the following compounds**

**(Atomic Mass : Ca - 40 , N- 14 , C - 12 , O -16 , H- 1)**

**a) $Ca(NO_3)_2$ b) $C_{12}H_{22}O_{11}$**

**Hint.**
**a = 164, b = 342**

***Marks :(2)***

Hide Answer

**Qn No. 11** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**$N_2 + 3\ H_2 \rightarrow 2NH_3$**

**The ratio of reactants and products in the above reaction is 1:3:2 .Complete the table related with this reaction.**

| | Chemical reaction | | |
|---|---|---|---|
| | Reactants | | Products |
| | $N_2$ | $H_2$ | $NH_3$ |
| Moles | (a) | 6 | 4 |
| Molecules | 4 x 6.022 x$10^{23}$ | (b) | 8 x 6.022 x$10^{23}$ |
| Volume at STP | (c) | 69.2 L | 44.8 L |
| Mass | 140 g | 30 g | (d) |

**Hint.**
**a) 2**

**b) 12 x6.022 x$10^{23}$**

**c) 22.4 L**

**d) 170 g**

***Marks :(4)***

Hide Answer

**Qn No. 12** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**$NaOH + HCl \rightarrow NaCl + H_2O$**

**a) How many moles of NaOH is needed to completely react with 1 mole of HCl ?**

**b) How many grams of HCl is required to completely neutralise 160g NaOH ?**

**Hint.**
**a) 1**

**b) 146 g**

***Marks :(3)***

Hide Answer

**Qn No. 13** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Analyse the following equation and answer the questions**

**$2Na + Cl_2 \rightarrow 2NaCl$**

**a) What is the ratio of reactant molecules and product molecules?**

**b)How many moles of NaCl will be obtained on reaction of 10 moles of chlorine ?**

**c) Find the mass of sodium required to get so much amount of NaCl .**

**Hint.**
**a) 2:1:2**

**b)20mole**

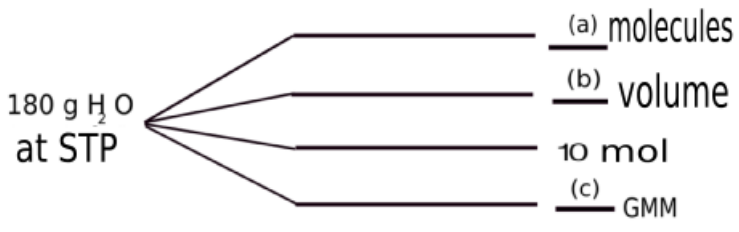
**c) 20x 23 = 460g**

***Marks :(3)***

Hide Answer

**Qn No. 14** *Chapter Name:Gas laws and Mole concept*

**Qn.**




**i) (i)Find a,b and c**

**ii) How many grams of $H_2O$ is required to get 5 x 6.022 x $10^{23}$ molecules ?**

**Hint.**
**i)**

**a) 10 x 6.022 x $10^{23}$**

**b) 224 L**

**c) 10 GMM**

**ii)**

**90 g $H_2O$**

***Marks :(4)***

Hide Answer

**Qn No. 15** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Which of the following have the same number of moles ?**

**[4 GMM $H_2$ , 88 g $CO_2$ , 89.6 L $O_2$ , 4 g He]**

**Hint.**
**4 GMM $H_2$ , 89.6 L $O_2$**

***Marks :(1)***

Hide Answer

**Qn No. 16** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Which one contains 2 x 6.022 x$10^{23}$ Molecules ?**

**(28 g $N_2$ , 2 g $H_2$ , 32 g $O_2$ , 44.8 L $CO_2$)**

**Hint.44.8 L $CO_2$** ***Marks :(1)***

Hide Answer

**Qn No. 17** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Which one is used as the basis of atomic mass now a days?**

**(H-1 , C-12 , C-14 , O – 16)**

**Hint.**
**C-12**

*Marks :(1)*

Hide Answer

**Qn No. 18** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**4 x 6.022 x 10 $^{23}$ Chlorine molecules at STP are taken. Answer the following**

**questions(Atomic mass : Chlorine = 35.5)**

**a) What is its volume at STP ?**

**b) What is the mass of this compound?**

**c) $H_2 + Cl_2 \rightarrow 2HCl$**

**How many molecules of hydrogen are required to completely react with 4 x6.022x10$^{23}$ molecules of chlorine ?**

**Hint.**
**a) 89.6 L**

**b) 284 g**

**c) 4 x 6.022x10$^{23}$**

*Marks :(3)*

Hide Answer

**Qn No. 19** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Volume of 2 x 6.022x10$^{23}$ molecules of a gas at STP is _____**

**Hint.**
**2 x 22.4L = 44.8 L**

*Marks :(1)*

Hide Answer

**Qn No. 20** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Mass of ¼ x 6.022x10$^{23}$ Oxygen molecule is _____ .**

**(Hint : Oxygen- Molecular mass = 32)**

**Hint.**
**8 g**

*Marks :(1)*

Hide Answer

**Qn No. 21** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Complete the table.**

| Substance | Volume at STP | Number of moles | Mass(g) |
|---|---|---|---|
| $CO_2$ | 44.8 L | 2 | 88 |
| $CH_4$ | (a) | (b) | 4 g |
| $NH_3$ | 11.2 L | (c) | (d) |

**(Hint : MM : $CO_2$ = 18 , $CH_4$ = 16 , $NH_3$ = 17 )**

**Hint.**
**a) 1/4 x 22.4 = 5.6 L**

**b) ¼ or 0.25**

**c) ½**

**d) 8.5 g**

***Marks :(4)***

Hide Answer

**Qn No. 22** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**$N_2$ + 3 $H_2$ → 2 $NH_3$**

**Number of moles of hydrogen required to completely react with 2moles of nitrogen is _____**

**Hint.**
**6 mole hydrogen**

***Marks :(1)***

Hide Answer

**Qn No. 23** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**360 g glucose [$C_6H_{12}O_6$] is given.**

**a) How many molecules are there in the sample ?**

**b) What is the total number of atoms in the sample? (Hints: Molecular mass $C_6H_{12}O_6$ = 180)**

**Hint.**
**a) GMM of $C_6H_{12}O_6$ = 180 g**

**Number of moles in 360g glucose = 360g / 180 g = 2**

**Number of molecules = 2 x $6.022x10^{23}$**

**b) Total number of atoms = 2 x $6.022x10^{23}$ x 24**

**( 1 molecule of glucose( $C_6H_{12}O_6$) contains 24 atoms )**

***Marks :(2)***

Hide Answer

**Qn No. 24** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Which of the samples given below contains 1mole Oxygen atoms ?**

**(Atomic mass O = 16 )**

**a. 16 g Oxygen .**

**b. 8g Oxygen.**

**c . 32 g Oxygen.**

**d . 22.4 L oxygen at STP**

**Hint.**
**a. 16 g Oxygen.**

***Marks :(1)***

Hide Answer

**Qn No. 25** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Some samples are given**

**(P) 22.4 L $NH_3$ (Q) 22 g $CO_2$ (R) 64 g $SO_2$ (S) 117 g NaCl**

**(GMM : $NH_3$ = 17 g , $CO_2$ = 44 g (c) $SO_2$ = 64 g (d) NaCl = 58.5 g)**

**a) Which among the above are having the same moles?**

**b) How many molecules are there in sample Q?**

**c) How many grams of $NH_3$ are needed to get the same number of molecules in sample S ?**

**Hint.**
**a) P, R**

***b) 22 g $CO_2$ is* 0.5 mole, Numer of molecules = ½ x $6.022x10^{23}$**

**(c)117 g NaCl= 2mole = 2 x $6.022x10^{23}$ molecules**

**Mass of 2 mole $NH_3$ = 2 x 17 g = 34 g**

***Marks :(4)***

Hide Answer

**Qn No. 26** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Which among the following samples have the same number of molecules.**

**a) 88 g $CO_2$ b) 54 g $H_2O$ c) 4 g $H_2$ d) 17 g $NH_3$**

**(Atomic mass : C = 12 , O = 16 , H = 1 ,N =14 )**

**Hint.a, c** *Marks :(2)*

Hide Answer

**Qn No. 27** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**The equation showing the reaction of Zinc with hydrochloric acid is given.**

**$Zn + 2HCl \rightarrow ZnCl_2 + H_2$**

**a) How many molecules of $ZnCl_2$ will formed on complete reaction of 65g Zn with HCl?**

**b) What will be the volume of $H_2$ formed at STP when 6.5g Zn reacts with HCl.**

**(Hint:Atomic mass : Zn = 65 , Cl = 35.5 , H= 1 )**

**Hint.**
**a) $6.022x10^{23}$ (1 മോൾ - ½ സ്കോർ )**

**b) 0.1 x 22.4 ലിറ്റർ = 2.24 ലിറ്റർ**

*Marks :(3)*

Hide Answer

**Qn No. 28** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**$2Mg + O_2 \rightarrow 2MgO$**

**The equation showing the burning of Magnesium is given. suppose 120g of Mg is burned.**

**a) How many atoms are there in 120g Mg ?**

**b) How much will be the volume of oxygen at STP to burn this much Mg?**

**c ) What will be the mass of Magnesium Oxide formed ?**

**(Hint : Atomic mass : O = 16, Mg = 24 )**

**Hint.**
**a) (120/24) x $6.022x10^{23}$ = 5 x $6.022x10^{23}$**

**b) 5/2 x $6.022x10^{23}$**

**c) 5 x (24+16) = 5 x 40 g = 200g**

*Marks :(3)*

Hide Answer

**Qn No. 29** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Match the following.**

| A | B | C |
|---|---|---|
| 10 g $H_2$ | 3 x 6.022x$10^{23}$ | 2 mol atoms |
| 54 g $H_2O$ | 2 GAM | 112 L at STP |
| 32 g $O_2$ | 5 x 6.022x$10^{23}$ | 3 GMM |

**Hint.**

| A | B | C |
|---|---|---|
| 10 g $H_2$ | 5 x 6.022x$10^{23}$ | 112 L at STP |
| 54 g $H_2O$ | 3 x 6.022x$10^{23}$ | 3 GMM |
| 32 g $O_2$ | 2 GAM | 2 mol Atoms |

*Marks :(3)*

Hide Answer

**Qn No. 30** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**$H_2 + Cl_2 \rightarrow 2HCl$**

**The above experiment is carried out by using 10g $H_2$ and 142g $Cl_2$.**

**a ) How many molecules are there in 142g of $Cl_2$.**

**b ) what is the volume of each of the above gaes at STP?**

**c ) How many molecules of HCl will be formed in the reaction ?**

**(Hint : Atomic mass : H = 1 , Cl = 35.5)**

**Hint.**
**a) 2 x 6.022x$10^{23}$**

**b) $H_2$ - 5 x 22.4 L = 112L**

**$Cl_2$ - 2 x 22.4L = 44.8 L**

**c) 4 x 6.022x$10^{23}$ molecules (4mol molecules or $4N_A$ molecules )**

*Marks :(4)*

Hide Answer

**Qn No. 31** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Choose the correct statements from those given below**

**a) The volume of a mole of gas at 300K and 1atm is 22.4 L .**

**b) 1GMM of any substance contains $6.022 \times 10^{23}$ molecules.**

**c) The mass of $6.022 \times 10^{23}$ $O_2$ molecules is 16g .**

**d ) The mass of 22.4L of oxygen at 273K and 1atm pressure is 32 g**

**Hint.**
**statements b,d .**

***Marks :(2)***

Hide Answer

**Qn No. 32** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Choose the correct statements from those given below**

**a) The volume of a mole of gas at 300K and 1atm is 22.4 L .**

**b) 1GMM of any substance contains $6.022 \times 10^{23}$ molecules.**

**c) The mass of $6.022 \times 10^{23}$ $O_2$ molecules is 16g .**

**d ) The mass of 22.4L of oxygen at 273K and 1atm pressure is 32 g**

**Hint.**
**statements b,d .**

***Marks :(2)***

Hide Answer

**Qn No. 33** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Arrange the following samples in the increasing order of their mass.**

**a) 5 GMM $CO_2$**

**b) 10 GMM Oxygen**

**c) 2 mol $H_2O$**

**d) 3 mol $N_2$**

**(Hint: Molecular mass- $CO_2$ =44,$O_2$=32,$H_2O$=18, $N_2$=28)**

**Hint.**
**a=220g,b=320g,c=36g,d=84g**

**c < d < a < b**

***Marks :(3)***

Hide Answer

**Qn No. 34** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Arrange the following samples in the ascending order of number of moles.**

**a) 90 g $H_2O$**

**b) 48 g $CH_4$**

**c) 100 g $CaCO_3$**

**d) 96 g $SO_2$**

**(Hint:Molecular mass- $H_2O$ =18,$CH_4$ = 16,$CaCO_3$ =100,$SO_2$ =64)**

**Hint.**
**a = 5,b=3,c=1 d=1.5**

**c < d < b < a**

***Marks :(3)***

Hide Answer

**Qn No. 35** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Complete the table. (Hint : atomic mass : He = 4 , N=14 , O =16 , P = 31 )**

| Substance | Atomic mass | Amount taken(g) | Number of molecules | number of atoms |
|---|---|---|---|---|
| He | 4 | 10 | (a) | (b) |
| $N_2$ | 14 | (c) | $6.022x10^{23}$ | (d) |
| $Cl_2$ | 35.5 | (e) | (f) | $10 \times 6.022x10^{23}$ |
| $O_2$ | (g) | 80 | (h) | $5 \times 6.022x10^{23}$ |

**Hint.**
**a = $2.5 \times 6.022x10^{23}$ b= $2.5 \times 6.022x10^{23}$ c = 28g**

**d= $2 \times 6.022x10^{23}$ e = 355 g f= $5 \times 6.022x10^{23}$**

**g=16 h=$2.5 \times 6.022x10^{23}$**

***Marks :(4)***

Hide Answer

**Qn No. 36** *Chapter Name:Gas laws and Mole concept*

**Qn.**
**Arrange the following samples in the increasing order of number of atoms.**

**(hint : atomic mass : H = 1 C = 12 O =16 Ca = 40 )**

**a ) 10 g Hydrogen b ) 100 g Calcium c ) 64g Oxygen d ) 36g Carbon**

**Hint.**

**a) 10 GAM b) 2.5 GAM c) 4 GAM d) 3GAM**

**b < d < c < a**

***Marks :(3)***

Hide Answer

**Qn No. 37** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
***1mL of oxygen at constant temperature and pressure contains x molecules.***

***write answer related to the following gases at same temperature and pressure.***

***a) Number of molecules in 1mL hydrogen?***

***b)Number of molecules in 5mL nitrogen ?***

***c)Volume of 3x molecules of $CO_2$ ?***

**Hint.**
**a = x, b = 5x , c = 3mL**

***Marks :(3)***

Hide Answer

**Qn No. 38** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Choose the correct statements from those given below .**

**(Hint : Atomic mass : C - 12 , O - 16 )**

**a) $6.022 \times 10^{23}$ molecules are there in 22 g $CO_2$.**

**b) 1 GMM of $CO_2$ is 22 g .**

**c) Volume of 22 g $CO_2$ at STP is 11.2 L.**

**d) 22 g of $CO_2$ contains3 x ½ x $6.022 \times 10^{23}$ atoms.**

**Hint.**
**c,d**

***Marks :(2)***

Hide Answer

**Qn No. 39** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Pick the odd one out ?**

**64 g $SO_2$ , 2 x 6.022 x $10^{23}$ $H_2$ molecules , 64 g $O_2$ , 44.8 L $CO_2$ at STP**

**(Atomic mass : S - 32 , O -16)**

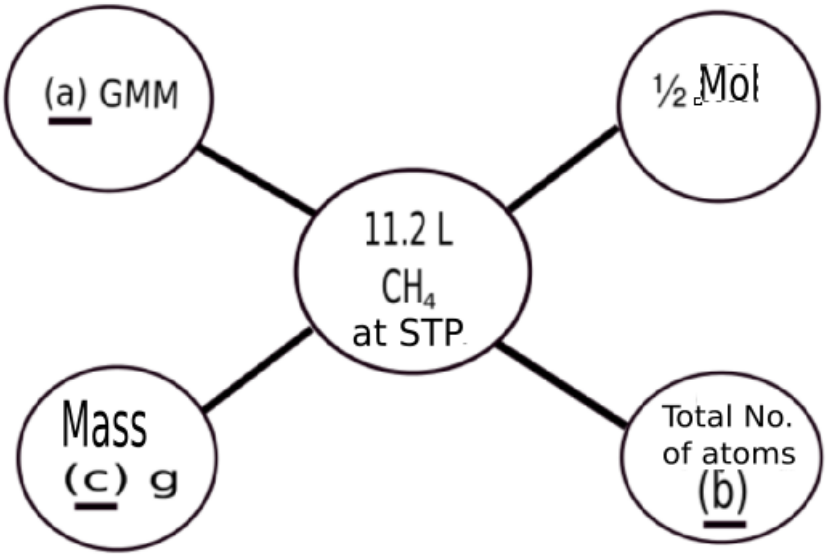
**Hint.64 g $SO_2$** ***Marks :(1)***

Hide Answer

**Qn No. 40** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**Find a,b,c .**

**(Hint: MM- $CH_4$ =16)**




**Hint.**
**a) ½ GMM**

**b) ½ x 5 x 6.022x$10^{23}$**

**c) 8 g**

***Marks :(3)***

Hide Answer

**Qn No. 41** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
***The mathematical representation of some gas laws are given. Identify the law related to each one.***

***a) $V \propto T$***

***b)$V \propto 1/p$***

***c)$V \propto n$***

**Hint.**

a)*Charles' law*

*b) Boyle's law*

*c)Avogadro's Law*

***Marks :(3)***

Hide Answer

**Qn No. 42** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
***Find out the gas law related with each of the followig instances.***

***a)The size of the balloon increases as it is inflated.***

***b)An inflated balloon kept in direct sunlight is found to burst.***

***c)Gases can be marketed in cylinders.***

**Hint.**
**a )*Avogadro's Law***

***b) Charles' law***

***c)* Boyle's law**

***Marks :(3)***

Hide Answer

**Qn No. 43** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
***An inflated balloon contains X air molecules.After some time the volume of the balloon is found to be the half at the same temperature and pressure when a few air molecules are expelled out.***

**a)How many molecules will be there in the balloon now*?***

**b) Which is the gas law associated with this?**

**Hint.**
**a = X /2,**

**b -*Avogadro's Law***

***Marks :(2)***

Hide Answer

**Qn No. 44** ***Chapter Name:Gas laws and Mole concept***

**Qn.**
**The mass of 5 GAM X is 80g . [Symbol is not real]**

**a ) What is the atomic mass of this element ?**

**b ) How many atoms are there in 80g X?**

**c )How many grams of helium are to be taken to get as many molecules as there in X?**

**(Atomic mass : He = 4 )**

**Hint.**
**a) 16**

**b) 5 x $6.022 \times 10^{23}$**

**c) 20 g**

***Marks :(3)***

Hide Answer

PRINT

Qn No. 1 *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**
**Experiments related to displacement reaction are given below**

