

# Exercise # 1

- Q.1** An example of a synthetic polymer is :  
[1] Nucleic acid [2] Starch [3] Bakelite [4] Protein
- Q.2** All of the following are the examples of thermoplastics, except :  
[1] Phenol-formaldehyde resin [2] Polythene  
[3] Polyvinyl chloride [4] Polystyrene
- Q.3** Orlon is formed by polymerisation of :  
[1] Vinyl chloride [2] Tetrafluoroethylene [3] Acrylonitrile [4] Styrene
- Q.4** All of the following are the products of condensation polymerisation, except :  
[1] Bakelite [2] Urea-formaldehyde resin  
[3] Nylon-6 [4] Nylon-66
- Q.5** Nylon-66 belongs to the following polymer family :  
[1] Polystyrene [2] Polyolefin [3] Polyester [4] Polyamide
- Q.6** Which of the following is not a copolymer ?  
[1] Buna-S [2] Cellulose [3] Protein [4] nucleic acid
- Q.7** Which of the following is not an example of a condensation polymer ?  
[1] Nylon-66 [2] Teflon [3] Terylene [4] Bakelite
- Q.8** An example of aromatic polymer is :  
[1] Nylon-66 [2] Teflon [3] polystyrene [4] neoprene
- Q.9** Caprolactam is a monomer of the polymer, named :  
[1] terylene [2] nylon-66 [3] nylon-6 [4] bakelite
- Q.10** The intermolecular forces in linear polymeric chains of nylon-66 are :  
[1] hydrogen bonds [2] covalent bonds [3] dative bonds [4] ionic bonds
- Q.11** During the formation of a polymer, the simpler chemical units :  
[1] become globular [2] join up in a circular fashion  
[3] join up to form chains [4] undergo addition
- Q.12** Polypropylene is mainly used in the preparation of :  
[1] tyres [2] lenses [3] adhesives [4] moulded articles
- Q.13** Bakelite is not used in the preparation of :  
[1] electrical appliances [2] combs and fountain pens  
[3] gramophone records [4] paints and varnishes
- Q.14** All of the following are addition polymers, except :  
[1] polystyrene [2] polythene [3] nylon-66 [4] P.V.C.
- Q.15** Polystyrene belongs to the following class of polymers :  
[1] Thermosetting plastic [2] Thermoplastic polymer  
[3] Elastomer [4] Fibrous polymer.
- Q.16** All of the following molecules can be removed out in condensation polymerisation, except :  
[1]  $\text{NH}_3$  [2]  $\text{H}_2\text{O}$  [3]  $\text{C}_2\text{H}_5\text{OH}$  [4]  $\text{CH}_4$
- Q.17** The catalyst, which cannot be used in addition polymerisation, is :  
[1]  $\text{O}_2$  [2] Lindlar's catalyst [3]  $(\text{C}_6\text{H}_5\text{COO})_2$  [4]  $\text{R}_3\text{Al} + \text{TiCl}_4$
- Q.18** All of the following are biopolymers, except :  
[1] carbohydrate [2] RNA [3] DNA [4] perspex
- Q.19** All of the following are chain growth polymerisation reactions, except :  
[1] urea + formaldehyde  $\rightarrow$  bakelite [2] vinyl chloride  $\rightarrow$  P.V.C.  
[3] isoprene  $\rightarrow$  polyisoprene [4] propylene  $\rightarrow$  polypropylene

