

Topic :-ORGANIC CHEMISTRY - SOME BASIC PRINCIPLES AND TECHNIQUES

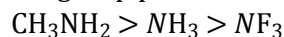
1 (c)

Glycerol can be separated from spent lye in soap industry by the distillation under reduced pressure because it decomposes near its boiling point

3 (b)

In gas phase tertiary amines are more basic than secondary amines which are more basic than ammonia

–I group present on central atom decreases electron density, hence decreases basicity



4 (a)

Atom	At mass (a)	% (b)	$\frac{b}{a}$	Ratio
C	12	49.3	$\frac{49.3}{12} = 4.10$	2
H	1	6.84	$\frac{6.84}{1} = 6.84$	3
O	16	43.86	$\frac{43.86}{16} = 2.74$	1

Hence, empirical formula = (C₂H₃O)

$$\begin{aligned} \text{Molecular mass} &= 2 \times \text{VD} = 2 \times 73 \\ &= 146 \end{aligned}$$

$$n = \frac{\text{molar mass}}{\text{empirical formula mass}} = \frac{146}{43} \approx 3$$

So, formula = (C₂H₃O)₃ ≈ C₆H₉O₃

5 (c)

Wöhler prepared urea from inorganic compounds and rejected the vital force theory that organic compounds can only be synthesised from living organisms.

6 (c)

Follow mechanism of addition of HCl and HI in presence of peroxide. One of the chain propagation step is endothermic in both cases.

7 (c)

All aromatic compounds are resonance hybrid.

8 (a)

It is the stability order for various conformers.

9 (c)

Glucose has aldehyde group and fructose keto group. The general formula for both is C₆H₁₂O₆.

11 (b)

Follow conformation.

12 (b)

In *o*-, *m*-, *p*- derivatives vectors are at 60° , 120° and 180° . Thus, *para* has zero dipole moment. Also *ortho* form has more dipole moment than *meta* form.

13 (c)

The staggered form has lower energy than eclipsed form because of repulsive interaction between the H-atoms attached to two carbon atoms are minimum due to maximum distance between them.

14 (c)

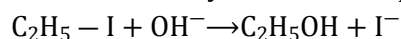
Victor Mayer's method is applicable only for the determination of molecular mass of volatile substance

16 (d)

Hexane is non-polar molecule.

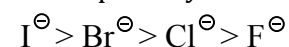
17 (c)

Nucleophilies may be neutral or negatively charged, whereas substrate undergoing nucleophilic substitution may be neutral or positively charged



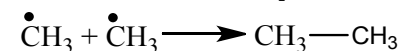
18 (a)

Nucleophilicity increases on going down in the group of the Periodic Table



19 (d)

Free radicals have unpaired electrons, but are neutrals and are reactive.



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ANSWER-KEY

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

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