**.1) A Silver rod is dipped in $CuSO_4$ .**

**2) A Zinc rod is dipped in $CuSO_4$**

**In which case does displacement reaction occur .why?**

**Hint.**
**Experiment- 2**

**Reactivity of Zn is greater than Cu.**

***Marks :(2)***

Hide Answer

**Qn No. 2** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**
**On electrolysis of fused sodiumchloride sodium is formed at the cathode and chlorine at the anode**

**a) Write the equation of reactions occuring at the anode and cathode**

**b) If aqueous solution of sodium chloride is electrolysed,what will be the product formed at the cathode?**

**Hint.**
**a) Cathode - $Na^+ + 1\ \bar{e} \rightarrow Na$**

**Anode $2Cl^- \rightarrow Cl_2 + 2\ \bar{e}$**

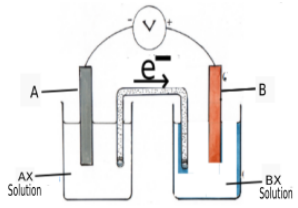
**b) $H_2$**

***Marks :(3)***

Hide Answer

**Qn No. 3** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**
**Diagram of Galvanic cell is given**




**a) Which is the anode of thts cell ?**

**b) Write the equation of the cathode reaction**

**(Valecy of metals : 2)**

**Hint.**
**a) A**

**b) $B^{2+} + 2\bar{e} \rightarrow B$**

***Marks :(2)***

Hide Answer

**Qn No. 4** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Analyse the given equation and answer the questions.**

**$Zn^{O} + Cu^{2+}SO_4^{2-} \rightarrow Zn^{2+}SO_4^{2-} + Cu^{O}$**

**a) Which metal is oxidised?**

**b) Is the above reaction a redox one. Why?**

**Hint.**
**a) Zn**

**b) yes,**

**In this reaction Zn is oxidised and $Cu^{2+}$ is reduced.**

***Marks :(3)***

Hide Answer

**Qn No. 5** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Some observations of the reaction of metals Al, Na ,Fe, Cu with water are given**

**1. One metal reacted with cold water to form an alkali and a gas**

**2. Another metal reacted only with steam to form a gas.**

**a) Which is the gas formed when metals react with water?**

**b) Which of the above metals give the observations 1 and 2?**

**c) Write the equation of the reaction which gave the first observation.**

**Hint.**
**a) $H_2$**

**b) Observation (1) Na**

**Observation (2) Fe**

**c) $2Na + 2H_2O \rightarrow 2NaOH + H_2$**

***Marks :(4)***

Hide Answer

**Qn No. 6** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**
**The decreasing order of reactivity of some metals are given**

**Mg>Al>Zn>Fe>Cu>Au**

**a) Name any one metal that cannot displace hydrogen from dil. HCl?**

**b) Which metal reacts only with steam to displace hydrogen from water?**

**c) Which metal can displace all other metals from their salt solutions?**

**Hint.**
**a) Cu (or) Au**

**b) Fe**

**c) Mg**

***Marks :(3)***

Hide Answer

**Qn No. 7** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**

- **A newly cut surface of sodium and a rubbed surface of zinc appears shiny**

  **a) Which of the above loses its lustre easily?**

  **b) Write the equation of any one reaction which causes loosing of its lustre**

  **c) Compare the the reactivity of the two metals?**

**Hint.**
**a) Na**

**b)** $4Na + O_2 \rightarrow 2Na_2O$ **(or)**

$2Na + 2H_2O \rightarrow 2NaOH + H_2$ **(or)**

$2NaOH + CO_2 \rightarrow Na_2CO_3 + H_2O$

**c) Reactivity of sodium is greater than zinc**

***Marks :(3)***

Hide Answer

**Qn No. 8** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**

| cell | Positive electrode | Negative electrode |
|---|---|---|
| Galvanic cell | Cathode | (a) ..... |
| Electrolytic cell | (b) ..... | (c) ..... |

**Hint.**

a) anode

b) anode

c) cathode

***Marks :(3)***

Hide Answer

**Qn No. 9** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

- **$Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$**

  **a)Write down the equation of oxidation reaction**

  **b) Is it a redox reaction? why?**

**Hint.**

**a) $Zn^0 + \rightarrow Zn^{2+} + 2\,\bar{e}$ (Oxidation)**

**b) Yes.Because zinc undergoes oxidation and copper undergoes reduction.**

***Marks :(3)***

Hide Answer

**Qn No. 10** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

**A Zinc rod is dipped in $CuSO_4$ solution .What happens to the colour of the solution?Explain with the help of equation showing the reaction taking place in the test tube**

**Hint.**

**$Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$**

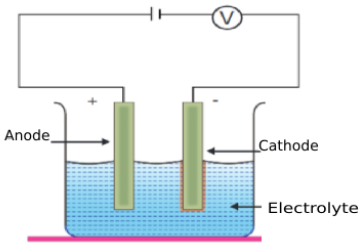
**The blue colour of $CuSO_4$ solution is due to the presence of $Cu^{2+}$ ions . As Zinc displaces $Cu^{2+}$ ions from the solution,the concentration of $Cu^{2+}$ ions decreases and the blue colour of the solution fades.**

***Marks :(3)***

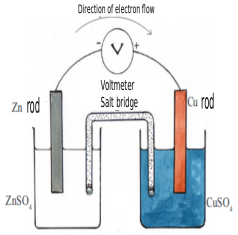
Hide Answer

**Qn No. 11** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**




**A**




**B**

**a)Two type of cells are represented in figure A and B.What are they?**

**b) What is the energy change taking place in the cell B ?**

**c) Which is the positive electrode in B ?**

**Hint.**
**a) Fig A -Electrolytic cell**

**Fig B - Galvanic cell**

**b) Chemical energy is converted to Electrical energy**

**c) Cu electrode**

***Marks :(4)***

Hide Answer

**Qn No. 12** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**NaCl crystals, sugar, moltenNaCl ,aqueous solution of NaCl are given.**

**Which of the above conduct electricity ?why?**

**Hint.**
**Molten NaCl and solution of NaCl**

**They conduct electricity because they contains ions which are free to move.**

***Marks :(3)***

Hide Answer

**Qn No. 13** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Electricity is passed through molten sodiumchloride and sodiumchloride solution**

a) Compare the reactions taking place at each electrodes and complete the table

| Electrolyte | Positive electrode | Negative electrode |
|---|---|---|
| Molten sodiumchloride | $Cl_2$ | (a) ..... |
| sodiumchloride solution | (b) ..... | $H_2$ |

b) Write equation of the reaction taking place at the positive electrode if molten KCl is used instead of molten NaCl?

Hint.
a) (a) Na (b) $Cl_2$

b) $2Cl^- \rightarrow Cl_2 + 2\,\bar{e}$

*Marks :(3)*

Hide Answer

**Qn No. 14** *Chapter Name:Reactivity series and Electrochemistry*

Qn.

- Correct the given wrong statements, if any

  a) In a Gavanic cell electrical energy is converted to chemical energy

  b) The reactivity of cathode in a galvanic cell will be less than that of the anode

  c) In a Gavanic cell electrons flow from cathode to anode

  d) Oxidation take place at anode

Hint.
a and c are wrong statements

a)In a Gavanic cell chemical energy is converted to electrical energy

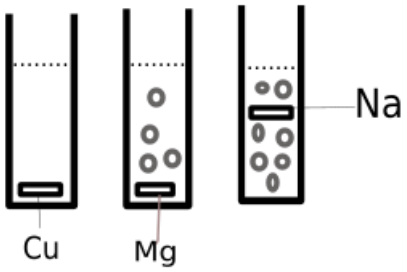
c)In a Gavanic cell electrons flow from anode to cthode

*Marks :(3)*

Hide Answer

**Qn No. 15** *Chapter Name:Reactivity series and Electrochemistry*

Qn.
Three metal pieces are dipped in water taken in three test tubes .Adrop of phenolphthalein is added to each test tube




**a) Which metal forms pink colour on reaction with cold water?**

**b) Which metal gives pink colour only on heating ?**

**c) Write the balanced equation for the reaction taking place in any one test tube.**

**Hint.**
**a) Na**

**b) Test tube B**

**c) $2Na + 2H_2O \rightarrow 2NaOH + H_2$**

**OR $Mg + 2H_2O \rightarrow Mg(OH)_2 + H_2$**

***Marks :(3)***

Hide Answer

**Qn No. 16** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Name the product formed at the cathode on electrolysis of molten KCl ?**

**Hint.**
**K**

***Marks :(1)***

Hide Answer

**Qn No. 17** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

- **The element A generally show +1 oxidation state If we electrolyse molten chloride of this element**

  **a) What is the energy change taking place in an electrolytic cell?**
- **c) Name the product formed at the positive electrode?**
- **b) Write down the equation showing the oxidation reaction**

**Hint.**
**a) Electrical energy is converted in to chemical energy**

**b) $Cl_2$**

**b) $Na^+ + 2e \rightarrow Na$**

***Marks :(4)***

Hide Answer

**Qn No. 18** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**A piece of magnesium ribbon is dipped in $CuSO_4$ solution. After some time Cu is found to get deposited on the ribbon**

**a) Write oxidation reaction taking place here?**

**b)Write the equation showing the redox reaction taking place in the test tube?**

**c)If a Ag rod is dipped instead of Mg ribbon,does any change in colour occur to the solution.why?**

**Hint.**
**a) $Mg \rightarrow Mg^{2+} + 2\,\bar{e}$**

**b) $Mg + Cu^{2+} \rightarrow Mg^{2+} + Cu$**

**c) No colour change. Ag is less reactive than Cu**

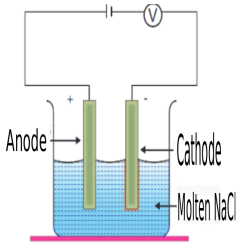
***Marks :(4)***

Hide Answer

**Qn No. 19** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

**Figure of an electrolytic cell is given**




**a) Which is the product obtained at the cathode?**

**b) Write the equation of the chemical reaction taking place at anode**

**c) Write any two instances where electrolysis is made use of.**

**Hint.**
**a) Na**

**b) $2Cl^- \rightarrow Cl_2 + 2\,\bar{e}$**

**c) Electroplating, Refining of metals,.....**

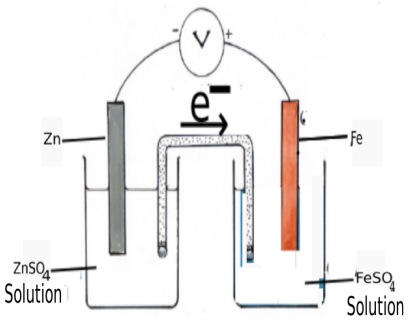
***Marks :(4)***

Hide Answer

**Qn No. 20** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**

**Figure of an electrolytic cell is given**




**a) Write the equation of the reduction reacion take place in the cell**

**b) If the flow of electrons in Mg-Zn cell is in opposite direction as that of Zn-Fe cell shown above, arrange the metals Zn,Mg,Fe in the ascending order of their reactivity**

**Hint.**

**a) $Fe^{2+} + 2\,\bar{e} \rightarrow Fe$**

**b) Fe<Zn<Mg**

***Marks :(2)***

Hide Answer

**Qn No. 21** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**

**Equation of the reaction of iron rod and $CuSO_4$ solution is given below.**

**$CuSO_4 + Fe \rightarrow FeSO_4 + Cu$**

**a) Write the eqation showing the reduction reaction taking place here.**

**b) Will displacement reaction take place by using $ZnSO_4$ instead of $CuSO_4$ ?Give reason**

**Hint.**

**a) $Cu^{2+} + 2\,\bar{e} \rightarrow Cu$**

**b) No , Zn is more reactive than Fe**

***Marks :(3)***

Hide Answer

**Qn No. 22** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**

- **Some metals are aranged in the decreasing order of their reactivity.**
  - **Mg>Zn>Pb>Cu>Ag**

**a) Which will be the anode of Zn- Cu Galvanic cell ?**

**b) Write the equation of the redox reaction taking place in the above cell?**

**Hint.**
**a) Zn**

**b) $Zn + Cu^{2+} \rightarrow Zn^{2+} + Cu$**

***Marks :(2)***

Hide Answer

**Qn No. 23** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Which is the product formed at cathode on electrolysis of molten NaCl?**

**Hint.**
**Sodium (Na)**

***Marks :(1)***

Hide Answer

**Qn No. 24** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

- **Analysis the following reactions and answer the following questions.**

  **(Hint : Oder of reactivity Mg>Zn>Fe>Cu)**

  **Activity1 : A copper rod is dipped in $FeSO_4$ solution**

  **Activity 2 : A Zinc rod is dipped in $FeSO_4$ solution**

**a) In which test tube does displacement reaction take place ?**

**b) Write the redox reaction taking place here**

**Hint.**
**a) Activity 2**

**b) $Zn + Fe^{2+} \longrightarrow Zn^{2+} + Fe$**

***Marks :(2)***

Hide Answer

**Qn No. 25** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**The equation of the redox reaction taking place in a Galvanic cell is given below.**

**$Cu + 2Ag^{+} \rightarrow Cu^{2+} + 2Ag$**

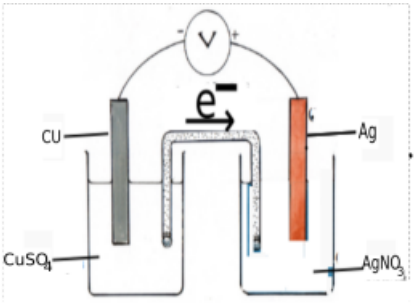
**a) Write the equation showing the reduction reaction**

**b)Draw the figure of the Galvanic cell**

**Hint.**

**a) $2Ag^{+} + 2e^{-} \rightarrow 2Ag$**

**b)**



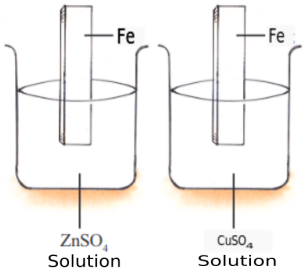

***Marks :(4)***

Hide Answer

**Qn No. 26** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

**Observe the figure**




**(A )** **( B)**

**(Hint:Order of reactivity Na>Mg>Zn>Fe>Cu)**

**a) The Fe rod dipped in which beaker shows a change in colour?**

**b) Write the equation for the oxidation reaction taking place**

**Hint.**

**a) Beaker B**

**b) $Fe \rightarrow Fe^{2+} + 2\,e$**

***Marks :(2)***

Hide Answer

**Qn No. 27** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

**Zn, Cu,Ag rods and solutions of $AgNO_3$ , $CuSO_4$ $ZnSO_4$ and $MgSO_4$ are given . How many Galvanic cells can be constructed from this? Complete the table.**

**(Mg>Zn>Fe>Cu)**

| സെൽ | ആനോഡ് | |
|---|---|---|
| cell | Anode | Cathode |
| Zn-Cu | Zn | Cu |
| | | |
| | | |

**Hint.**

**Three types**

| cell | anode | cathode |
|---|---|---|
| Zn-Cu | Zn | Cu |
| Zn-Ag | Zn | Ag |
| Cu-Ag | Cu | Ag |

***Marks :(3)***

Hide Answer

**Qn No. 28** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

**Rods of Zn, Cu,Ag and solutions of $AgNO_3$ , $CuSO_4$ $ZnSO_4$ and $MgSO_4$ are given . How many Galvanic cells can be constructed from this?**

**Mg>Zn>Fe>Cu)**

| cell | Anode | Cathode |
|---|---|---|
| Zn-Cu | Zn | Cu |
| | | |
| | | |

**Hint.**

**Two types**

| cell | anode | cthode |
|---|---|---|
| Zn-Cu | Zn | Cu |
| Zn-Ag | Zn | Ag |
| Cu-Ag | Cu | Ag |

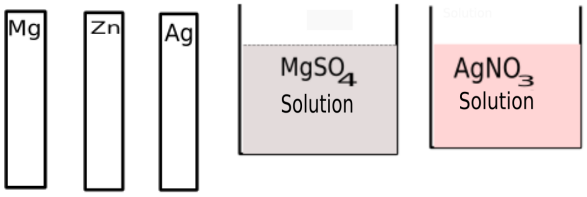
***Marks :(3)***

Hide Answer

**Qn No. 29** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

Some electrodes and salt solutions are shown.




a) Which is the Galvanic cell that can be constructed from the above?

b) What are the anode and cathode of the cell?

c) Write equaton of the reaction that takes place at anode ?

Hint.

a) Mg – Ag cell

b) Anode Mg, Cathode Ag

c) $Mg \rightarrow Mg^{2+} + 2e$

*Marks :(3)*

Hide Answer

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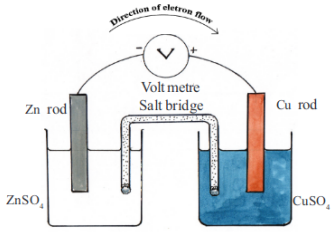
**Qn No. 30** *Chapter Name:Reactivity series and Electrochemistry*

Qn.