- Q.20** What does Na in Buna-S indicate ?  
 [1] Na is present in Buna-S [2] Na is a catalyst in the preparation of Buna-S  
 [3] Buna-S is a polymer of butadiene [4] Buna-S is a polymer of styrene
- Q.21** The non-stick layer of kitchenware contains :  
 [1] acrilan [2] teflon [3] dacron [4] nylon
- Q.22** All of the following are trade names of PMMA, except :  
 [1] leucite [2] perspex [3] plexiglass [4] glyptal
- Q.23** Alkyd resin is formed by polymerisation of :  
 [1] ethylene glycol and phthalic acid [2] glycerol and terephthalic acid  
 [3] ethylene glycol and isophthalic acid [4] glycerol and urea.
- Q.24** The compound that react with formaldehyde to form melmac is :  
 [1] nonaromatic heterocyclic [2] aromatic heterocyclic  
 [3] nonaromatic homocyclic [4] aromatic homocyclic.
- Q.25** Phenol and formaldehyde react in bakelite preparation with the intermediate formation of :  
 [1] benzyl alcohol [2] m-hydroxybenzyl alcohol  
 [3] o- and p-hydroxybenzyl alcohol [4] phenol-formaldehyde addition polymer
- Q.26** Which of the following is not a natural polymer ?  
 [1] leather [2] silk [3] nylon [4] wool
- Q.27** Which of the following is a natural polymer ?  
 [1] teflon [2] polyethylene [3] cellulose [4] polyvinyl chloride
- Q.28** The compound that can be used as a monomer is :  
 [1]  $C_6H_6$  [2]  $CH_3CH_2OH$  [3]  $CH_3CH_2Cl$  [4]  $C_3H_6$
- Q.29** Polymerisation of monomeric molecules of more than one type is called :  
 [1] homopolymerisation [2] chain growth polymerisation  
 [3] copolymerisation [4] addition polymerisation
- Q.30** Neoprene is a polymer of :  
 [1] isoprene [2] chloroprene [3] propylene [4] butadiene
- Q.31** Which of the following is a synthetic rubber ?  
 [1] Neoprene [2] Buna-S [3] Bakelite [4] 1 as well as 2
- Q.32** Terylene is formed by condensation polymerisation of ethylene glycol and :  
 [1] salicylic acid [2] benzoic acid [3] terephthalic acid [4] phthalic acid
- Q.33** Bakelite is formed from :  
 [1]  $C_6H_5OH + CHCl_3$  [2]  $C_6H_5OH + CH_2O$  [3]  $C_6H_5NH_2 + NH_2CONH_2$  [4]  $HCHO + NaOH$
- Q.34** Which of the following is an example of a thermoplastic ?  
 [1] P.V.C. [2] bakelite [3] perspex [4] P.V.A.
- Q.35** Dacron is a :  
 [1] Polyester [2] Polyamide [3] Both the above [4] None
- Q.36** Nylon is the copolymer of :  
 [1] Styrene + divinyl benzene [2] Hexamethylene tetra-amine + adipic acid  
 [3] Hexamethylenediamine + sebacic acid [4] Ethylene glycol + terephthalic acid
- Q.37** The process of formation of macromolecules by combination of few monomers with the elimination of small molecules is called :  
 [1] Condensation polymerisation [2] Homopolymerisation  
 [3] Addition polymerisation [4] Free radical polymerisation
- Q.38** The pair of synthetic rubber polymer is :  
 [1] Buna-S, Gutta-percha, buna-N [2] Buna-S, neoprene, bakelite  
 [3] Neoprene, buna-S, buna-N [4] Orlon, neoprene, gutta-percha

