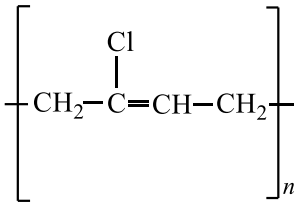
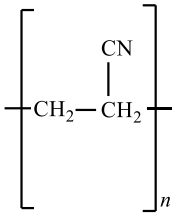
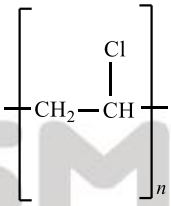
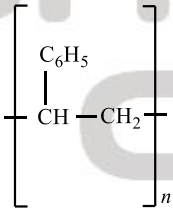
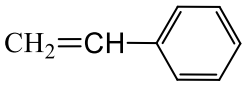
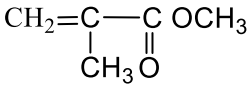
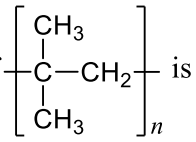
Date : **TEST ID: XIICH1501**
Marks : **CHEMISTRY**

POLYMERS

Single Correct Answer Type

1. A chain transfer agent is
   a) C_6H_5OH b) $NH(C_6H_5)_2$
   c) CCl_4 d) CH_3OH
2. Caprolactam is obtained from
   a) Cyclohexane b) Hexane
   c) Adipic acid d) Adipic acid and hexamethylene diamine
3. Caprolactam is used to prepare which of the following polymer?
   a) Nylon-6, 6 b) Malamine c) Nylon-6 d) PMMA
4. Which of the following represents neoprene polymer:
   a) 
   b) 
   c) 
   d) 
5. Among cellulose poly (vinyl chloride), nylon and natural rubber, the polymer in which the intermolecular force of attraction is weakest in
   a) Nylon b) Poly (vinyl chloride) c) Cellulose d) Natural rubber
6. A homopolymer is obtained by polymerization of:
   a) One type of monomer units
   b) Two types of monomer units
   c) Either of the above
   d) None of the above
7. For natural polymers PDI is generally
   a) 0 b) 1 c) 100 d) 1000
8. Which is fully fluorinated polymer?

a) Neoprene b) Teflon c) Thiokol d) PVC

9. Which is not true about polymers?
   a) Polymers have high viscosity
   b) Polymers scatter light
   c) Polymers do not carry any charge
   d) Polymers have low molecular weight
10. From the given statements, which one is not true?
   a) Teflon is a macromolecule
   b) Teflon is a polymer
   c) Polythene is a polymer
   d) Chlorophyll is a polymer
11. Head-to-tail addition takes place in chain-growth polymerization when monomer is
   a) 
   b) $CH_2 = CH - CH = CH_2$
   c) 
   d) $CH_2 = CH - C \equiv N$
12. Which pair of polymers have similar properties?
   a) Nylon, PVC b) PAN, PTFE c) PCTFE, PTFE d) Bakelite, alkyl resin
13. With increase in which of the following factors, tensile strength of a polymer increases?
   a) Crystallinity b) Melting point c) Molecular weight d) All of these
14. Monomer of  is
   a) 2- methylpropene b) Styrene c) Propylene d) Ethane
15. Acetate rayon is prepared from:
   a) Acetic acid b) Glycerol c) Starch d) Cellulose
16. Low density polythene is prepared by
   a) Free radical polymerization
   b) Cationic polymerization
   c) Anionic polymerization
   d) Ziegler-Natta polymerization
17. Which one among the following is a thermosetting plastic?
   a) PVC b) PVA c) Bakelite d) None of these
18. The condensation polymer among the following is
   a) Rubber b) Protein c) PVC d) Polythene
19. Natural rubber is a polymer of:
   a) *trans*-isoprene
   b) *cis*-isoprene
   c) *cis*-and *trans*-isoprene
   d) None of these
20. Which of the following is a natural polymer?
   a) Polythene b) polysaccharides c) Nylon d) Terylene
21. Polymer obtained by condensation polymerisation is:
   a) Polythene b) Teflon c) PVC d) Nylon-6, 6
22. Which of the following elements is present in Teflon?
   a) Fluorine b) Chlorine c) Bromine d) Iodine
23. Which of the following is a condensation polymer?
   a) Polystyrene
   b) Neoprene
   c) PAN
   d) Polyethylene terephthalate
24. Dacron is an example of
   a) Polyester b) Polyurethane c) Polyamide d) Polypropylene
25. A copolymer of isobutylene and isoprene is called:

a) Butyl rubber b) Buna-S c) Buna-N d) Thiokol

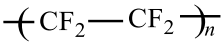
26. Which of the following is an example of condensation homopolymer?
a) Alkyd resin b) Bakelite c) Perlon d) Malmac