The diagram of a galvanic cell is given




a) What are the anode and cathode of the cell

b) Write the equation of the cathodic reaction

c) Write the eqation of the redox reaction taking place in the cell

Hint.

a) Anode Zn , Cathode Cu

b) $Cu^{2+} + 2\bar{e} \rightarrow Cu$

c) $Zn + Cu^{2+} \rightarrow Zn^{2+} + Cu$

*Marks :(4)*

Hide Answer

**Qn No. 31** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**
**Reaction of some metals with water is given in the table( symbols are not real)**

| Metal | Reaction |
|---|---|
| A | Reaction with steam |
| B | Does not react |
| C | Reacts vigourously even with cold water |
| D | React with hot water |

**a)Based on the above reaction ,aarrange the given metals in the decreasing order of their reactivity**

**b)If a galvanic cell is constructed using A and B as electrodes, which is the anode?**

**c) Write the equation of the reaction taking place at electrode B of the cell**

**(valency of B=2)**

**Hint.**
**a) C>D>A>B**

**b) A**

**c)** $B^{2+} + 2\,\bar{e} \rightarrow B$

***Marks :(3)***

Hide Answer

**Qn No. 32** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**
**Sodium vigourously reacts with cold water**

**a) Which is the gas formed in the reaction?**

**b) Write the balanced chemical eqation of the reaction**

**c) If two drops of phenolphthalein are added to the test tube ,what can you observe?**

**Hint.**
**a) Hydrogen**

**b)** $2Na + 2H_2O \rightarrow 2NaOH + H_2$

**c) Solution becomes pink**

***Marks :(3)***

Hide Answer

**Qn No. 33** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**
**Which among the given metals does not react with dilute acids ?**

**(Sodium, Copper, Magnesium, Lead)**

**Hint.**
**Copper**

***Marks :(1)***

Hide Answer

**Qn No. 34** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Electricity is passed through sodium chloride solution taken in a beaker.**

**a) Which is the substance formed at the cathode?**

**b)Which substance gets discharged at the anode?**

**c) The reaction taking place at one electrode is**
**$2H_2O + 2\bar{e} \rightarrow H_2 + 2OH^-$**
**At which electrode this reaction takes place?**

**d) What will be the nature of the solution after electrolysis?**

**(Acidic / Neutral / Alkaline)**

**Hint.**
**a) $H_2$**

**b) $Cl^-$**

**c) At cathode**

**d) Alkaline**

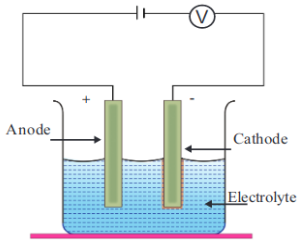
***Marks :(4)***

Hide Answer

**Qn No. 35** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

**Observe the cell given below.**




**a) What is the energy change taking place in the cell ?**

**b) Write the equation showing the reaction taking place at the cathode of the cell.**

**c) Give any two practical utility of electrolysis.**

**Hint.**
**a) Electrical energy is converted to chemical energy.**

**b) $M^{n+} + n\,\bar{e} \rightarrow M$**

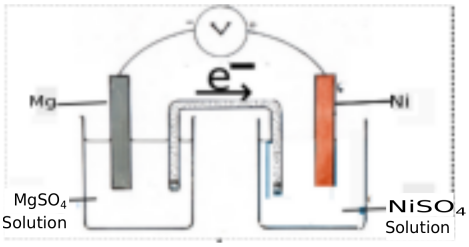
**c)Write any two uses.**

***Marks :(4)***

Hide Answer

**Qn No. 36** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**The diagram of a galvanic cell is given**




**a) Which are the anode and cathode of the cell ?**

**b) Write the equation of the reaction taking place at the cathode.**

**c) Write the redox reaction taking place in this cell.**

**Hint.**
**a) Anode – Mg , Cathode - Ni**

**b) $Ni^{2+} + 2\,\bar{e} \rightarrow Ni$**

**c) $Ni^{2+} + Mg \rightarrow Ni + Mg^{2+}$**

**($NiSO_4 + Mg \rightarrow MgSO_4 + Ni$)**

***Marks :(4)***

Hide Answer

**Qn No. 37** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**A redox reaction is given below.**

**$FeCl_2 + Mg \rightarrow MgCl_2 + Fe$**

**If a galvanic cell is constructed based on the given redox reaction**

**a) Which are the electrolytes you choose?**

**b) Draw the diagram of the cell you constructed.**

**c) Write the equation of the reaction occuring at the negative electrode.**

**Hint.**
**a) $FeCl_2$ , $MgCl_2$**

**b) Correct diagram with salt bridge and direction of electron flow.**

c) $Mg \rightarrow Mg^{2+} + 2\bar{e}$

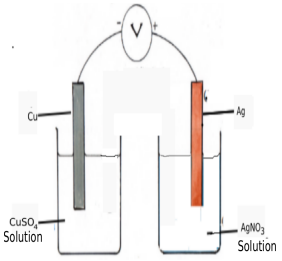
***Marks :(4)***

Hide Answer

**Qn No. 38** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

- **Figure of a galvanic cell is given.**




**a) Observe the figure and correct the figure,if it is wrong?**

**b) To which catagory does the reaction occuring at the anode of a galvanic cell belong?**

**(Oxidation / Reduction)**

**c) Write the equation showing the reaction occuring at the negative electrode of the cell?**

**Hint.**
**a) Correct diagram with salt bridge and direction of electron flow.**

**b) Oxidation**

**c)** $Cu \rightarrow Cu^{2+} + 2\bar{e}$

***Marks :(4)***

Hide Answer

**Qn No. 39** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

**Some substances available in the lab are given in the box.**

NaCl, $MgSO_4$, $CuSO_4$, $ZnSO_4$, $BaCl_2$, KCl, $AgNO_3$, Mg, Fe, Cu, Ag, Ni

**a) How many galvanic cells can be construct using the materials given in the box? Which are they ?**

**b) Which of the above metal will act only as anode of the galvanic cells constructed?**

**Hint.**
**a) 3 cells, Mg – Fe / Fe-Cu / Mg-Cu**

**b) Mg**

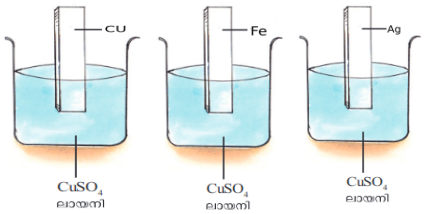
***Marks :(3)***

Hide Answer

**Qn No. 40** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**

**Analyse the following pictures and answer the following questions.**




**A** **B** **C**

**a) In which beaker does colour change occur after a few minutes?**

**b) write the equation showing the reaction that causes the colour change?**

**c) If you construct a galvanic cell using any given metal as electrode which metal will act as cathode?Write the equation showing the reaction taking place at the cathode.**

**Hint.**
**a) B**

**b) $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$**

**c) Ag**

**$2Ag^+ + 2e^- \rightarrow 2Ag$**

**$(Ag^+ + 1e^- \rightarrow Ag)$**

***Marks :(4)***

Hide Answer

**Qn No. 41** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Certain metals are given in the box**

**Ag, Au, Zn, Mg**

**a) Which of the metals can displace Cu from $CuSO_4$ solution ?**

**b) Which metal cannot displace other metals from the salt solution of these metals?**

**Hint.**
**a) Zn, Mg**

b) Au

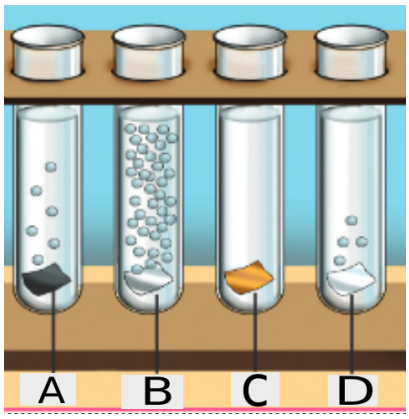
*Marks :(2)*

Hide Answer

**Qn No. 42** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**

**Four different metal pieces of same mass dipped in dil.HCl is shwn in the figure**




**a) Which is the gas evolved in the test tubes?**

**b) Write the equation showing the reaction of metal B with HCl.**

**(valency of B = 2)**

**c) Arrange the metals as seen in the reactivity series?**

**d) If we construct a galvanic cell using any two of the above metals,which metal will always act as the cathode?**

**Hint.**

**a) Hydrogen**

**b)** $B+2HCl \rightarrow BCl_2+H_2$

**c) B,A,D,C**

**d) C**

*Marks :(4)*

Hide Answer

**Qn No. 43** *Chapter Name:Reactivity series and Electrochemistry*

**Qn.**

**Rods of Fe, Mg, Cu are dipped in hot water taken in a test tube**

**a) From which rod bubbles are evolved easily?Which is the gas evolved ?**

**b) Which of these does not react with water under any circumstances?**

**c) Arrange the metals in the increasing order of their reactivity?**

**Hint.**

**a) Mg, Hydrogen**

**b) Cu**

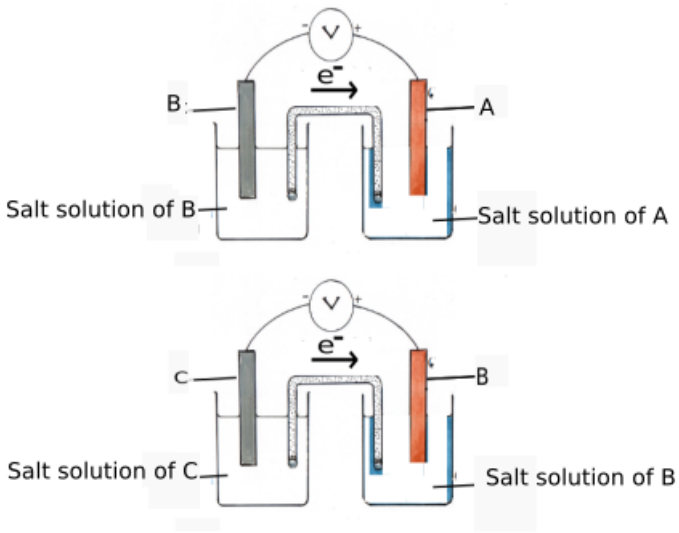
**c) Cu, Fe , Mg**

***Marks :(3)***

Hide Answer

**Qn No. 44** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Two galvanic cells constructed using metals A,B and C are shown in the figure.**




**a) Draw the figure of the galvanic cell constructed using metals A and C and mark the direction of flow of electrons.**

**b) Which will be the anode of this cell?**

**c) Write the equation of the reaction occuring at the cathode of this cell.**

**(Valency of the metal - 2)**

**Hint.**
**a) correct figure /correct direction of flow of electrons**

**c) Cathode - A**

**ന) $A^{2+} + 2\,\bar{e} \rightarrow A$**

***Marks :(4)***

Hide Answer

**Qn No. 45** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Give any two differences between a galvanic cell and an electrolytic cell.**

**Hint.**
**In a galvanic cell chemical energy is converted to electrical energy and in an electrolytic cell electrical energy is converted to chemical energy.**

**In galvanic cell positive electrode is cathode and negative electrode is anode. In electrolytic cell positive electrode is anode and negative electrode is cathode.**

***Marks :(4)***

Hide Answer

**Qn No. 46** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**(a)Gold is coated on a silver spoon using electricity. Name this process.**

**b) Give any two uses of the above process.**

**Hint.**
**a) electroplating**

**b) For decorative purpose / Resist corrosion etc**

***Marks :(2)***

Hide Answer

**Qn No. 47** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**Gold is electroplated on a silver spoon.**

**a) Which substance is to be used as the cathode of the cell?**

**b) Name the electrolyte used here.**

**Hint.**
**a) Cathode – silver spoon**

**b) Electrolyte – Solution of gold cyanide and sodium cyanide**

***Marks :(2)***

Hide Answer

**Qn No. 48** ***Chapter Name:Reactivity series and Electrochemistry***

**Qn.**
**a) Which is the electrolyte used to electroplate silver over an iron nail?**

**b) Write the reaction taking place at the anode of that cell.**

**c) Write the reaction taking place at cathode of that cell.**

**Hint.**

**a) $AgNO_3$ solution / Solution of AgCN + NaCN**

**b) $Ag \rightarrow Ag^+ + 1e^-$**

**c) $Ag^+ + 1e^- \rightarrow Ag$**

***Marks :(3)***

Hide Answer

PRINT

Qn No. 1 *Chapter Name:Production of Metals*

**Qn.**
**Copper is refined electrolytically.The reaction occuring at the two electrodes are given.**

***Electrode* 1 : Cu $\rightarrow Cu^{2+} + 2e$**

**Electrode 2 : $Cu^{2+} + 2e \rightarrow Cu$**

**Write whether *Electrode* 1 is anode or cathode.**

**Hint.**
**Anode**

***Marks :(1)***

Hide Answer

**Qn No. 2** *Chapter Name:Production of Metals*

**Qn.**
**Metals like copper and silver are refined by using electrolytic method .**

**(a) Which is the anode used in refining of copper ?**

**(b) Write the equation of reaction occuring at anode and cathode during the refining of copper.**

**Hint.**
**(a) Impure copper is used as anode.**

**(b) Anode : $Cu \rightarrow Cu^{2+} + 2e$**

**Cathode : $Cu^{2+} + 2e \rightarrow Cu$**

***Marks :(3)***

Hide Answer

**Qn No. 3** *Chapter Name:Production of Metals*

**Qn.**
***Which is the method used to refine tin?Why?***

**Hint.**
**Liquation, Melting point of tin is less than that of the impurities**

***Marks :(2)***

Hide Answer

**Qn No. 4** *Chapter Name:Production of Metals*

**Qn.**
***Different methods are used to convert the ores*** **$ZnCO_3$,$Cu_2S$ in to oxides.Write the appropriate methods to convert these ores.**

**Hint.**
**$ZnCO_3$ - Calcination**

**$Cu_2S$ - Roasting**

***Marks :(2)***

Hide Answer

**Qn No. 5** ***Chapter Name:Production of Metals***

**Qn.**
**Leaching is a process in aluminium production.To which of the following**

**class does it belong ?**

**(a) Concentration of ore**

**(b) Extraction of metal**

**(c) Refining of metal**

**(d) Alloying**

**Hint.**
**(a) Concentration of ore**

***Marks :(1)***

Hide Answer

**Qn No. 6** ***Chapter Name:Production of Metals***

**Qn.**
**(a) Which is the method used to concentrate copper pyrites?**

**(b) What property of the ore is utilised here ?**

**Hint.**
**(a) Froth floataton**

**(b)Density of ore is lighter than that of impurities.**

***Marks :(2)***

Hide Answer

**Qn No. 7** ***Chapter Name:Production of Metals***

**Qn.**
**Which is an ore of iron ?**

**(Bauxite , Cryolite,Haematite ,Clay )**

**Hint.**
**Haematite**

***Marks :(1)***

Hide Answer

**Qn No. 8** ***Chapter Name:Production of Metals***

**Qn.**
**Which is not a basic metallurgical process ?**

**(a) Alloying**

**(b) Refining**

**(c) Concentration of ore**

**(d) Extraction of metal**

**Hint.**
**(a) Alloying**

***Marks :(1)***

Hide Answer

**Qn No. 9** ***Chapter Name:Production of Metals***

**Qn.**
**The method used to prepare a metal from an ore is known as ..... .**

**Hint.**
**Extraction of metal**

***Marks :(1)***

Hide Answer

**Qn No. 10** ***Chapter Name:Production of Metals***

**Qn.**
**Minerals from which metals can be extracted easily are known as.....**

**Hint.**
**Ore**

***Marks :(1)***

Hide Answer

**Qn No. 11** *Chapter Name:Production of Metals*

**Qn.**
**Which is not a mineral of aluminium ?**

**( Bauxite, Cryolite , Sand, Clay )**

**Hint.**
**Sand**

***Marks :(1)***

Hide Answer

**Qn No. 12** *Chapter Name:Production of Metals*

**Qn.**
**Which among the following metals exists in the elemental state in nature?**

**(Magnesium , Sodium ,Gold ,Aluminium )**

**Hint.**
**Gold**

***Marks :(1)***

Hide Answer

**Qn No. 13** *Chapter Name:Production of Metals*

**Qn.**
**The main gangue in iron ore is $SiO_2$**

**(a) Name the important ore of iron ?**

**(hamatite/ Bauxite/Calamine/Tinstone)**

**(b) Name the substances used to remove gangue from an ore ? Which is the substance used to remove $SiO_2$ from iron ore?**

**Hint.**
**(a) Hamatite**

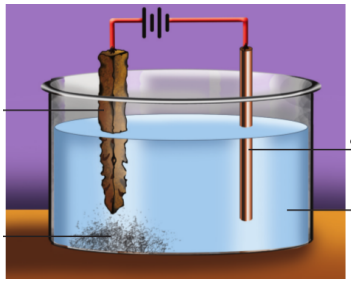
**(b)Flux, $CaO/CaCO_3$**

***Marks :(3)***

Hide Answer

**Qn No. 14** *Chapter Name:Production of Metals*

**Qn.**
**The figure showing the electrolytic refining of copper is shown .**



**What are the anode,cathode and electrolyte of this cell ?**

**Hint.**
**Anode - Impure copper**

**Cathode - Pure copper**

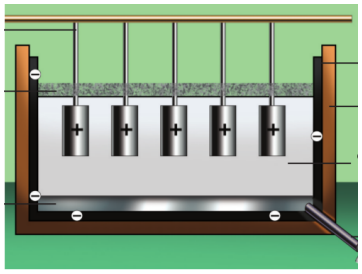
**Electrolyte - Copper sulphate solution with $H_2SO_4$ .**

***Marks :(3)***

Hide Answer

**Qn No. 15** ***Chapter Name:Production of Metals***

**Qn.**
**Figure of electrolysis of alumina is shown**



**(a) What are the anode and cathode ?**

**(b) Write the equation of cathode reaction.**

**(c) The anode blocks are to be replaced occasionally; Why?**

**Hint.**
**(a)Anode - Carbon rods**

**Cathode - Carbon lining**

**(b) $Al^{3+} + 3e \rightarrow Al$**

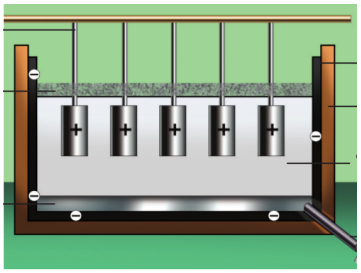
**(c) The anode (carbon) is oxidised to $CO_2$ by the oxygen produced at the anode**

***Marks :(4)***

Hide Answer

**Qn No. 16** ***Chapter Name:Production of Metals***

**Qn.**
**The figure of electrolytic production of aluminium is given**



**(a)Name the process of production of aluminium ?**

**(b) What are the anode and cathode of the cell ?**

**(c) What is the role of cryolite in the electrolysis?**

**Hint.**
**(a) Hall-Heroult process**

**(b) Anode - Carbon rods**

**Cathode - Carbon lining**

**(c) To dissolve alumina /to reduce melting point of alumina / to increase electrical conductivity**

***Marks :(4)***

Hide Answer

**Qn No. 17** ***Chapter Name:Production of Metals***

**Qn.**
**(a) Name the ore of aluminium ?**

**(b) Which is the method used to concentrate the ore of aluminium?**

**(c) Name the process used to produce aluminium ?**

**Hint.**
**(a) Bauxite**

**(b) Leaching**

**(c) Hall-Heroult**

***Marks :(3)***

Hide Answer

**Qn No. 18** ***Chapter Name:Production of Metals***

**Qn.**
**Names of some alloy steels are given in the box .**

| Alnico | Stainless steel | Nichrome |
|---|---|---|

**(a) What is the common component in all these steels ?**

**(b) Which steel is used to make heating coils?**

**(c) Which is the steel is used to make permanent magnets ?**

**(d) What is the similarity between stainless steel and nichrome ?**

**Hint.**
**(a) Iron**

**(b) Nichrome**

**(c) Alnico**

**(d) Both of them contain same components.**

***Marks :(4)***

Hide Answer

**Qn No. 19** ***Chapter Name:Production of Metals***

**Qn.**
**Equation of reaction occuring in blast furnace during the production of iron are given.**

**$CaCO_3 \rightarrow CaO + CO_2$**

**$Fe_2O_3 + 3\ CO \rightarrow 2\ Fe + 3\ CO_2$**

**$CaO + SiO_2 \rightarrow CaSiO_3$**

**(a) Which of these represent slag formation reaction ?**

**(b) Which is the substance acting as reducing agent in blast furnace?**

**Hint.**
**(a) $CaO + SiO_2 \rightarrow CaSiO_3$**

**(b) Coke/CO**

***Marks :(2)***

Hide Answer

**Qn No. 20** ***Chapter Name:Production of Metals***

**Qn.**
***Iron produced in blast furnace***

**(a) Name the ore used here ?**

**(b) Why coke is added along with the ore to the blast furnace ?**

**(c) What is the role of limestone in blast furnace?**

**Hint.**
**(a)Haematite .**

**(b)For the reduction of ore/For the formation of CO.**

**(c)To remove the gangue**

***Marks :(3)***

Hide Answer

**Qn No. 21** ***Chapter Name:Production of Metals***

**Qn.**

| Ag , Fe, Sn, Na, Au |
|---|

**(a) Arrange the above metals in the decreasing order of their reactivity?**

**(b) Which metal is produced by reduction using electricity ?**

**(c) Which of the above occur free in nature ?**

**(d) Name the metal for which the compounds are highly stable ?**

**Hint.**
**(a) Na > Fe>Sn>Ag>Au**

**(b) Na**

**(c) Au**

**(d) Na**

***Marks :(4)***

Hide Answer

**Qn No. 22** ***Chapter Name:Production of Metals***

**Qn.**
**a)Complete the table.**

| Metal | Method of refining |
|---|---|
| Tin | (x) |
| Zinc | (y) |

**(a) identify x and y**

**(b) Which property of metals is made use of in the above process ?**

**Hint.**
**(a)**

**x - Liquation**

**y - distillation**

**(b) Melting point of tin is lower than impurities.**

**Boiling point of zinc is lower than impurities .**

***Marks :(3)***

Hide Answer

**Qn No. 23** ***Chapter Name:Production of Metals***

**Qn.**
***Equation related with the concentration of two ores of Zn are given.***

i. $ZnCO_3$ + Heat ⟶ ZnO + $CO_2$

ii. ZnS +$O_2$ + Heat ⟶ ZnO + $SO_2$

a .Which of these equation represent roasting?

b . How does roasting differ from calcination ?

