DPP
DAILY PRACTICE PROBLEMS

CLASS : XIIth
DATE :

SOLUTIONS

SUBJECT : CHEMISTRY
DPP NO. : 2

Topic :-HYDROCARBONS

1 **(b)**

$CH \equiv CH + N_2 \rightarrow 2HCN$

2 **(a)**

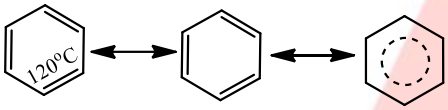
The reaction is as follows

$CH_2{=}CH_2 \xrightarrow{HBr} \underset{(X)}{CH_3{-}CH_2Br} \xrightarrow{AgCN} CH_3CH_2NC \xrightarrow[\text{reduction}]{H_2/Ni} \underset{(Z)}{CH_3CH_2NHCH_3}$

N-methyl ethanamine

3 **(b)**

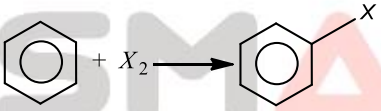
The structure of benzene is



$$\text{Bond order} = \frac{\text{number of bonds}}{\text{number of resonating structures}}$$

$$= \frac{4}{3} = 1.33$$

Since, the bond order is in between single and double bond, thus, it contains delocalised π-bonds. Hence, it is not possible to obtain number of single and double bonds in benzene.



(mono substituted product)

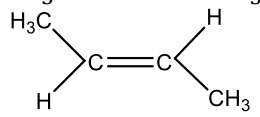
4 **(d)**

$-NO_2$ group withdraw electron from the ring shows $-M$ effect makes ring electron deficient, thus deactivates ring for electrophilic substitution.

5 **(b)**

Reaction of a non-terminal alkyne with a solution of an alkali metal (usually Na or Li or K) in liquid ammonia give a *trans*alkene.

$CH_3 - C \equiv C - CH_3 + 2[H] \xrightarrow{Li/liq.NH_3}$



6 **(d)**

B.p. increases with increase in mol. Wt.

7 **(b)**

1. Benzene undergoes electrophilic substitution in presence of $AlCl_3$ or $FeCl_3$ or $ZnCl_2$.

2. Benzene does not undergo addition reactions like alkene.

$\therefore C_6H_6 + HOCl \xrightarrow{H^+}$ no product and (b) is correct answer.

8 **(d)**

C − H bond energy is greatest in ethyne due to the presence of triple bond.

9 **(b)**

$CH_3—CH = CH—CH_3$ is planer molecule due to $sp^2 - sp^2$-hybridised carbon atoms.

10 **(a)**

TEL increases the octane no. of gasoline.

11 **(d)**

The refining of petroleum is distillation process.

12 **(b)**

It is how Zn-Cu couple is used.

13 **(b)**

$CH_3—C \equiv C—CH_3$ is linear and symmetrical and thus, dipole moment is zero.

15 **(a)**

$RCOONa \longrightarrow R—R + 2CO_2 + 2NaOH + H_2$

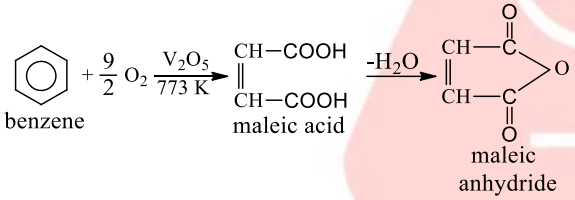
17 **(b)**

Only terminal alkynes give precipitate with ammoniacal silver nitrate solution.

Among the given, $CH_3 - C \equiv CH - CH_3$ is not a terminal alkyne. Thus, it does not give precipitate with ammoniacal $AgNO_3$.

19 **(c)**

Benzene vapours mixed with air when passed over V_2O_5 catalyst at 775 K gives maleic anhydride



20 **(a)**

$2CH_3CH_2CH_2COONa \rightarrow \overbrace{CH_3CH_2CH_2CH_2CH_2CH_3 + 2CO_2}^{\text{Anode}} \overbrace{+2NaOH + H_2}^{\text{Cathode}}$

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	B	A	B	D	B	D	B	D	B	A
Q.	11	12	13	14	15	16	17	18	19	20
A.	D	B	B	A	A	B	B	C	C	A