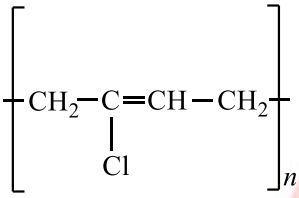
27. Which of the following is not a cellulose product?
a) Gun cotton b) Celluloid c) Rayon d) Dacron

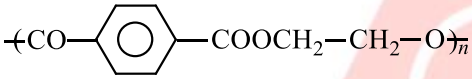
28. Which of the following is currently used as a true cord?
a) Polyethylene b) Polypropylene c) Bakelite d) Nylon-6

29. Structures of some common polymers are given. Which one is not correctly presented?

a) Nylon-6,6

b) Teflon 

c) Neoprene 

d) Terylene 

30. Which is the best monomer for getting chain growth polymer?
a) $CH_2 = CHCI$ b) $CH_2 = CHCN$ c) $CH_2 = CHC_6H_5$ d) $CH_2 = C.COOCH_3$

SMARTLEARN COACHING

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POLYMERS

ANSWER KEY

1)	c	2)	a	3)	c	4)	a
5)	d	6)	a	7)	b	8)	b
9)	d	10)	d	11)	a	12)	c
13)	d	14)	a	15)	d	16)	a
17)	c	18)	b	19)	b	20)	b
21)	d	22)	a	23)	d	24)	a
25)	a	26)	d	27)	d	28)	d
29)	c	30)	c				

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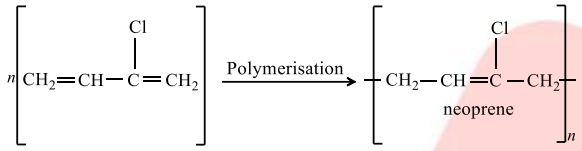
POLYMERS

HINTS AND SOLUTIONS

4 **(a)**
Neoprene is a polymer of chloroprene.



5 **(d)**
Nylon has amide linkage capable of forming intermolecular H-bonding as:

Due to H-bonding,nylon has strong intermolecular attraction. Cellulose is a polyhydroxy compound,also capable of forming strong intermolecular H-bonding. Polyvinyl chloride is a polar polymer due to carbon chlorine bond and it possessstrong dipole-dipole attraction. Natural rubber is poly-isoprene,a hydrocarbon,possess weak van der Waals' attraction.

6 **(a)**
This is definition of homopolymer.

9 **(d)**
Polymers are large molecules with high molecular weight, and a repeating unit. They do not carry any charge. They have high viscosity and can scatter light.

10 **(d)**
Chlorophyll is metallic complex of porphyrin ring with magnesium atom.

11 **(a)**
Vinyl derivatives containing electron releasing group readily undergo head to tail addition polymerization.

12 **(c)**
PCTFE and PTFE both have some carbon backbone.

13 **(d)**
With increase in molecular weight of a polymer, other properties such as tensile strength, crystallinity, melting point etc increase

15 **(d)**
Acetate rayon (cellulose acetate) is semisynthetic polymer obtained by using natural polymer cellulose by producing modifications by artificial means.

16 **(a)**
Ethene on free radical polymerisation gives low density polythene

17 **(c)**
Thermosets plastics are highly cross-linked materials with infusible mass, often called resins, *e*,g., vulcanised rubber, bakelite, etc.

18 **(b)**
Proteins are the condensation polymers of α – amino acids. Proteins contain peptide.

19 **(b)**
Natural rubber is a homopolymer of *cis*-isoprene, i.e., 2-methyl-1,3-butadiene.

20 **(b)**
Poysaccharides have natural origin.

21 **(d)**
Follow text.

23 **(d)**
Rest all are addition polymers.

24 **(a)**
Dacron or teryleneis a condensation copolymer of ethylene glycol and terephthalic acid. It has — COO linkage.
Hence, it is a polyester.
$n\mathrm{HO} - \mathrm{CH_2} - \mathrm{CH_2} - \mathrm{OH} +$


25 **(a)**
Butyl rubber is a copolymer of isobutylene and isoprene.

26 **(d)**
Perlon or nylon-6 is obtained by the condensation of only one type monomer units (caprolactam), so it is a homopolymer.

27 **(d)**
Dacron or terylene is synthetic polymer of ethylene glycol and terephthalic acid.

28 **(d)**
Nylon-6 is used in the manufacture of type cord. It is polymer of caprolactum. It contains amide linkage.

29 **(c)**
Vulcanisation is a process of treating natural rubber under heat and Sulphur to develop Sulphur to develop Sulphur cross-links and provide strength and resists wear and tear due to friction.

30 **(c)**
Styrene, because of the formation of more stable carbocation, readily undergoes chain growth polymerisation.

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