Hint.
(a)second (ii)

(b)Calcination is carried out in the absence /limited supply of air .Where as roasting is carried out with the presence of excess air.

*Marks :(3)*

Hide Answer

**Qn No. 24** *Chapter Name:Production of Metals*

Qn.
*Match suitably*

| Ore | Nature of the ore | The method of concentration |
|---|---|---|
| Copper pyrites | Density of the ore is heavier than gangue | Leaching |
| Magnetite | Ore and gangue do not dissolve in same solvent | Hydraulic washing |
| Ore of gold | Density of the ore is lighter than gangue | Magnetic separation |
| Bauxite | Magnetic natured ore | Froth floatation |

Hint.

| Ore | Nature of the ore | The method of concentration |
|---|---|---|
| Copper pyrites | Density of the ore is lighter than gangue | Froth floatation |
| Magnetite | Magnetic natured ore | Magnetic separation |
| Ore of gold | Density of the ore is heavier than gangue | Hydraulic washing |
| Bauxite | Ore and gangue do not dissolve in same solvent | Leaching |

*Marks :(3)*

Hide Answer

**Qn No. 25** *Chapter Name:Production of Metals*

Qn.
*Match the following*

| Metal | Ore |
|---|---|

| | |
|---|---|
| **Copper** | **Bauxite** |
| **Zinc** | **Haematite** |
| **Iron** | **Calamine** |
| **Aluminium** | **Cuprite** |

**Hint.**

| Metal | ore |
|---|---|
| **Copper** | **Cuprite** |
| **Zinc** | **Calamine** |
| **Iron** | **Haematite** |
| **Aluminium** | **Bauxite** |

***Marks :(4)***

Hide Answer

**Qn No. 26** ***Chapter Name:Production of Metals***

**Qn.**
***Clay,bauxite and precious stone are some minerals of aluminium*.**

**a . Which among these is the ore of aluminium.**

**b . Write any two charecteristics of an ore**

**Hint.**
**(a) Bauxite**

**(b) Abundance / Easily separable / High metal content .**

***Marks :(3)***

Hide Answer

**Qn No. 27** ***Chapter Name:Production of Metals***

**Qn.**
***Which is the reducing agent used in the extraction of reactive metals like sodium and potassium***

**Hint.**
**Electricity**

***Marks :(1)***

Hide Answer

**Qn No. 28** ***Chapter Name:Production of Metals***

**Qn.**
***Name the method used to concentrate* bauxite.**

**(Leaching , Hydraulic washing , Magnetic separation )**

**Hint.**
**Leaching**

***Marks :(1)***

Hide Answer

**Qn No. 29** ***Chapter Name:Production of Metals***

**Qn.**
**Which method is used to remove tin stone from iron tungstate?**

**(Froth floatation ,Magnetic separation , Levigation, Leaching )**

**Hint.**
**Magnetic separation**

***Marks :(1)***

Hide Answer

**Qn No. 30** ***Chapter Name:Production of Metals***

**Qn.**
***Name the process used to concentrate the ore,Copper Pyrites***

**($CuFeS_2$) ?**

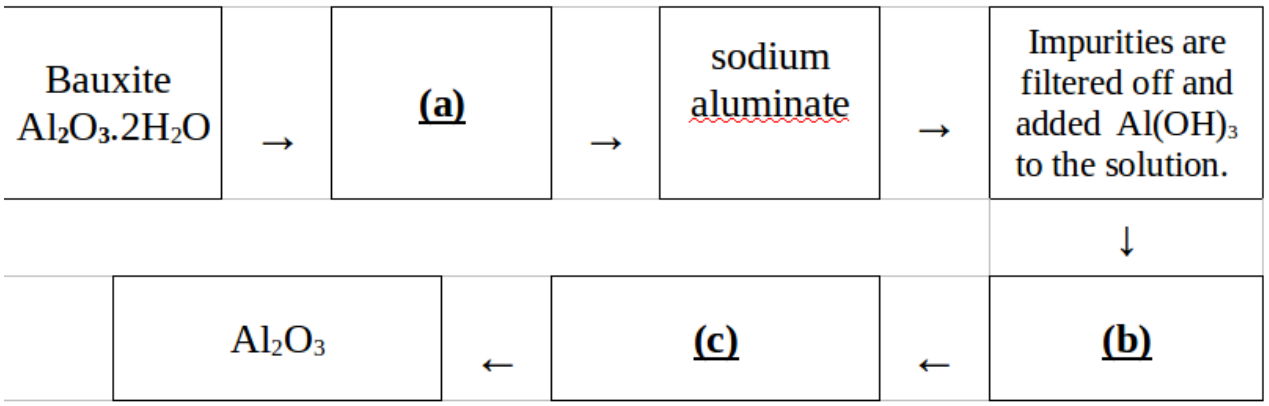
**Hint.**
**Froth floatation**

***Marks :(1)***

Hide Answer

**Qn No. 31** ***Chapter Name:Production of Metals***

**Qn.**
***Complete the flow chart related with the production of alumina.***




**Hint.**
**(a) Hot NaOH solution**

**(b) $Al(OH)_3$ precipitate**

**(c) Precipitate is seperated and heated strongly**

***Marks :(3)***

Hide Answer

**Qn No. 32** ***Chapter Name:Production of Metals***

**Qn.**

**a) Which is the reducing agent used to extract aluminium**

**b) complete the equation of the ionisation of alumina during electrolysis.**

**$I_2$ $O_3 \longrightarrow$ ----- + -----**

**Hint.**
**a) electricity**

**b) $Al_2O_3 \longrightarrow 2Al^{3+} + 3O^{2-}$**

***Marks :(2)***

Hide Answer

**Qn No. 33** ***Chapter Name:Production of Metals***

**Qn.**

**Which of those given below is an alloy steel**

**Bronze ,aluminium Bronze ,Nichrome ,Brass )**

**) Write any one characteristic of the above alloy.**

**Hint.**

) Nichrome

) High resistance (electrical / corrosion resistance)

*Marks :(2)*

Hide Answer

**Qn No. 34** *Chapter Name:Production of Metals*

**Qn.**
**hat are the methods used to refine the following metals?Why those methods are employed?**

**a) Tin b)Cadmium**

**Hint.**
**Tin - Liquation - Low melting point**

**Cadmium---Distillation- Low boiling point**

*Marks :(2)*

Hide Answer

**Qn No. 35** *Chapter Name:Production of Metals*

**Qn.**
**The production of Aluminium is different from that of Iron.**

**a)Which is the method of concentration of the ore of aluminium**

**b)Which is the reducing agent used in the production of Aluminium?**

**c)Name the furnace used in the production of iron.**

**d) pig iron directly got from the furnace is not used as such.What may be the reason?**

**Hint.**
**Answer key:**

**a)Leaching.**

**b)Electricity**

**c)Blast furnace.**

**d)Presence of high amount of impurities such as carbon,sulphur,and phosphorus make it brittle.**

*Marks :(4)*

Hide Answer

**Qn No. 36** *Chapter Name:Production of Metals*

**Qn.**

**What are the methods used to refine the following metals?Why these metods are employed?**

**a) Tin**

**b)Cadmium**

**Hint.**
**a) Tin - Liquation -Low melting point**

**b)Cadmium-Distillation- Low boiling point**

***Marks :(2)***

Hide Answer

**Qn No. 37** ***Chapter Name:Production of Metals***

**Qn.**
**Answer the questions related to concentrations of bauxite given below.**

**a) Which method is used to concentrate bauxite?**

**b) Name the product obtained on heating aluminium hydroxide.**

**Hint.**
**Answer key**

**a) Leaching.**

**b) Alumina/Aluminium Oxide/$Al_2O_3$**

***Marks :(2)***

Hide Answer

**Qn No. 38** ***Chapter Name:Production of Metals***

**Qn.**

**The components of stainless steel and nichrome are Fe, Ni,Cr,C.**

**a) Write any one characteristic of each of these.**

**b)Why these two are showing different characteristic?**

**Hint.**
**a) Stainless steel: Very hard/Corrosion resistant etc**

**Nichrome: High resistance/High melting poin/corrosion resistant etc**

**b)Though the constituent elements in both are the same, the ratio of the constituent elements are different.**

***Marks :(2)***

Hide Answer

**Qn No. 39** *Chapter Name:Production of Metals*

**Qn.**
**Flux is used to remove impurities which is is not removed during the concentration of ore**

**a) How does flux remove gangue?**

**b) The gangue present in an ore is FeO.Select a flux that can be used to remove tis gangue.**

**($CaO$,$MgO$,$SiO_2$)**

**(Hint: Metallic oxides are basic and non metallic oxides are acidic)**

**Hint.**

**a) Flux reacts with gangue to form low melting slag.**

**b) $SiO_2$ / Silica**

***Marks :(4)***

Hide Answer

**Qn No. 40** *Chapter Name:Production of Metals*

**Qn.**
**a)What are minerals?**

**b)All minerals are not ores.Why?(give two reasons)**

**Hint.**
**a)Naturally compounds of metals.**

**b)**

- **Ores are to be abundant,**
- **should have high metal content.**
- **Metals can be easily and economically seperated.(Any two)**

***Marks :(3)***

Hide Answer

**Qn No. 41** *Chapter Name:Production of Metals*

**Qn.**
**A is a carbonate ore of a metal and B is a sulphide ore of a metal.**

**a) Which method is used to concentrate the ore B**

**b)Which method is used to convert the concentrated ore A into the oxide**

**b)Select from those in the bracket the process in which the ore is converted to metal and write it.**

**( Oxidation, Electro plating, Reduction)**

**Hint.**
**a) Froath floation**

**b) Calcination**

**c)Reduction**

***Marks :(3)***

Hide Answer

**Qn No. 42** ***Chapter Name:Production of Metals***

**Qn.**
**Some ores are given.**

**a) Bauxite $Al_2O_3.2H_2O$**

**b) Zinc Blende ZnS**

**c) Tin Stone $SnO_2$**

**d)Haematite $Fe_2O_3$**

**Which of the above ore is roasted?**

**Which is the method used to concentrate tinstone?**

**Hint.**
**Zinc Blende**

**Magnetic separation**

***Marks :(2)***

Hide Answer

**Qn No. 43** ***Chapter Name:Production of Metals***

**Qn.**
**a) Which one of these is an alloyf steel.?**

**(Bronze, Aluminium Bronze, Nichrome, Brass)**

**b)Write any one characteristic of the above alloy.**

**Hint.**
**Answer key:**

**a)Nichrome**

**b)High resistance(Electrical/corrosion resistance)**

***Marks :(2)***

Hide Answer

**Qn No. 44** ***Chapter Name:Production of Metals***

**Qn.**
**a) Which is the reducing agent used to extract aluminium from alumina?**

**b)Complete the equation of ionisation of alumina during electrolysis**

**$Al_2O_3 \rightarrow$..... +.....**

**Hint.**
**a)Electricity**

**b)$Al_2O_3 \rightarrow 2Al^{3+} + 3O^{2-}$**

***Marks :(2)***

Hide Answer

PRINT

Qn No. 1 *Chapter Name:Compounds of Nonmetals*

**Qn.**
**The equation showing the reaction between potassium nitrate ( $KNO_3$ ) and sulphuric acid ($H_2SO_4$) is given**

$$KNO_3 + H_2SO_4 \longrightarrow KHSO4 + .....$$

**a) Complete the equation**

**b) Which of the given salts react with $H_2SO_4$ to form HCl**

**( $NaNO_3$ , $Mg(OH)_2$ , $CaSO_4$ , NaCl )**

**c) Write down the equation to represent the above reaction**

**Hint.**
**a) $HNO_3$**

**b) NaCl**

**c)** $2\,NaCl + H_2SO_4 \longrightarrow Na_2SO_4 + 2HCl$

***Marks :(3)***

Hide Answer

**Qn No. 2** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**The equation of the reaction of Conc.$H_2SO_4$ with carbon is given**

$$\overset{0}{C} + 2\,\overset{+1+6-2}{H_2SO_4} \longrightarrow \overset{+4\ -2}{CO_2} + 2\,\overset{+1\ -2}{H_2O} + \overset{+4\ -2}{2SO_2}$$

**a) The oxydation state of which one gets increased**

**b) Which is the reducing agent?**

**c) Which substance gets reduced?**

**Hint.**
**a) C**

**b) C**

**c) $H_2SO_4$**

***Marks :(3)***

Hide Answer

**Qn No. 3** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**When a few drops of an acid was added to blue copper sulphate crystals it was decolourised.**

**a) Which acid shows the above property?**

**b) Name the process of manufacture of the acid**

**c) Write any one use of the acid**

**Hint.**
**a) $H_2SO_4$**

**b) Contact process**

**c) Any one use**

***Marks :(3)***

Hide Answer

**Qn No. 4** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**a) Choose the chemicals used to prepare ammonia from the box given below**

| $KNO_3$ , $BaCl_2$ , $NH_4Cl$ , NaCl , $Ca(OH)_2$, $H_2SO_4$ |
|---|

**b) Complete the equation**

$NH_3 + H_2O \longrightarrow$ .....

**c) Liquor ammonia : concentrated aquous solution of ammonia**

**Liquid ammonia : . .....**

**Hint.**
**a) $NH_4Cl$ , $Ca(OH)_2$**

**b) $NH_4OH$**

**c) Liquified ammonia**

***Marks :(4)***

Hide Answer

**Qn No. 5** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**A pungent smell was felt when calcium hydroxide and ammonium chloride were mixed in a glass jar. The equation of the same is given below**

$2\,NH_4Cl + Ca(OH)_2 \longrightarrow CaCl_2 + 2\,H_2O + 2NH_3$

**a) Which is the gas formed here?**

**b) Write any one physical property of the gas formed**

**c) Write any one use of the gas formed**

**Hint.**
**a) Ammonia**

**b) Pungent smell / dissolve in water/ Density of ammonia is less than that of air**

**c) For the manufacture of chemical fertilisers / as a refrigent**

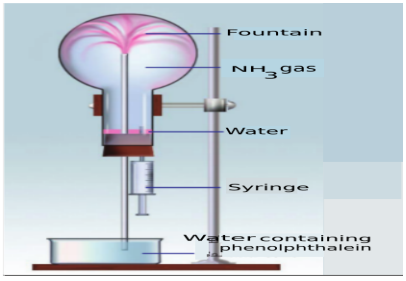
***Marks :(3)***

Hide Answer

**Qn No. 6** ***Chapter Name:Compounds of Nonmetals***

**Qn.**

**Analyse the figure and answer the questions**




**a) Why did water get into the flask on pressing the piston of syringe**

**b) What property of ammonia is exhibited by the change of colour of water entering the flask in to pink?**

**c) Complete the equation**

$NH_3 + H_2O \longrightarrow$ .....

**Hint.**
**(a) Decreasing the pressure in the flasks**

**(b) Basic nature**

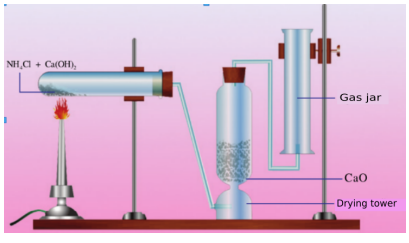
(c) $NH_3 + H_2O \longrightarrow NH_4OH$

***Marks :(3)***

Hide Answer

**Qn No. 7** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**The figure of preparation of Ammonia in the laboratory is given**



**a) Complete the equation**

$$2\,NH_4Cl + Ca(OH)_2 \longrightarrow CaCl_2 + 2\,H_2O + .....$$

**b) Why is the gas formed passed through the drying tower?**

**c)Can sulphuric acid be used as the drying agent in ammonia preparation. Why?**

**d) Ammonia is collected in an inverted gas jar. Why?**

**Hint.**

**a)**

$$2\,NH_4Cl + Ca(OH)_2 \longrightarrow CaCl_2 + 2\,H_2O + 2NH_3$$

**b) To remove the moisture**

**c) Ammonia is a base and it reacts with sulphuric acid**

**d) Density of ammonia is less than that of air**

***Marks :(4)***

Hide Answer

**Qn No. 8** ***Chapter Name:Compounds of Nonmetals***

**Qn.**

**The equation of manufacture of ammonia is given**

$$N_2 + 3H_2 \xrightarrow[\text{High pressure / Temperature}]{\text{Catalyst}} 2NH_3$$

**a) Name the process**

**b) Give any one use of ammonia**

**c) How can you identify Ammonia**

**Hint.**

**a) Haber process**

**b) For the manufacture of chemical fertilisers / as a refrigent**

**c) White fumes are formed when a glass tube dipped in HCl is shown in ammonia gas**

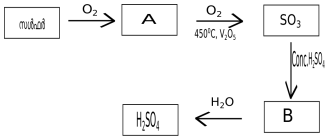
***Marks :(2)***

Hide Answer

**Qn No. 9** ***Chapter Name:Compounds of Nonmetals***

**Qn.**

**The flow chart of manufacture of sulphuric acid is given.**




**a) What are A and B**

**b) Sulphuric acid will be formed on dissolution of $SO_3$ in water. But this is not used in the manufacturing process.Why?**

**c) Write any one use of sulphuric acid**

**Hint.**
**a) A - $SO_2$**

**B - $H_2S_2O_7$**

**b) Dissolution of $SO_3$ in water is an exothermic process. So the droplets of $H_2SO_4$ formed causes 'fog' preventing further dissolution.**

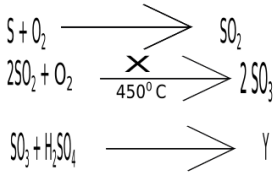
**c) Any one use**

***Marks :(4)***

Hide Answer

**Qn No. 10** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Different stages of manufacture of sulphuric acid are given below.**




**a) What are X and Y**

**b) How is Y converted to $H_2SO_4$**

**c) Name the process of manufacture of sulphuric acid**

**Hint.**
**a) X - $V_2O_5$**

**Y - $H_2S_2O_7$ ( Oleum )**

**b) By dissolving oleum ($H_2S_2O_7$ or Y) in water.**

**c) Contact process**

***Marks :(4)***

Hide Answer

**Qn No. 11** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Which property of sulphuric acid is exhibited in the following reactions?**

I) $C + H_2SO_4 \longrightarrow CO_2 + H_2O + SO_2$

II) $C_{12}H_{22}O_{11} \xrightarrow{Conc.H2SO4} 12C + 11H_2O$

**Hint.**
**a) Oxidising property**

**b) Dehydrating property**

***Marks :(2)***

Hide Answer

**Qn No. 12** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**a) A black substance is obtained when a few drops of Conc.$H_2SO_4$ is added to a little sugar taken in a watch glass. Identify the substance**

**b) Which property of sulphuric acid is exhibited here?**

**c) Complete the eqution**

$C_{12}H_{22}O_{11} \xrightarrow{Conc.H2SO4} 12C + .....$

**Hint.**
**a) carbon / C**

**b) Dehydration**

**c) 11 $H_2O$**

***Marks :(3)***

Hide Answer

**Qn No. 13** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Equation of the reaction between Cu and $H_2SO_4$ is given**

$Cu + 2H_2SO_4 \longrightarrow CuSO_4 + 2H_2O + 2SO_2$**a) The oxidation number of which one gets increased?**

**b) Which substance gets reduced?**

**c) Which is the reducing agent?**

**Hint.**
**a) Cu**

**b) $H_2SO_4$**

**c) Cu**

*Marks :(3)*

Hide Answer

**Qn No. 14** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**Write down an experiment to identify sulphate salts?**

**Hint.**

| Experiment | Observation |
|---|---|
| Add a little barium chloride solution to the sulphate solution taken in a test tube | A thick white precipitate is formed |
| To thick white precipitate add 2-3 drops of conc.HCl | white precipitate which does not dissolve in dil.HCl |

*Marks :(4)*

Hide Answer

**Qn No. 15** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**Complete the equation**

$Cu + 2H_2SO_4 \longrightarrow CuSO_4 + 2H_2O +$.....

