DPP
DAILY PRACTICE PROBLEMS

CLASS : XIIth
DATE :

SOLUTIO

SUBJECT : CHEMISTRY
DPP NO. : 2

Topic :-POLYMERS

3 **(b)**

The ratio of weight average molecular weight and the number average molecular weight is called poly dispersity index.
(PDI).

$$PDI = \frac{\bar{M}_w}{\bar{M}_n}$$

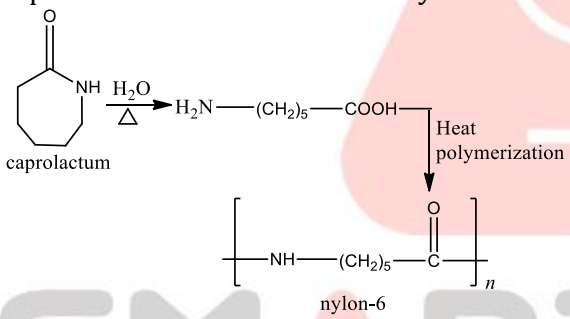
Where,
$\bar{M}_w$ =weight average molecular weight
$\bar{M}_n$ = number average molecular weight
PDI is unity for natural monodispersed polymer but for synthetic polymers it is always greater than unity.

5 **(a)**

Buna rubber is homopolymer of 1, 3-butadiene.

6 **(a)**

Caprolactum condenses to form nylon-6.



7 **(d)**

The plastics which do not soften very much on heating can be made soft and readily workable by the addition of certain organic substances called plasticisers, e.g., dialkyl phthalate.

8 **(a)**

A fact; H-bonding makes them highly crystalline and highly tensile material.

9 **(b)**

In natural rubber, methyl groups are arranged randomly. Thus, catalytic hydrogenation also results in a random molecule, ie, in an atactic product.

10 **(c)**

Nylon-66 is a polyamide fibre.

11 **(c)**

The commercial natural rubber is obtained from the tree *Heveabrasiliensis*. Natural rubber is found to be a polymer of *cis*-isoprene.

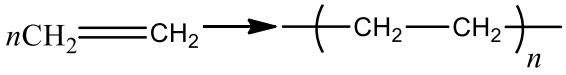
$$CH_2 = \underset{\displaystyle CH_3}{\underset{|}{C}}H = CH_2$$

Hence, it is a polymer of *cis*-isoprene.

12 **(b)**

Bakelite is a copolymer of HCHO and phenol.

83 **(a)**
The characteristic of rayon.
14 **(b)**
Terylene or dacron is a polyester of ethylene glycol and dimethyl terephthalate.
16 **(c)**
Cellulose diacetate(used in making threads) is a semi-synthetic polymer as it s obtained from natural polymer (*i. e.*, cellulose) by chemical modification.
17 **(d)**
Rest all are natural polymers.
18 **(c)**



polyethylene is obtained by the polymerization of ethylene.
19 **(b)**
Due to presence of chains of varying length in a polymer sample, their molecular mass is always expressed as an average.
20 **(c)**
PDI abbreviates as polydisperity index of polymer.

$$\text{PDI} = \frac{\bar{M}_w}{\bar{M}_n}$$

For natural polymers PDI=1, *i. e.*, $\bar{M}_w = \bar{M}_n$
For synthetic polymers PDI >1, *i. e.*, $\bar{M}_w > \bar{M}_n$

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