**b) Which is the oxidising agent in this reaction?**

**Hint.**
**a) $SO_2$**

**b) Sulphuric acid**

*Marks :(2)*

Hide Answer

**Qn No. 16** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**Equation of the reaction between Cu and $H_2SO_4$ is given**

$Cu + 2H_2SO_4 \longrightarrow CuSO_4 + 2H_2O + 2SO_2$**a) The oxidation number of which one gets increased?**

**b) Which substance gets reduced?**

**c) Which is the reducing agent?**

**Hint.**
**a) Cu**

**b) $H_2SO_4$**

**c) Cu**

***Marks :(3)***

Hide Answer

**Qn No. 17** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
$NaCl + H_2SO_4 \longrightarrow NaHSO_4 + HCl$ **a) In the above reaction sodium chloride reacts with sulphuric acid to form hydrochloric acid. Like wise, if you want to prepare nitric acid which is the salt to be used**

**b) Write the equation of the reaction**

**Hint.**
**a) $KNO_3$ / Any one Nitrate salt**

**b) $KNO_3 + H_2SO_4 \rightarrow KHSO_4 + HNO_3$**

***Marks :(2)***

Hide Answer

**Qn No. 18** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**a) Gases like $Cl_2$ , $SO_2$ , HCl are passed through Conc. $H_2SO_4$ during their laboratory preparation. Which property of sulphuric acid is utilised here?**

**b) $NH_3$ gas is not passed through $H_2SO_4$ during its lab preparation. Why?**

**Hint.**
**a) Property as a drying agent**

**b) Ammonia which is basic reacts with sulphuric acid**

***Marks :(2)***

Hide Answer

**Qn No. 19** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**A few drops of Conc. $H_2SO_4$ are added to a little sugar crystals taken in a watch glass**

**a) What will be the observation?**

**b) Analyse the equation and explain the reason**

$$C_{12}H_{22}O_{11} \xrightarrow{\text{Conc. } H_2SO_4} 12\,C + H_2O$$

**c) Which property of sulphuric acid is exhibited here?**

**Hint.**
**a) Black/Brown colour develops**

**b) Sulphuric acid absorbs the elements hydrogen and oxygen present in sugar in the ratio 2:1 after converting it into water. So the sugar gets charred.**

**(or is converted to carbon)**

**c) Dehydration**

***Marks :(3)***

Hide Answer

**Qn No. 20** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**Why $SO_3$ is dissolved in concentrated sulphuric acid instead of in water during the manufacture of sulphuric acid?**

**Hint.**
**Dissolution of $SO_3$ in water is an exothermic process. So the droplets of sulphuric acid formed first forms fog which prevents the further dissolution**

***Marks :(2)***

Hide Answer

**Qn No. 21** *Chapter Name:Compounds of Nonmetals*

**Qn.**
$NaCl + H_2SO_4 \longrightarrow NaHSO_4 + HCl$ **a) In the above reaction sodium chloride reacts with sulphuric acid to form hydrochloric acid. Like wise, if you want to prepare nitric acid which is the salt to be used**

**b) Write the equation of the reaction**

**Hint.**
**a) $KNO_3$ / Any one Nitrate salt**

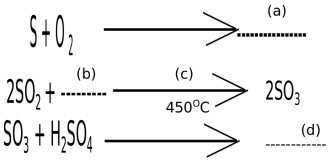
**b) $KNO_3 + H_2SO_4 \rightarrow KHSO_4 + HNO_3$**

***Marks :(2)***

Hide Answer

**Qn No. 22** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Complete the following equations related with the manufacture of sulphuric acid**




**i) Write a,b,c,d**

**ii) How is sulphuric acid prepared from oleum**

**Hint.**
**i) a - $SO_2$**

**b - $O_2$**

**c - Vanadium pentoxide/$V_2O_5$**

**d - $H_2S_2O_7$**

**ii) Oleum dissolved in water**

***Marks :(3)***

Hide Answer

**Qn No. 23** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**a) Name the process of manufacture of sulphuric acid ?**

**b) Which is the catalyst used in this process ?**

**Hint.**
**a) Contact process**

**b) Vanadium pentoxide /$V_2O_5$**

*Marks :(2)*

Hide Answer

**Qn No. 24** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**Carboxylic acid + Alcohol + Heat ⇋ Ester + Water**

**a. In order to get ester we have to heat the mixture. Do you agree with this statement. Explain your answer based on Le-Chatelier's Principle**

**b. What will happen to the forward reaction if the water formed in the system is removed from this system**

**Hint.**
**a. As the forward reaction is endothermic, heating leads to the formation of more amount of product**

**b. Rate of forward reaction increases**

*Marks :(4)*

Hide Answer

**Qn No. 25** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**$H_2 + I_2 \leftrightharpoons 2HI + Heat$**

**Consider the equilibrium and answer the questions**

**a. Which reaction is favoured on increasing the concentration of $I_2$**

**b. What is the effect of pressure on this equilibrium**

**c. HI is to be kept at low temperature to prevent decomposition. What is your opinion about this statement**

**Hint.**
**a. Forward reaction**

**b. Pressure has no effect**

**c. High temperatures favour the backward reaction, decomposition of HI. So it is to be kept at low temperature to prevent dissociation**

*Marks :(3)*

Hide Answer

**Qn No. 26** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**$N_2O_{4(g)} \leftrightharpoons 2NO_{2(g)}$**

**Consider this equilibrium and complete the table given below**

| Activity | Change in rate of forward reaction |
|---|---|
| • Heats | • |
| • Increase the pressure | • |
| • Removes $NO_2$ | • |

**Hint.**
**a. Increases**

**b. Decreases**

**c. Increases**

***Marks :(3)***

Hide Answer

**Qn No. 27** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Equation showing the decomposition of calcium cabonate is given.**

**$CaCO_{3(s)}$ + Heat $\leftrightharpoons$ $CaO_{(g)}$ + $CO_{2(g)}$**

**Say whether high temperature or low temperature is preferrable to enhance the rate of forward reaction**

**Hint.**
**High temperature. As the forward reaction is endothermic, high temperature enhances the rate of forward reaction.**

***Marks :(2)***

Hide Answer

**Qn No. 28** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Equation of ammonia manufacture is given**

**$N_2$+3$H_2$ $\leftrightharpoons$ 2$NH_3$ + Heat**

**a. Name the process of manufacture of ammonia.**

**b. What is the effect of pressure in the equilibrium?**

**c. Though the forward reaction is exothermic a comparatively high temperature of $450^0$c is used here, why?**

**Hint.**
**a. Haber process**

**b. Rate of forward reaction increases when the pressure is increased.**

**c. As the forward reaction is exothermic a low temperature can be preferred. But at low temperature, the speed of forward reaction will be low as the number of molecules possessing threshold energy is less. So optimum temperature of $450^0$c is used.**

***Marks :(4)***

Hide Answer

**Qn No. 29** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**$N_2 + O_2 + Heat \leftrightharpoons 2NO$**

**How does each of the factors given below affect the rate of forward reaction?**

**a. Decrease in temperature**

**b. Increase in pressure**

**c. Removal of NO**

**Hint.**
**a. Rate of forward reaction decreases**

**b. Does not have any effect in this reaction**

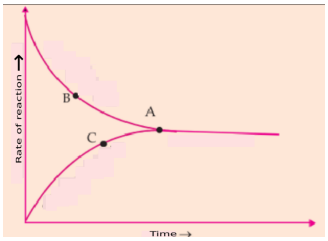
**c. Rate of forward reaction increases**

***Marks :(3)***

Hide Answer

**Qn No. 30** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**The graph representing a reversible reaction is given.**




**a. Which of the graph represents backward reaction?**

**b. At which point does the system attain equilibrium?**

**c. When a system attains equilibrium, the concentration of reactants and products will not change. Why?**

**Hint.**
**a. AC**

**b. A**

**c. Rate of forward and backward reactions are equal**

***Marks :(3)***

Hide Answer

**Qn No. 31** *Chapter Name:Compounds of Nonmetals*

**Qn.**

$CO_{(g)} + H_2O_{(g)} \leftrightharpoons CO_{2(g)} + H_{2(g)}$

**How do the factors given below affect the above system at equilibrium.**

**a Carbon dioxide is removed**

**b. More carbonmonoxide is added**

**c More hydrogen is added**

**Hint.**

**a. Rate of forward reaction is increased**

**b. Rate of forward reaction is increased**

**c Rate of forward reaction is decreased**

***Marks :(3)***

Hide Answer

**Qn No. 32** *Chapter Name:Compounds of Nonmetals*

**Qn.**

$N_{2(g)} + 3H_{2(g)} \leftrightharpoons 2NH_{3(g)}$

**Consider the system at equilibrium**

**a. Write any two methods to increase the amount of product.**

**b. Which is the catalyst that can be used here?**

**c. What is the effect of a catalyst on an equilibrium?**

**Hint.**

**a. Any two methods**

**b. Iron**

**c. A catalyst increase simultaneously the rate of forward and backward reactions, so the system can attain equilibrium very fast.**

***Marks :(4)***

Hide Answer

**Qn No. 33** *Chapter Name:Compounds of Nonmetals*

**Qn.**

$2SO_{2(g)} + O_{2(g)} \leftrightharpoons 2SO_{3(g)} + Heat$

**a. How will the increase in the amount of oxygen affect the forward reaction?**

**b. Will an increase in pressure help formation of more amount of products.**

**Hint.**
**a. Rate of forward reaction increases**

**b. Yes. According to Le- Chateleir principle, at high pressure, the system tries to decrease the volume by decreasing the number of gaseous molecules. Rate of forward reaction increases.**

***Marks :(3)***

Hide Answer

**Qn No. 34** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Consider the following chemical equilibrium**

**14.** $2CO(g) + O_2(g) \leftrightharpoons 2CO_2(g)$

**a. What are the reactants**

**b. What will happen to the equilibrium if more oxygen is added to the system. Explain**

**c. What will be the effect of increase in pressure on the forward reaction**

**Hint.**
**a. CO,** $O_2$ **(1)**

**b. According to the Le-Chateleir principle the system adjusts in such a way as to decrease the amount of oxygen.So the rate of forward reaction increases to form more products.**

**c. Increase the rate of forward reaction.**

***Marks :(4)***

Hide Answer

**Qn No. 35** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
$N_2(g) + 3H_2(g) \leftrightharpoons 2NH_3(g) +$ ഊർജം

**What will be the effect of the following factors on the system at equilibrium**

**a. Ammonia is removed from the system**

**b. Decreased the temperature**

**c. Decreased the pressure**

**d. Hydrogen is added**

**Hint.**
**a. Rate of forward reaction is increased to form more amount of product**

**b. Rate of forward reaction is increased**

**c. Increase the rate of backward reaction**

**d. Increase the rate of forward reaction**

***Marks :(4)***

Hide Answer

**Qn No. 36** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**12. A,B and C are three gases .1 mole of A reacts reversibly with 1 mole of B to form 2 mole of C.**

**a. Write the equation of the above reaction?**

**b. What will be the effect of pressure on this system when it attains equilibrium**

**c. What will happen to the equilibrium when more of A is added to the system**

**d. What will happen to the system at equilibrium when the amount of C is increased**

**Hint.**
**a. $A + B \leftrightharpoons 2C$**

**b. Pressure has no effect**

**c. Increase the rate of forward reaction to form more amount of products.**

**d. Increase the rate of backward reaction.**

***Marks :(4)***

Hide Answer

**Qn No. 37** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**$2HI_{(g)} + Heat \leftrightharpoons H_{2(g)} + I_{2(g)}$**

**Which among the following factor does not affect the system at equlibrium. Why?**

**(i) Increased the concentration of reactants**

**(ii) Added more hydrogen**

**(iii) Increased the temperature**

**(iv) Increased the pressure**

**Hint.**
**Increased the pressure. As the number of gaseous reactant molecules and gaseous product molecules are the same, pressure has no effect on this equilibrium.**

***Marks :(2)***

Hide Answer

**Qn No. 38** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**A system at equilibrium is given**

**$N_{2\,(g)} + 3H_{2\,(g)} \leftrightharpoons 2NH_{3\,(g)} + Heat$**

**(a) When does a reversible reaction attain equilibrium.**

**(b) What change occur in concentration of reactants and products when the system is equilibrium**

**(Concetration of reactant is equal to the concentration of product, Concentration of reactants and concentration of products remain as such, Concentration of product increases)**

**Hint.**
**a) When the rate of forward reaction and rate of backward reaction become equal.**

**b) Concentration of reactants and concentration of products remain as such**

***Marks :(2)***

Hide Answer

**Qn No. 39** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**Which among the following does not affect the rate of chemical reaction**

**(Temperature, Pressure, Colour of reactants, Concentration)**

**Hint.**
**Colour of reactants**

***Marks :(1)***

Hide Answer

**Qn No. 40** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**Optimum temperature used in the manufacture of ammonia is ----------**

**Hint.$450^0C$** ***Marks :(1)***

Hide Answer

**Qn No. 41** *Chapter Name:Compounds of Nonmetals*

**Qn.**
**$H_2(g) + I_2(g) \leftrightharpoons 2HI(g)$**

**Which of the following does not have any effect on the equilibrium?**

**(Temperature ,Pressure ,Concentration)**

**Hint.**
**Pressure**

***Marks :(1)***

Hide Answer

**Qn No. 42** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**A System at equilibrium is given**

$N_2O_{4\,(g)} \leftrightharpoons 2NO_{2\,(g)}$

**Write any two conditions which favour the formation of the $NO_2$ gas**

**Hint.**
**Decrease the pressure**

**Increase the temperature**

***Marks :(2)***

Hide Answer

**Qn No. 43** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Which of the following equilibria is not affected by change in pressure? Why?**

**i.** $H_{2\,(g)} + I_{2\,(g)} \leftrightharpoons 2HI_{(g)}$

**ii.** $N_2O_{4\,(g)} \leftrightharpoons 2NO_{2\,(g)}$

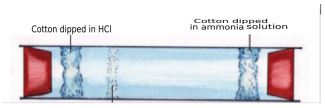
**Hint.**
**i) First case .In this case number of molecules of the reactants and products are same**

***Marks :(2)***

Hide Answer

**Qn No. 44** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Two bits of cotton wool dipped separately in Con HCl and ammonia solution are placed at the ends of a glass tube as shown in the figure.**



**a) What is the white fume formed by the reaction ?**

**b.Why is the thick white fume formed near the cotton wool dipped in Con.HCl.**

**Hint.**
**a. Ammonium chloride**

**b. Density of ammonia is lower than that of HCl**

***Marks :(2)***

Hide Answer

**Qn No. 45** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**A glass rod dipped in con HCl is shown in a gas jar filled with ammonia**

**a) Write the observation**

*b)* $NH_3 + HCl \rightarrow$ .....

**Hint.**
**a) Dense white forms are formed**

**b)** $NH_4Cl$ .

***Marks :(2)***

Hide Answer

**Qn No. 46** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**What is the difference between liquor ammonia and liquid ammonia.**

**Hint.**
**Concentrated aqueous solution is liquor ammonia**

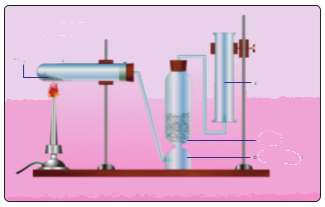
**Ammonia gas liquefied by high pressure is called liquid ammonia**

***Marks :(2)***

Hide Answer

**Qn No. 47** ***Chapter Name:Compounds of Nonmetals***

**Qn.**
**Observe the figure showing the the laboratory preparation of ammonia and answer the question**



**a) Through which substance is ammonia passed to make it dry ?**

**b) Ammonia is collected in an inverted gas jar. why?**

**c) Complete the equation**

**$2NH_4Cl + Ca(OH)_2$ ..... + .....+ $H_2O$**

**Hint.**

**a) Calcium oxide**

**b) Density of ammonia is less than that of air**

**c) $CaCl_2$ , $2NH_3$**

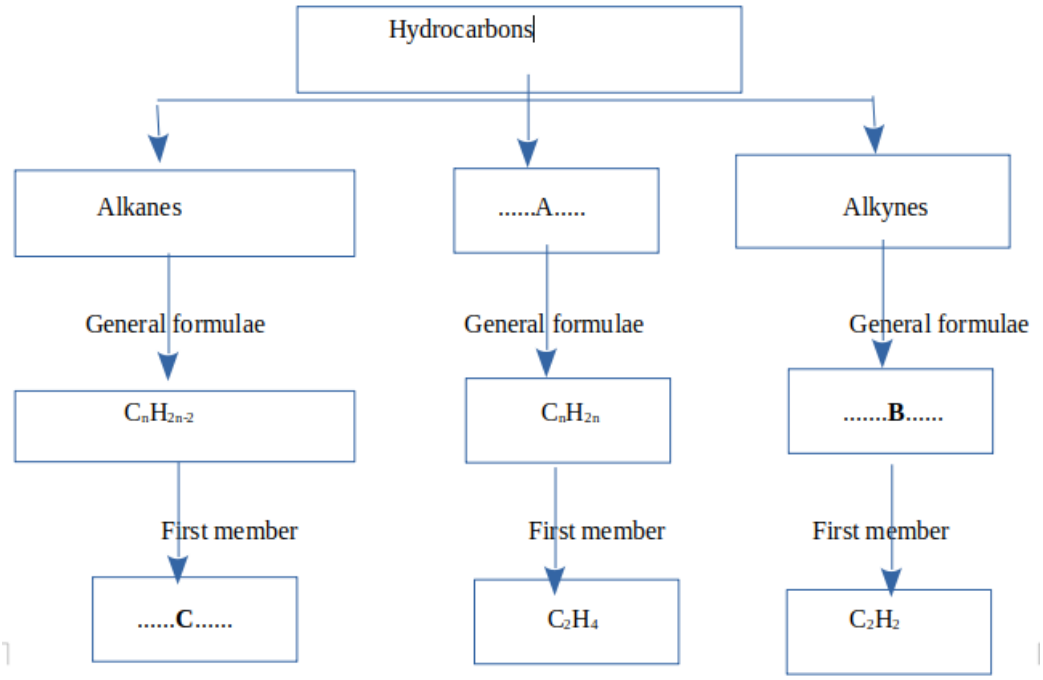
***Marks :(3)***

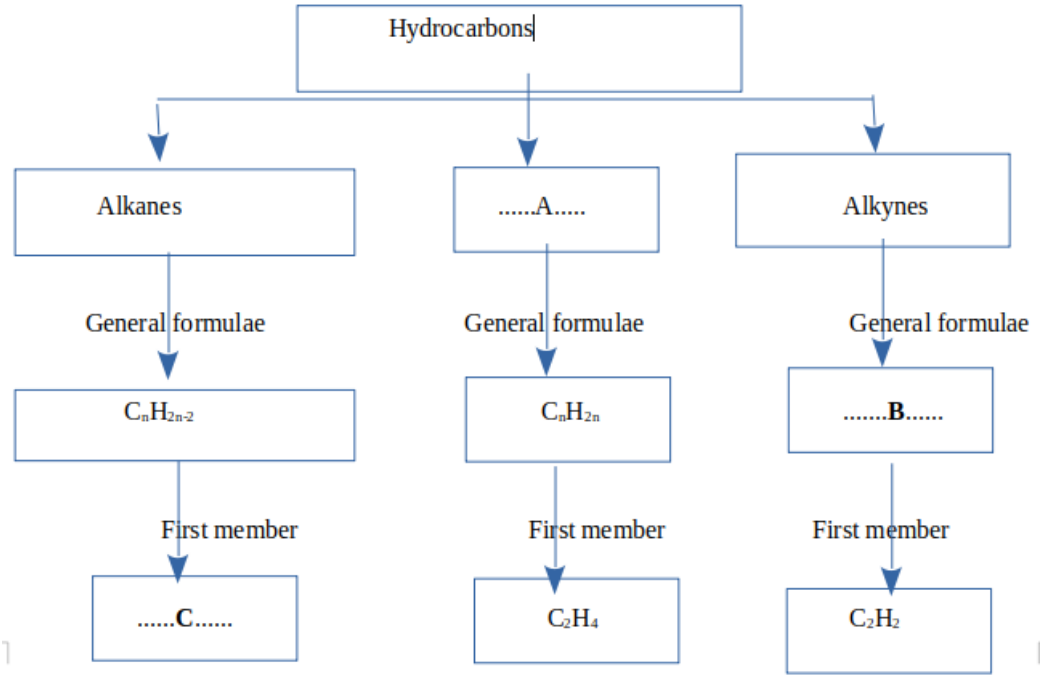
Hide Answer

PRINT

Qn No. 1 *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Complete the flow chart**




**Write A,B,and C**

**Hint.**
**A - Alkenes**

**B - $C_nH_{2n-2}$**

**C - $CH_4$**

**B - $C_nH_{2n-2}$**

C - $CH_4$

*Marks :(3)*

Hide Answer

**Qn No. 2** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**The hints regarding a cyclic compound are given.**

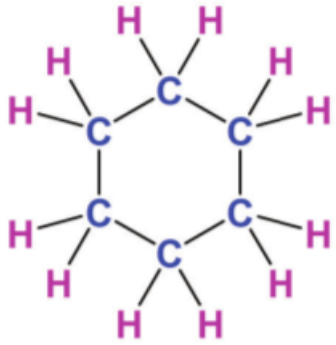
**There are 6 carbon atoms.**

**There are 12 hydrogen atoms**

1. **Write its structure**
2. **Write the molecular formula and IUPAC name of the alkane with the same number of carbon atoms**

**Hint.**

**1.**



**2.$C_6$ $H_{14}$ Hexane**

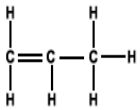
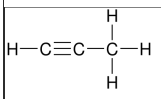
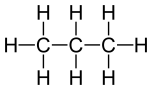
*Marks :(4)*

Hide Answer

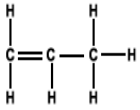
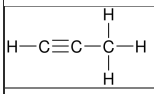
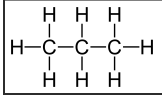
**Qn No. 3** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Match the following**

| A | B | C |
|---|---|---|

| | | |
|---|---|---|
|  | **Propyne** | **$C_3H_8$** |
|  | **Propane** | **$C_3H_6$** |
|  | **Propene** | **$C_3H_4$** |

**Hint.**

| A | B | C |
|---|---|---|
|  | **Propene** | **$C_3H_6$** |
|  | **Propyne** | **$C_3H_4$** |
|  | **Propane** | **$C_3H_8$** |

***Marks :(3)***

Hide Answer

**Qn No. 4** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Two hints regarding a hydrocarbon are given**

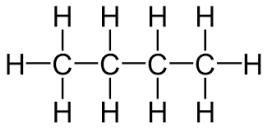
**There are four carbon atoms**

**The general formula of the family of compound is $C_nH_{2n+2}$**

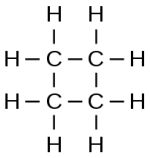
1. **Give the molecular formula of this compound**
2. **Write the structure**
3. **What will be the molecular formula of the hydrocarbon with the same number of carbon atoms and having a double bond**
4. **Write the structure of the cyclic hydrocarbon with the same number of carbon atoms**

**Hint.**

1. $C_4H_{10}$

2. 

3. $C_4H_8$

4. 
cyclobutane

***Marks :(4)***

Hide Answer

**Qn No. 5** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Choose the odd one out . Give reason**

**( $CH_4$ , $C_3H_4$ , $C_2H_2$ , $C_2H_4$ )**

**Hint.**
**$CH_4$**

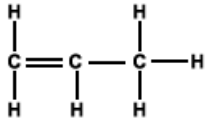
**$CH_4$ is a saturated hydrocarbon where as the others are unsaturated**

***Marks :(2)***

Hide Answer

**Qn No. 6** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The structure of a hydrocarbon is given**



1. **Give its molecular formula**
2. **Write the IUPAC name of the compound**
3. **Write the IUPAC name of the cyclic compound with the same molecular formula**

**Hint.**

1. $C_3H_6$
2. **Propene**
3. **Cyclopropane**

***Marks :(3)***

Hide Answer

**Qn No. 7** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Complete this series**

| | | | |
|---|---|---|---|
| $C_2H_4$ | $C_3H_6$ | $C_4H_8$ | .....a..... |

| | | | |
|---|---|---|---|
| $CH_4$ | $C_2H_6$ | .....b..... | $C_4H_{10}$ |

| | | | |
|---|---|---|---|
| $C_2H_2$ | ..... c..... | $C_4H_6$ | $C_5H_8$ |

**Hint.**
**a )** $C_5H_{10}$

**b )** $C_3H_8$

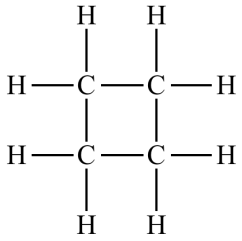
**c )** $C_3H_4$

***Marks :(3)***

Hide Answer

**Qn No. 8** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The structure of a hydrocarbon is given**



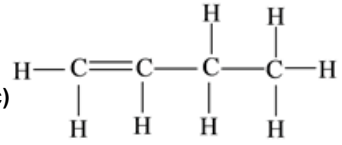
**a)Give its molecular formula**

**b)Write its IUPAC name**

**c)Write the structure of the unsaturated compound with the same molecular formula**

**Hint.**
**a)$C_4H_8$**

**b)Cyclobutane**

**c)** 

1-butene

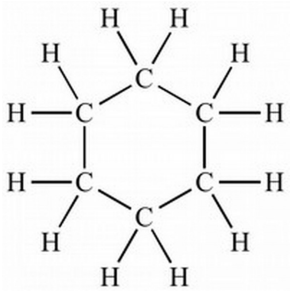
**or $CH_3$-CH=CH-$CH_3$**

***Marks :(3)***

Hide Answer

**Qn No. 9** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Look at the structure of the hydrocarbon**



**a)To which category of hydrocarbons does this compound belong?**

**b)Give the molecular formula of this compound**

**c)Name this compound**

**Hint.**

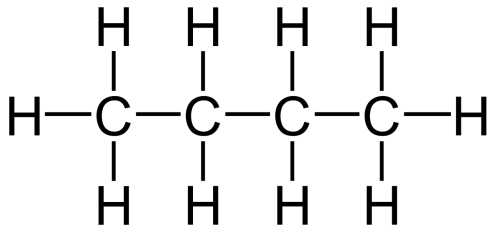
1. **Cyclic compound**
2. **$C_6H_{12}$**
3. **Cyclohexane**

***Marks :(3)***

Hide Answer

**Qn No. 10** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The structure of a hydrocarbon is given**



**a) Write its molecular formula**

**b) What is the word root used to represent the number of carbon atoms ?**

**c) Write its IUPAC name**

**Hint.**
**a)$C_4H_{10}$**

**b)But**

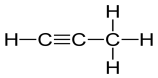
**c)Butane**

***Marks :(3)***

Hide Answer

**Qn No. 11** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The structure of a hydrocarbon is given**



**a) What is the molecular formula of this compound**

**b) Write its IUPAC name**

**c) To which homologous series does this compound belong?**

**Hint.**
**a) $C_3H_4$**

**b) Propyne**

**c) Alkyne**

***Marks :(3)***

Hide Answer

**Qn No. 12** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**To which category does $CH_3$-$CH_2$-$CH_3$ belong?**

**( Alkane,Alkene, Alkyne, Cyclo alkane )**

**Hint.**
**Alkane**

***Marks :(1)***

Hide Answer

**Qn No. 13** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Write the structure of $C_3H_8$**

**Hint.**
**$CH_3$-$CH_2$-$CH_3$**

***Marks :(1)***

Hide Answer

**Qn No. 14** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Name the functional group of $CH_3$-$CH_2$-OH ?**

**Hint.**
**Hydroxyl**

***Marks :(1)***

Hide Answer

**Qn No. 15** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**

*The structure of hydrocarbon is given.*

$CH_3$-$CH_2$-$CH_2$-$CH_2$-$CH_2$-$CH_3$

**(a) Write the word root used to represent the number of carbon atoms in this compound ?**

**(b) Give the IUPAC name of this hydrocarbon**

**Hint.**
**(a) Hex**

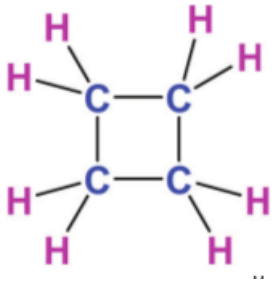
**(b) Hexane**

***Marks :(2)***

Hide Answer

**Qn No. 16** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Structure of a cyclic compound is given**




**a)Write the molecular formula of the compound**

**b)Write its IUPAC name**

**c) Write the structure of an open chain hydrocarbon having the same formula**

**Hint.**

1. $C_4H_8$
2. Cyclobutane
3. $CH_2$ = CH- $CH_2$-$CH_3$ / $CH_3$-CH = CH- $CH_3$

***Marks :(3)***

Hide Answer

**Qn No. 17** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Some hydrocarbons are given in the box**

| $C_3H_4$ , $C_2H_6$ , $C_2H_2$ , $C_4H_8$ , $C_5H_{10}$, $C_3H_8$ |
|---|

1. **Which belong to the family with the general formula $C_nH_{2n+2}$**
2. **Which compounds have a triple bond**

3. Select the alkenes from the box ?

**Hint.**

1. $C_2H_6$ , $C_3H_8$
2. $C_3H_4$ , $C_2H_2$
3. $C_4H_8$ , $C_5H_{10}$

***Marks :(3)***

Hide Answer

**Qn No. 18** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The details of the hydrocarbon P are given below**

1. There are 3 carbon atoms
2. The family of compounds with P as a member has a general formula $C_nH_{2n}$
3. The IUPAC name of P is Propene

1. Write the condensed formula of the compound
2. Write the IUPAC name of the compound which is before P in the homologous series
3. Give the molecular formula of the compound succeeding P in the series

**Hint.**

1. $CH_2 = CH- CH_3$
2. Ethene
3. $C_4H_8$

***Marks :(3)***

Hide Answer

**Qn No. 19** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The details of the hydrocarbon P are given below**

1. There are 3 carbon atoms
2. The family of compounds with P as a member has a general formula $C_nH_{2n}$
3. The IUPAC name of P is Propene

1. Write the condensed formula of the compound
2. Write the IUPAC name of the compound which is before P in the homologous series
3. Give the molecular formula of the compound succeeding P in the series

**Hint.**

1. $CH_2 = CH- CH_3$
2. Ethene
3. $C_4H_8$

***Marks :(3)***

Hide Answer

**Qn No. 20** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Given below is a homologous series**

| | | | |
|---|---|---|---|
| $C_2H_2$ | ....A.... | $C_4H_6$ | ....B.... |

1. What are A and B
2. To which family do this belong?
   ( Alkane, Alkene, Alkyne )
3. Write the IUPAC name of A

**Hint.**

1. A - $C_3H_4$
   B - $C_5H_8$
2. Alkyne
3. Propyne

***Marks :(4)***

Hide Answer

**Qn No. 21** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Given below is a homologous series**

| | | | |
|---|---|---|---|
| $C_2H_2$ | ....A.... | $C_4H_6$ | ....B.... |

1. **What are A and B**

2. **To which family do this belong?**

   **( Alkane, Alkene, Alkyne )**

3. **Write the IUPAC name of A**

**Hint.**

1. **A - $C_3H_4$**

   **B - $C_5H_8$**

2. **Alkyne**

3. **Propyne**

***Marks :(4)***

Hide Answer

**Qn No. 22** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**The formulae given below are of a homologous series**

| | | |
|---|---|---|
| $CH_4$ | $C_2H_6$ | $C_3H_8$ |

1. **To which category does this belong?**

   **( Alkane, Alkene, Alkyne )**

2. **Write the general formula of this family**

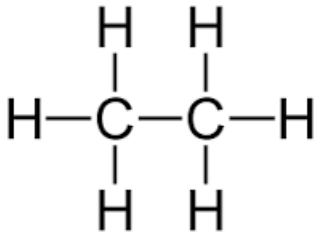
3. **Write the structure of $C_2H_6$**

4. **Write the IUPAC name of $CH_4$**

**Hint.**

1. **Alkane**

2. **$C_nH_{2n+2}$**

3. 

4. **Methane**

***Marks :(4)***

Hide Answer

**Qn No. 23** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The molecular formulae of some hydrocarbons are given**

| |
|---|
| **$C_2H_4$ , $C_2H_2$ , $C_2H_6$ , $C_3H_4$ , $C_3H_8$** |

1. **Which one belongs to the alkene family?**

2. **To which family does $C_2H_2$ belong?**

3. **Which belong to the family with general formula $C_nH_{2n+2}$**

**Hint.**

1. **$C_2H_4$**
2. **Alkyne**
3. **$C_2H_6$ , $C_3H_8$**

***Marks :(3)***

Hide Answer

**Qn No. 24** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Self linking property of carbon atoms is known as ----------**

**Hint.**

**Catenation**

***Marks :(1)***

Hide Answer

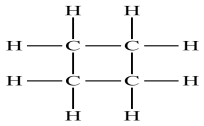
**Qn No. 25** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The molecular formula of a cyclic compound is $C_4H_8$.**

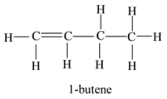
**a) Write the structure of this compound**

**b) Write the structure of the open chain hydrocarbon having the same molecular formula**

**Hint.**
**a)**



**b)**



1-butene

***Marks :(3)***

Hide Answer

**Qn No. 26** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**What is the minimum number of carbon atoms required to form a cyclic comound.**

**(4 ,3 , 2 , 5 )**

**Hint.3** ***Marks :(1)***

Hide Answer

**Qn No. 27** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The formulae given below are of a homologous series**

| | | |
|---|---|---|
| $CH_4$ | $C_2H_6$ | $C_3H_8$ |

1. To which category does this belong?

   ( Alkane, Alkene, Alkyne )

2. Write the general formula of this family

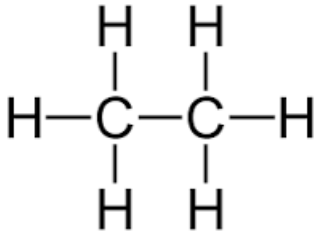
3. Write the structure of $C_2H_6$

4. Write the IUPAC name of $CH_4$

Hint.

1. Alkane

2. $C_nH_{2n+2}$

3. 

4. Methane

*Marks :(4)*

Hide Answer

**Qn No. 28** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

Qn.

Match the following

| A | B | C |
|---|---|---|
| Molecular formula | Condensed formula | IUPAC Name |
| $C_3H_4$ | $CH_3$ -$CH_2$ -$CH_3$ | Propyne |
| $C_4H_8$ | CH≡ C - $CH_3$ | Butene |
| $C_3H_8$ | $CH_2$ = CH- $CH_2$ - $CH_3$ | Propane |

Hint.

| A | B | C |
|---|---|---|

| Molecular formula | Condensed formula | IUPAC Name |
|---|---|---|
| $C_3H_4$ | $CH \equiv C - CH_3$ | Propyne |
| $C_4H_8$ | $CH_2 = CH- CH_2 - CH_3$ | Butene |
| $C_3H_8$ | $CH_3 -CH_2 -CH_3$ | Propane |

***Marks :(3)***

Hide Answer

**Qn No. 29** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The molecular formula of a hydrocarbon is $C_2H_4$**

**a) Name the homologous series of which this is a member**

**b) Write the molecular formula of the Fifth member**

**c) Write the structure of $C_2H_4$ and give its IUPAC name**

**Hint.**
**(a) Alkene**

**(b) $C_6H_{12}$**

**(c) $CH_2 = CH_2$ ; Ethene**

***Marks :(3)***

Hide Answer

**Qn No. 30** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The molecular formula of a hydrocarbon is $C_2H_4$**

**a) Name the homologous series of which this is a member**

**b) Write the molecular formula of the Fifth member**

**c) Write the structure of $C_2H_4$ and give its IUPAC name**

**Hint.**
**(a) Alkene**

**(b) $C_6H_{12}$**

**(c) $CH_2 = CH_2$ ; Ethene**

*Marks :(3)*

Hide Answer

**Qn No. 31** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Categorise the given hydrocarbons**

**$C_2H_4$ , $C_3H_8$ , $C_4H_6$ , $CH_4$ , $C_5H_{10}$ , $C_6H_{10}$**

**(Hint: Hydrocarbons can be catogorised as Alkanes, Alkenes, Alkynes)**

**Hint.**
**Alkanes : $CH_4$ , $C_3H_8$**

**Alkenes : $C_2H_4$ , $C_5H_{10}$**

**Alkynes : $C_4H_6$ , $C_6H_{10}$**

*Marks :(3)*

Hide Answer

**Qn No. 32** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Molecular formulae of some hydrocarbons are given in the box**

| $C_3H_6$ , $C_4H_8$ , $C_5H_{10}$ , $C_6H_{12}$ |
|---|

**a) To which Homologous series do these belong?**

**b) Give two reasons for them being homologous.**

**Hint.**
**a) Alkene**

**(b) i. Immediate neighbours differ by $CH_2$**

**ii. Can be represented by a general formula $C_nH_{2n}$**

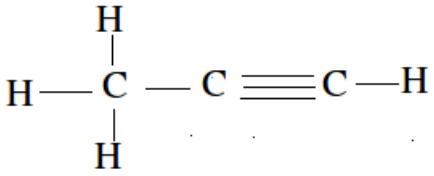
*Marks :(3)*

Hide Answer

**Qn No. 33** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**

**The structure of a hydrocarbon is given**



**a) Write the condensed formula**

**b) Write its molecular formula**

**c) Write the structure of the first member of homologous series having this one as a member and give its IUPAC name**

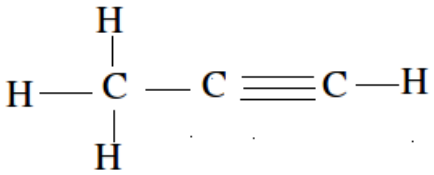
**Hint.**
**എ) $CH_3$ - C ≡ CH**
**ബി) $C_3H_4$**
**സി) CH ≡ CH Ethyne**

***Marks :(4)***

Hide Answer

**Qn No. 34** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**The structure of a hydrocarbon is given**



**a) Write the condensed formula**

**b) Write its molecular formula**

**c) Write the structure of the first member of homologous series having this one as a member and give its IUPAC name**

**Hint.**
**എ) $CH_3$ - C ≡ CH**
**ബി) $C_3H_4$**
**സി) CH ≡ CH Ethyne**

***Marks :(4)***

Hide Answer

**Qn No. 35** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**$C_2H_6$ , $C_3H_8$ , ..... , $C_5H_{12}$ are the members of a homologous series**

**a)Write the molecular formula of the missing compound**

**b)What is the name of this homologous series**

**c)Write the structure of $C_2H_6$**

**Hint.**
**a) $C_4H_{10}$**

**b) Alkane**

**c) $CH_3$ - $CH_3$**

***Marks :(3)***

Hide Answer

**Qn No. 36** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Name the functional group present in the compound $CH_3$-$CH_2$-$CH_2$-OH ?**

**Hint.**
**Hydroxyl**

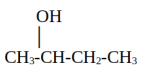
***Marks :(1)***

Hide Answer

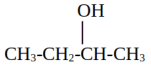
**Qn No. 37** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**The structures written by two students are given**

**Student 1:**




**Student 2 :**




**Write the IUPAC names and say whether these two are isomeric pairs**

**Hint.**
**Student 1: Butan -2- Ol.**

**Student 2: Butan -2- Ol.**

**As both are the structure of the same compound they are not isomeric pairs**

***Marks :(4)***

Hide Answer

**Qn No. 38** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**

| $C_3H_6$ , $C_3H_4$, $C_4H_8$, $C_4H_{10}$ |
|---|

**Of the given compounds, the name of which one ends with "-yne"**

**Hint.$C_3H_4$** ***Marks :(1)***

Hide Answer

**Qn No. 39** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**$C_2H_6$ , $C_3H_8$ , ..... , $C_5H_{12}$ are the members of a homologous series**

**a)Write the molecular formula of the missing compound**

**b)What is the name of this homologous series**

**c)Write the structure of $C_2H_6$**

**Hint.**
**a) $C_4H_{10}$**

**b) Alkane**

**c) $CH_3$ - $CH_3$**

***Marks :(3)***

Hide Answer

**Qn No. 40** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Some molecular formulae are given**

**(i) $C_5H_{12}$ (ii)$C_5H_{10}$ (iii) $C_5H_8$ (iv) $C_5H_{12}O$**

**a) Which of the above is the molecular formula of Pent-2-ene ?**

**b)Write the stucture of pent-2-ene.**

**c) Can there be a compound named pent-3-ene**

**Hint.**
**(a) $C_5H_{10}$**

**(b) correct structure**

**(b) No**

***Marks :(2)***

Hide Answer

**Qn No. 41** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Write the two possible structures of compounds with molecular formula $C_2H_6O$.Write their IUPAC names.**

**Hint.**
**(a) $CH_3$-O-$CH_3$ Methoxymethane**

**(b) $CH_3$-$CH_2$-OH Ethanol**

***Marks :(4)***

Hide Answer

**Qn No. 42** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**The molecular formula of the carboxylic acid in vinegar is $C_2H_4O_2$**

**(a) Write the structural formula**

**(b) Give its IUPAC name**

**Hint.**
**(a) $CH_3$-COOH**

**(b) Ethanoicacid**

***Marks :(2)***

Hide Answer

**Qn No. 43** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**$CH_3$-$CH_2$-$CH_2$-$CH_2$-$CH_2$-$CH_3$**

**(a) Give the IUPAC name of the given open chain compound.**

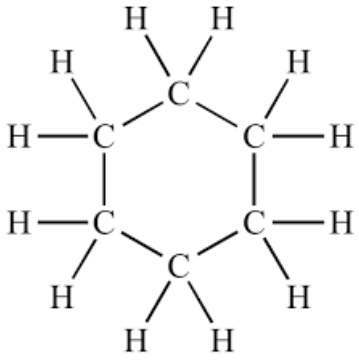
**(b) Write the structure of the cyclic compound having the same number of**

**carbon atoms**

**(c) Write the IUPAC name of this cyclic compound**

**Hint.**
**(a) Hexane**

**(b)**



**or any other correct answer**

**(c) Cyclohexane**

***Marks :(4)***

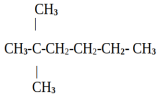
Hide Answer

**Qn No. 44** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**(a) Write the structure of 2,2-dimethylhexane**

**(b) Write the structure of any one its chain isomer**

**Hint.**



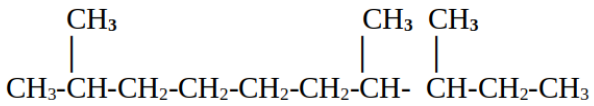
**(b) any correct one**

***Marks :(2)***

Hide Answer

**Qn No. 45** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**



**The main chain consists of 10 carbon atoms and the same is represented by the word root 'dec'**

**(a) Give the position of the branches**

**(b) Write the IUPAC name of the compound**

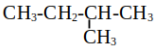
**Hint.**
**(a) 2,7,8**

**(b) 2,7,8 – Trimethyldecane**

***Marks :(2)***

Hide Answer

**Qn No. 46** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.** 

**(a) How many carbon atoms are there in the main chain?**

**(b) Number the position of the carbon with the branch ?**

**(c) Name the branch?**

**(d) Write the IUPAC name of the compound**

**Hint.**
**(a) 4**

**(b) 2**

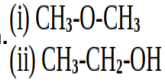
**(c) Methyl**

**(d) 2- Methylbutane**

***Marks :(4)***

Hide Answer

**Qn No. 47** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.** 

**(a) Write the IUPAC names of the given compounds**

**(b) Which type of isomers are these compounds ?**

**Hint.**
**(a) (i) Methoxymethane**

**(ii) Ethanol**

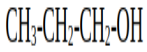
**(b) Functional Isomers**

*Marks :(2)*

Hide Answer

**Qn No. 48** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Look at the structure**



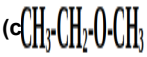
**(a) Write its IUPAC name**

**(b) Name its position isomer**

**(c) Write the structure of its functional isomer**

**Hint.**
**a)Propan-1-ol**

**b) Propan-2-ol**

**(c** 

*Marks :(3)*

Hide Answer

**Qn No. 49** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Match suitably**

| | |
|---|---|
| $CH_3$-$CH_2$-$CH_2$-$CH_2$-$CH_3$ | **2,2- Dimethylpropane** |
| $CH_3$–CH(–$CH_3$)–$CH_2$–$CH_3$ | **Pentane** |
| $CH_3$–C($CH_3$)($CH_3$)–$CH_3$ | **2- Methylbutane** |

**Hint.**

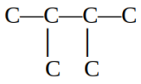
| | |
|---|---|
| $CH_3$-$CH_2$-$CH_2$-$CH_2$-$CH_3$ | **Pentane** |
| $CH_3$–CH(–$CH_3$)–$CH_2$–$CH_3$ | **2- Methyl butane** |
| $CH_3$–C($CH_3$)($CH_3$)–$CH_3$ | **2,2- Di methyl Propane** |

*Marks :(3)*

Hide Answer

**Qn No. 50** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**The chain of a hydrocarbon is given**



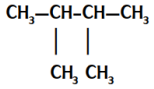
**(a) Complete the structure**

**(b) How many carbon atoms are there in the longest chain**

**(c) Give the position of the branch**

**(d) Write down the IUPAC name of the compound**

**Hint.**
**(a)**



**(b) 4**

**(c) 2,3**

**(d) 2,3-Dimethylbutane**

*Marks :(4)*

Hide Answer

**Qn No. 51** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**The structure of a compound is** $CH_3\text{-}O\text{-}CH_3$

**(a) What is the IUPAC name of the compound**

**(b) Write the structure of its isomer**

**(c) What is the IUPAC name of this isomer.**

**(d) What type of isomers are these compounds?**

**Hint.**
**(a) Methoxy methane**

**(b)** $CH_3\text{-}CH_2\text{-}OH$

**(c) Ethanol**

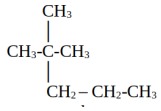
**(d) Functional isomers**

*Marks :(4)*

Hide Answer

**Qn No. 52** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**



**(a) How many carbon atoms are there in the longest chain of the compound given above?**

**(b) Give the position of the branches ?**

**(c) Write the IUPAC name of this compound**

**Hint.**
**(a) 5**

**(b) 2,2**

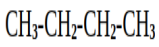
**(c) 2,2-Di methyl pentane**

***Marks :(3)***

Hide Answer

**Qn No. 53** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**See the structure given**



**(a) Write the IUPAC name of this compound**

**(b) Write the molecular formula of the alkene having the same number of**

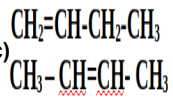
**carbon atoms**

**(c) Write the structures of the position isomers of this alkene.**

**Hint.**
**(a) Butane**

**(b) $C_4H_8$**

**(c)**



***Marks :(4)***

Hide Answer

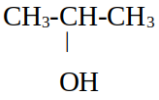
**Qn No. 54** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**a) Choose any pairs showing different types of isomerism from the structures given**

**. $CH_3$-O-$CH_2$-$CH_3$**

**3. $CH_3$-$CH_2$-$CH_2$- OH**

**4.**



**b) To which type of isomerism do these pairs belong?**

**Hint.**

**1. $CH_3$-O-$CH_2$-$CH_3$ / $CH_3$-$CH_2$-$CH_2$- OH**

**OH**

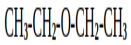
***Marks :(4)***

Hide Answer

**Qn No. 55** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**

**Examine the given structure**



**(a) Give the name of the functional group?**

**(b) Write the common name of the category of compounds with this functional group?**

**(c) Give the IUPAC name of the compound**

**Hint.**

**(a)Alkoxy group OR Ethoxy**

**(b)Ethers**

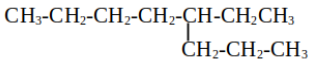
**(c)Ethoxyethane**

***Marks :(3)***

Hide Answer

**Qn No. 56** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**



**(a) How many carbon atoms are there in the parent chain of the above compound?**

**(b) What is the position of the branched carbon ?**

**(c) Give the name of the branch?**

**(d) Write the IUPAC name of the compound**

**Hint.**
**(a) 8**

**(b) 4**

**(c) Ethyl**

**(d) 4- Ethyloctane**

***Marks :(4)***

Hide Answer

**Qn No. 57** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**To which category does the compound $CH_3$-CH=$CH_2$ belong?**

**( Alkane,Alkene, Alkyne, Cyclo alkane )**

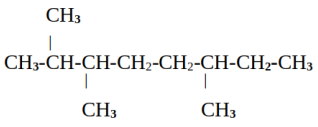
**Hint.**
**Alkene**

***Marks :(1)***

Hide Answer

**Qn No. 58** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**



**(a) How many branches are there in the compound ?**

**(b)Give the position of the branches ?**

**(c) Write the IUPAC name**

**Hint.**
**(a) 3**

**(b) 2,3,6**

**(c)2,3,6- Trimethyloctane**

***Marks :(3)***

Hide Answer

**Qn No. 59** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**Write the structure of but-2-ene**

**Hint.**
**$CH_3$-CH=CH-$CH_3$**

***Marks :(1)***

Hide Answer

**Qn No. 60** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**To which category does CH≡CH belong?**

**( Alkane,Alkene, Alkyne, Cyclo alkane )**

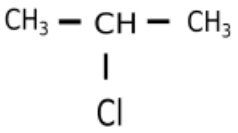
**Hint.**
**Alkyne**

***Marks :(1)***

Hide Answer

**Qn No. 61** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
***Examine the given structural formula***



**(a) What is the molecular formula of the compound.**

**(b) Identify the functional group?**

**(c) Give the IUPAC name of the compound**

**(d) Write the structure of its isomer**

**Hint.**
**(a) $C_3H_7Cl$**

**(b) chloro / -Cl**

**(c) 2- chloropropane**

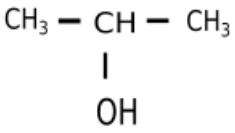
**(d) $CH_3$-$CH_2$-$CH_2$-Cl**

***Marks :(4)***

Hide Answer

**Qn No. 62** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**



**(a) Name the functional group in this compound ?**

**(b) What is the common name of compounds with this functional group ?**

**(c) Give the IUPAC name of the compound**

**Hint.**
**(a) Hydroxyl**

**(b) Alcohols**

**(c) Propan -2-ol**

***Marks :(3)***

Hide Answer

**Qn No. 63** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
***The IUPAC name of a compound is*** **Pent-2-yne**

**(a) To which category of hydrocarbons does this belong ?**

**( Alkane,Alkene, Alkyne,)**

**(b) Give the structure of the compound**

**(c) What is its molecular formula ?**

**Hint.**
**(a) Alkyne**

**(b) $CH_3$-C≡C-$CH_2$ -$CH_3$**

**(c) $C_5H_8$**

***Marks :(3)***

Hide Answer

**Qn No. 64** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**The structure of a compound is** $CH_3$-C≡C-$CH_3$

**(a) What is its molecular formula**

**(b) To which category of hydrocarbon does this hydrocarbon belong**

**( Alkane,Alkene, Alkyne,)**

**(c) Give the IUPAC name of this compound**

**Hint.**
**(a) $C_4H_6$**

**(b) Alkyne**

**(c) But -2-yne**

***Marks :(3)***

Hide Answer

**Qn No. 65** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
***The IUPAC name of a compound is*** **Pent-2-yne**

**(a) To which category of hydrocarbons does this belong ?**

**( Alkane,Alkene, Alkyne,)**

**(b) Give the structure of the compound**

**(c) What is its molecular formula ?**

**Hint.**
**(a) Alkyne**

**(b) $CH_3$-C≡C-$CH_2$ -$CH_3$**

**(c) $C_5H_8$**

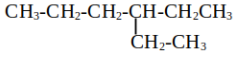
***Marks :(3)***

Hide Answer

**Qn No. 66** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Write the structure of**

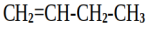
**3- Ethylhexane**

**Hint.** 

***Marks :(1)***

Hide Answer

**Qn No. 67** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.** 
**(a) Write the IUPAC name of the compound**

**(b) What will be the IUPAC name of the compound, if the double bond were in between the second and third carbon atoms?**

**Hint.**
**(a)But-1-ene**

**(b)But -2-ene**

***Marks :(2)***

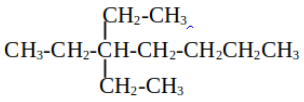
Hide Answer

**Qn No. 68** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**Write the structure of**

**3,3 – Diethylheptane**

**Hint.**




***Marks :(1)***

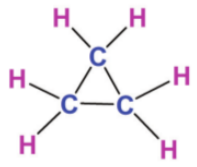
Hide Answer

**Qn No. 69** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

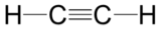
**Qn.**
**Some carbon compounds are given**

**i) $CH_2=CH_2$**

**ii)**




**iii)**




ethyne
(acetylene)

**iv) $CH_3$-$CH_2$-$CH_3$**

**a) Catogarise the above as alkane, alkene, alkyne and cyclic compound**

**b) Most of the compounds in nature contains carbon. Do you agree with this statement? Justify**

**Hint.**
**i ) Alkene**

**ii ) Cyclic compounds**

**iii ) Alkyne**

**iv ) Alkane**

**b) Agree.**

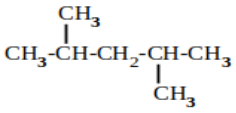
**Carbon forms extremely large number of compounds. Compounds with single,double, and triple bonds between carbon atoms can be formed .Has self linking property catenation to form chains and rings**

***Marks :(4)***

Hide Answer

**Qn No. 70** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**



**(a) How many carbon atoms are there in the main chain ?**

**(b)Give the position of the branches?**

**(c) Write the IUPAC name**

**Hint.**
**(a) 5**

**(b) 2,4**

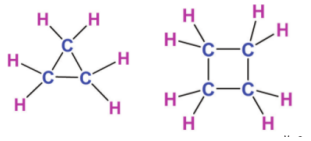
**(c)2,4- Dimethylpentane**

***Marks :(3)***

Hide Answer

**Qn No. 71** ***Chapter Name:Nomenclature of Organic compounds and Isomerism***

**Qn.**
**A few structures are given**

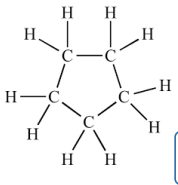


**a) By which name are these compounds known?**

**b) How many hydrogen atoms will be there in such a compound with five carbon atoms. Write the structure and give its IUPAC name**

**Hint.**
**a) Cyclic compounds**

**b) 10 atoms, Cyclopentane**

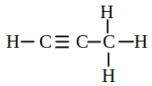


***Marks :(4)***

Hide Answer

**Qn No. 72** *Chapter Name:Nomenclature of Organic compounds and Isomerism*

**Qn.**
**The structure of a hydrocarbon is given**



**1.Write the IUPAC name of this compound**

**2.Write the general formula of the family having this one as a member**

**($C_nH_{2n+2}$ , $C_nH_{2n}$ , $C_nH_{2n-2}$ )**

**3.Write the molecular formula of the compound after this one in the homologous series**

**Hint.**

1. **Propyne**
2. **$C_nH_{2n-2}$**
3. **$C_4H_6$**

***Marks :(3)***

Hide Answer

PRINT

Qn No. 1 *Chapter Name:Reactions of Organic Compounds*

**Qn.**

**$CH_4 + Cl \xrightarrow{SUNLIGHT} A + HCl$**

**a. What is the name of the compound A?**

**b. To which type does this reaction belong?**

**(Addition reaction, Substitution reaction, Combustion, Polymerisation)**

**Hint.**
**a. $CH_3Cl$**

**b. Substitution reaction**

***Marks :(2)***

Hide Answer

**Qn No. 2** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Answer the question by analysing the equation given**

1. **$CH_4 + Cl_2 \rightarrow A + HCl$**
2. **$CH_4 + 2O_2 \rightarrow B + C$+ heat**
3. **$nCH_2{=}CH_2 \rightarrow D$**

**a) What are A, B, C and D**

**b)Name the product D formed during the third reaction**

**c)To which type of reaction does the first equation belong.?**

**Hint.**
**a) A – $CH_3Cl$**

**B – $CO_2$**

**C - $H_2O$**

**D –$[CH_2– CH_2]_n$-**

**b. polythene**

**c. Substitution reaction**

***Marks :(4)***

Hide Answer

**Qn No. 3** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Ethanol and Ester**

**A. $CH_3$–COOH**

**B. $CH_3–CH_2–OH$**

**C. Petrol**

**Answer the questions related with the given compounds**

**a) Choose the substances which can be used to make an ester**

**b) Which of the above substances are used to make power alcohol?**

**Hint.**
**a)$CH_3$-COOH, $CH_3$-$CH_2OH$**

**b)$CH_3$-$CH_2OH$, Petrol**

***Marks :(2)***

Hide Answer

**Qn No. 4** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Choose the suitable compounds from those given in brackets to make it undergo the following reaction**

**$CH_4$, $C_2H_4$, $C_8H_{18}$ , $CH_3Cl$**

1. **Thermal cracking**
2. **Polymerisation**

**Hint.**
1. **$C_8H_{18}$**
2. **$C_2$ $H_4$**

***Marks :(2)***

Hide Answer

**Qn No. 5** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Why are hydrocarbons used as fuel ?**

**Hint.**
**During the combustion of hydrocarbons large amount of heat energy is released /Burning of hydrocarbon is highly exothermic**

***Marks :(1)***

Hide Answer

**Qn No. 6** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**

**Uses of some organic compounds are given below.Choose the appropriate compound from the bracket according to each use.**

**(Teflon , Ester, Ethanoic acid, ethanol, power alcohol)**

1. **Used as a solvent and in production of different organic compounds**
2. **Used in the production of artificial perfumes**
3. **Used as fuel in automobiles**
4. **Used in making  non-stick cooking vessels**

**Hint.**

1. **ethanol,**
2. **Ester,**
3. **power alcohol**
4. **Teflon**

***Marks :(4)***

Hide Answer

**Qn No. 7** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**

**a) What is power alcohol?**

**b) What is its use ?**

**Hint.**

**a)A mixture of absolute alcohol and petrol**

**b) It is used as fuel in automobiles**

***Marks :(2)***

Hide Answer

**Qn No. 8** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**

$$CH_3 - OH + CO \xrightarrow{\text{Catalyst}} A$$

$$A + CH_3\text{-}CH_2OH \longrightarrow B + H_2O$$

1. **Write the structures of A and B**
2. **Name the catagory of compounds to which B belongs?**

**Hint.**

1. **A  CH3 COOH**

   **B  $CH_3\ COOCH_2 - CH_3$**

2. **ester**

*Marks :(3)*

Hide Answer

**Qn No. 9** *Chapter Name:Reactions of Organic Compounds*

**Qn.**

$C_{12}H_{22}O_{11} + H_2O \xrightarrow{A} C_6H_{12}O_6 + C_6H_{12}O_6$

$C_6H_{12}O_6 \xrightarrow{Zymase} B + 2CO_2$

1. **what are A and B ?**
2. **How is rectified spirit produced from the mixture ?**

**Hint.**

1. **A – Invertase . B – $C_2H_5$-OH**
2. **Fractional distillation**

*Marks :(3)*

Hide Answer

**Qn No. 10** *Chapter Name:Reactions of Organic Compounds*

**Qn.**

**Ethanol is produced by the fermentation of diluted molasses. What is meant by molasses?**

**Hint.**

**Molasses is the concentrated solution of sugar left behind after separation of sugar crystals during the manufature of sugar**

*Marks :(1)*

Hide Answer

**Qn No. 11** *Chapter Name:Reactions of Organic Compounds*

**Qn.**

**$C_3H_8 \rightarrow CH_4 +$ A**

1. **Give the molecular formula of A**
2. **To which catagory does the compound A belong?**

**(Alkane , Alkene ,Alkyne )**

**Hint.**

1. **$C_2H_4$**
2. **Alkene**

*Marks :(2)*

Hide Answer

**Qn No. 12** *Chapter Name:Reactions of Organic Compounds*

**Qn.**

1. **What are the products formed by the complete burning of butane in air ?**
2. **Name this reaction.**

**Hint.**

1. **$CO_2$ , $H_2O$ (carbon dioxide, water)**
2. **Combustion.**

***Marks :(2)***

Hide Answer

**Qn No. 13** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Which among the following can undergo addition reaction?**

**($C_3H_8$ , $C_2H_4$ , $CH_4$ , $C_4H_{10}$ )**

**Hint.**
**$C_2$ $H_4$**

***Marks :(1)***

Hide Answer

**Qn No. 14** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Match suitably**

| | Reactants | Products | Name of the reaction |
|---|---|---|---|
| 1. | $CH_3–CH_3 + Cl_2$ | $CH_2=CH_2 + Cl_2$ | Addition reaction |
| 2. | $2CH_3–CH_3 + 7O_2$ | $CH_3–CH_3$ | Substitution reaction |
| 3. | $CH_2=CH_2 + H_2$ | $4CO_2 + 6H_2O$ | Thermal cracking |
| 4. | $CH_3–CH_2–CH_3$ | $CH_3–CH_2–Cl + HCl$ | Combustion |

**Hint.**

| Reactants | Products | Name of the reaction |
|---|---|---|

| | | |
|---|---|---|
| 1. $CH_3–CH_3 + Cl_2$ | $CH_3-CH_2Cl + HCl$ | Substitution reaction |
| 2. $2CH_3–CH_3 + 7O_2$ | 4CO2 + 6H2O | Combustion |
| 3. $CH_2=CH_2 + H_2$ | $CH_3–CH_3$ | Addition reaction |
| 4. $CH_3–CH_2–CH_3$ | $CH_2=CH_2 + CH_4$ | Thermal cracking |

***Marks :(4)***

Hide Answer

**Qn No. 15** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Give the products formed by the following reactions**

1. $CH_2=CH_2 + HCl \rightarrow$ -------
2. $CH\equiv CH + 2H_2 \rightarrow$ ---------

**Hint.**
**a) $CH_3-CH_2Cl$**

**b) $CH_3-CH_3$**

***Marks :(2)***

Hide Answer

**Qn No. 16** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**An organic reaction is given**

**$CH_2=CH_2 + A \rightarrow CH_3-CH_2Cl$**

1. **What is A?**
2. **What is the name for this type of reaction?**

**Hint.**
1. **HCl**
2. **Addition reaction**

***Marks :(2)***

Hide Answer

**Qn No. 17** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**An organic reaction is given.**

**A + $Cl_2$ → $CH_3Cl$ + HCl**

1. **What is the compound A ?**
2. **By which name is this reaction known?**

**Hint.**

1. **$CH_4$**
2. **Substitution reaction**

***Marks :(2)***

Hide Answer

**Qn No. 18** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**An incomplete equation showing a polymerisation reaction is given**

**n$CH_2$=CHCl → ----------**

1. **Draw the structrue of the product**
2. **Write any one use of the product**

**Hint.**

1. **PVC (structure).**
2. **It is used for the production of pipes(or any other use)**

***Marks :(2)***

Hide Answer

**Qn No. 19** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**A polymerisation reaction is given**

**n CF2 = CF2 → -- [--$CF_2$- $CF_2$ --]-- $_n$**

**a)Name the monomer .**

**b)What is the name of the polymer?**

**c)Give any one use of the polymer**

**Hint.**
**a)Tetrafluoroethene**

**b)Teflon/ PTFE**

**c) It is used for coating on inner surface of non- stick cookware(Any other use)**

***Marks :(3)***

Hide Answer

**Qn No. 20** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Examine the equation given**

**$CH_2$=CH–$CH_3$ + $H_2$ → $CH_3$–$CH_2$–$CH_3$**

**a) Choose the saturated hydrocarbon and unsaturated hydrocarbon in the above equation**

**b)By which name is this type of reactions are known?**

**Hint.**
**a) Unsaturated hydrocarbon $CH_2$=CH–$CH_3$**

**Saturated hydrocarbon $CH_3$–$CH_2$–$CH_3$**

**b) Addition reaction**

***Marks :(2)***

Hide Answer

**Qn No. 21** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**See the equation given**

**$CH_3$–COOH + $CH_3$–OH → A + $H_2O$**

**a) Write the formula of A and complete the equation.**

**b)To which catagory of compounds does A belong ?**

**Hint.**

**a) $CH_3$-COO-$CH_3$**

**b) Esters**

***Marks :(2)***

Hide Answer

**Qn No. 22** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**a)How is ethanol converted to denatured spirit ?**

**b) Why is it necessary? Explain**

**Hint.**
**a) By adding poisonous substance like methanol**

**b) For preventing the use of industrial alcohol as beverage .**

***Marks :(2)***

Hide Answer

**Qn No. 23** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Name the polymer formed by the combination of vinylchloride molecules**

**Hint.**
**Poly vinylchloride/PvC**

***Marks :(1)***

Hide Answer

**Qn No. 24** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Structural formula of some compounds are given**

1. $CH_3–CH_2–COO–CH_3$
2. $CH_3–CH_2–COOH$
3. $CH_3–CH_2–CO-CH_3$
4. $CH_3–OH$

**a)Which of the above compunds represent an ester ?**

**b)Name the compounds needed to prepare this ester**

**c)Write the equation of the above reaction.**

**d)Write one use of ester.**

**Hint.**
**a)$CH_3–CH_2–COO–CH_3$**

**b)Methanol and Propanoic acid or ($CH_3–OH$, $CH_3–CH_2–COOH$ )**

**c)$CH_3–CH_2–COOH + CH_3–OH \rightarrow CH_3-CH_2-COO-CH_3 + H_2O$**

**d) To make sweet smell of flowers and fruits**

***Marks :(3)***

Hide Answer

**Qn No. 25** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Some equations are given**

**$CH_2 = CH_2 + A \rightarrow CH_3 – CH_3$**

**$CH_3 – CH_3 + Cl_2 \rightarrow B + HCl$**

1. **Fiind out A and B**
2. **Write the name of the second reaction**

**Hint.**
1. **A - $H_2$ B - $CH_3–CH_2-Cl$**

**2. Substitution reaction**

***Marks :(3)***

Hide Answer

**Qn No. 26** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**PVC is a polymer used for the preparation of pipes. What is the name of its monomer?**

**Hint.**
**Vinyl chloride / $CH_2$ = CHCl**

***Marks :(1)***

Hide Answer

**Qn No. 27** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Choose the two products formed by the thermal cracking of $CH_3–CH_2–CH_3$ from the box given below and write them.**

| | |
|---|---|
| $CH_4$ | $CH_3–CH_2–CH=CH_2$ |
| $CH_2=CH_2$ | $CH_3–CH_2-CH_3$ |

**Hint.**
**$CH_4$ ,$CH_2=CH_2$**

***Marks :(2)***

Hide Answer

**Qn No. 28** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Choose Grape spirit and Wood spirit from the following**

**($CH_3$-$CH_2$-OH, $CH_3$-COOH, $CH_3$-OH, )**

**Hint.**
**Grape spirit - $CH_3$-$CH_2$-OH**

**Wood spirit - $CH_3$-OH**

***Marks :(2)***

Hide Answer

**Qn No. 29** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Formula of a compound is $CH_3$–OH**

1. **Write the IUPAC name of the compound? 1**
2. **Write two uses of this compound**

**Hint.**

1. **Methanol**
2. **Manufacture of many compounds such as formalin,antifreeze,denaturant e.t.c (Any two)**

***Marks :(3)***

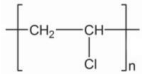
Hide Answer

**Qn No. 30** *Chapter Name:Reactions of Organic Compounds*

**Qn.**

1. **Complete the following equation**
   **$nCH_2$=CHCl → ------**
2. **Write the name of the reaction**

**Hint.**
**a)**



**b) Polymerisation**

***Marks :(2)***

Hide Answer

**Qn No. 31** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**Some compounds are given**

**A. $CH_2 = CH – CH_2 – CH_3$**

**B. $CH_3 – CH_2 – CH_3$**

**C. $CH_3 – CH = CH_2$**

**D. $CH_4$**

**E. $CH_3 – CH_2 – CH_2 \_ CH_3$**

1. **Which of these compounds can form polymer?**
2. **What are the products obtained by thermal cracking of B?**

**Hint.**

1. $CH_2=CH–CH_2-CH_3$, $CH_3-CH=CH_2$
2. $CH_2=CH_2$, $CH_4$

***Marks :(4)***

Hide Answer

**Qn No. 32** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**a) How is ethanoic acid prepared industrially?**

**b)Write any two uses of ethanoic acid.**

**Hint.**
**a) Ethanoic acid can be manufactured by reacting methanol with carbon monoxide in the presence of catalyst**

$CH_3-OH + CO \rightarrow CH_3-COOH$

**b) In rayon,rubber and silk industries,for manufacture of vinegar.**

***Marks :(3)***

Hide Answer

**Qn No. 33** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Ethanol is prepared from sugar solution by adding yeast.**

**a) What is the name of the process by which ethanol is produced ?**

**b) Which enzymes present in yeast are used in this process?**

**Hint.**

1. **Fermentation**
2. **Invertase, Zymase**

***Marks :(3)***

Hide Answer

**Qn No. 34** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Explain the following**

1. **Wash**
2. **Rectified spirit**
3. **Absolute alcohol**

**Hint.**
**a) 8-10% ethanol is known as wash**

**b)Wash is subjected to fractional distillation to get 95.6% ethanol , known as**

**rectified spirit**

**c) Ethanol of purity above 99% is known as absolute alcohol**

***Marks :(3)***

Hide Answer

**Qn No. 35** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Write any two uses of ethanol**

**Hint.**

1. **As preservative**
2. **As fuel (any two uses)**

***Marks :(2)***

Hide Answer

**Qn No. 36** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Match the following**

| A | | B | |
|---|---|---|---|
| 1. | $CH_2 = CH_2 + H_2 \rightarrow CH_3 \_ CH_3$ | 1. | Polymerisation |
| 2. | $CH_3 - CH_2 - CH_3 \rightarrow CH_2 = CH_2 + CH_4$ | 2. | Substitution |
| 3. | $CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$ | 3. | Additon reaction |
| 4. | $n\ CH_2 = CH_2 \rightarrow [CH_2 - CH_2]_n$ | 4. | Thermal cracking |

**Hint.**

1. **Addition reaction**
2. **Thermal cracking**
3. **Substitution**
4. **Polymerisation**

***Marks :(4)***

Hide Answer

**Qn No. 37** *Chapter Name:Reactions of Organic Compounds*

**Qn.**

$$CH_4 + Cl_2 \xrightarrow{\text{Sunlight}} A + HCl$$

**a. What is the name of the compound A?**

**b. To which type does this reaction belong?**

**(Addition reaction, Substitution reaction, Combustion, Polymerisation) (1)**

**Hint.**
**a. $CH_3Cl$**

**b. Substitution reaction**

***Marks :(2)***

Hide Answer

**Qn No. 38** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**$CH_3$ -CH = $CH_2$ + $Cl_2$ → A**

**a which is the reactant hydrocarbon?**

**b. Write the name or structure of the product A**

**c. Write the name of the reaction**

**Hint.**
**a. $CH_3$ – CH = $CH_2$ / Propene**

**b. $CH_3$ – CHCl– $CH_2Cl$ / 1,2-dichloro propane.**

**c. Addition reaction**

***Marks :(3)***

Hide Answer

**Qn No. 39** *Chapter Name:Reactions of Organic Compounds*

**Qn.**
**A CH ≡ CH + $H_2$ →X**

**B X + $H_2$ →Y**

**C Y + $Cl_2$ →Z + HCl**

**a. Write the molecular formula of the compounds X, Y and Z**

**b. By which name the reaction B is known?**

**Hint.**
**a) X. $CH_2 = CH_2$**

**Y. $CH_3 – CH_3$**

**Z. $CH_3 – CH_2Cl$**

**b) Addition reaction**

***Marks :(3)***

Hide Answer

**Qn No. 40** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**Different types of reactions are given in brackets**

**( Addition reaction, Polymerisation, Substitution, Combustion )**

**a. $CH_4 + 2O_2 \rightarrow CO_2 + 2\ H_2O$**

**b. $CH_3 – CH_3 + Cl_2 \rightarrow CH_3 – CH_2 – Cl + HCl$**

**c. $n\ CH_2 = CH_2 \rightarrow -[-CH_2-CH_2-]-_n$**

**d. $CH_2 = CH_2 + H_2 \rightarrow CH_3 – CH_3$**

**Find the type of reaction to which each of the above ones belong and write them.**

**Hint.**
**a. Combustion**

**b. Substitution**

**c. Polymerisation**

**d. Addition reaction**

***Marks :(4)***

Hide Answer

**Qn No. 41** ***Chapter Name:Reactions of Organic Compounds***

**Qn.**
**$CH_2 = CH_2 + HCl \rightarrow X$**

**a. Write the chemical formula of the product X formed during the reaction**

**b. Write the IUPAC name of the product**

**Hint.**
**a.$CH_3$-$CH_2Cl$**

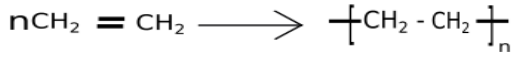
**b. Chloroethane**

***Marks :(2)***

Hide Answer

**Qn No. 42** *Chapter Name:Reactions of Organic Compounds*

**Qn.**



**a. Which is the monomer of this reaction?**

**b. Write the name of the polymer.**

**c. Which type of chemical reaction is this?**

**Hint.**

**a. Ethene/$CH_2$ =$CH_2$**

**b. Polythene**

**c. Polymerisation**

***Marks :(3)***

Hide Answer