- Q.39** In fact orlon is :  
 [1] Nylon-66 [2] Terylene [3] Poly (ethyl acrylate) [4] Polyacrylonitrile
- Q.40** Which of the following is not an addition polymer :  
 [1] Bakelite [2] P.A.N. [3] P.V.C. [4] Teflon
- Q.41** Example of branched polymer is :  
 [1] P.V.C. [2] P.A.N. [3] L.D.P.E. [4] Polyester
- Q.42** The monomer of neoprene is the product of the following reaction :  
 [1] Acetylene + HCl [2] Vinylacetylene + HCl [3] Divinyl acetylene+HCl [4] Ethylene + HCl
- Q.43** Which of the following is not the addition homo polymer ?  
 [1] Teflon [2] Buna-S [3] P.V.C. [4] P.A.N.
- Q.44** Starch is the condensation polymer is :  
 [1]  $\alpha$ -Glucose [2]  $\beta$ -Glucose [3]  $\alpha$ -Fructose [4]  $\beta$ -Fructose
- Q.45** Which one is not a bio polymer ?  
 [1] Protein [2] Nucleic acid [3] Cellulose [4] Thiokol
- Q.46** Which is not the example of addition polymer ?  
 [1] Glyptal [2] Polypropylene [3] Polystyrene [4] Polyvinyl chloride
- Q.47** Buna-S is obtained when 1, 3-butadiene adds to :  
 [1] Acrolein [2] Neoprene [3] Vinylbenzene [4] Chloroprene
- Q.48** A polyamide is :  
 [1] Leather [2] Natural rubber [3] Nylon-66 [4] Wool
- Q.49** Amide containing polymer is :  
 [1] Polyethene [2] Polystyrene [3] Terylene [4] Nylon
- Q.50** Bakelite is made from phenol and formaldehyde. The initial reaction between them is the example of :  
 [1] Electrophilic aromatic substitution [2] Nucleophilic aromatic substitution  
 [3] Free radical reaction [4] Aldol reaction
- Q.51** Buna-S is a copolymer of :  
 [1] 75% Butadiene + 25% styrene [2] 25% Butadiene + 75% styrene  
 [3] 50% Butadiene + 50% styrene [4] None
- Q.52** Monomers used in the synthesis of Buna-S are :  
 [1] Conjugated diene + aromatic compound [2] Cumulative diene + aromatic compound  
 [3] Separated diene + aromatic compound [4] Alkadiyne + aromatic compound
- Q.53**  $\text{CH}_2=\text{CH}_2 \xrightarrow{\text{O}_2/\text{Ag}} \text{A} \xrightarrow{\text{H}^+/\text{H}_2\text{O}} \text{B}$  :  
 Using compound B, a group of the following polymers can be synthesized :  
 [1] Terylene, glyptal [2] Nylon-66, dacron [3] Dacron, nylon-6 [4] Thiokol, buna-S
- Q.54** Polymer containing more than one monomer is called :  
 [1] Co-polymer [2] Hetero polymer [3] Both the above [4] None
- Q.55** Which is a homopolymer :  
 [1] Isotactic poly (vinyl chloride) [2] Atactic polypropylene  
 [3] Syndiotactic polystyrene [4] All of these

### Answer Key

Qus.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	3	1	3	3	4	2	2	3	3	1	3	4	4	3	2	4	2	4	1	2
Qus.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	2	4	1	2	3	3	3	4	3	2	4	3	2	2	1	3	1	3	4	1
Qus.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55					
Ans.	3	2	2	1	4	1	3	3	4	1	1	1	1	3	4					

## Exercise # 2

- Q.1** The fibre obtained by the condensation of hexamethylene diamine and adipic acid is : **[MP PMT 1993]**  
 [1] Dacron [2] Nylon '66' [3] Rayon [4] Teflon
- Q.2** Natural rubber is basically a polymer of or the monomer of natural polymer rubber is : **[MP PMT 1993; 95, 99, 2000, 01, MP PET 1994, 95, 2001; BHU 1999, 2001; CBSE 1999; RPET 2000]**  
 [1] Neoprene [2] Isoprene [3] Chloroprene [4] Butadiene
- Q.3** Rayon yarns are obtained from : **[MP PET 2001]**  
 [1] Polymethylene [2] Polyesters [3] Cellulose [4] Styrene
- Q.4** Polymerisation in which two or more chemically different monomers take part is called : **[MP PMT 1991, 93]**  
 [1] Addition polymerisation [2] Copolymerisation  
 [3] Chain polymerisation [4] Homopolymerisation
- Q.5** Which one of the following can be used as monomer in apolymerisation reaction : **[MP PMT 1993]**  
 [1]  $\text{CH}_3\text{CH}_2\text{Cl}$  [2]  $\text{CH}_3\text{CH}_2\text{OH}$  [3]  $\text{C}_6\text{H}_6$  [4]  $\text{C}_3\text{H}_6$
- Q.6** Which of the following is teflon : **[MP PMET 2000, 03]**
- [1]  $\left[ \begin{array}{cc} \text{H} & \text{H} \\ | & | \\ -\text{C} & -\text{C}- \\ | & | \\ \text{H} & \text{H} \end{array} \right]_n$

[2]  $\left[ \begin{array}{cc} \text{H} & \text{CH}_3 \\ | & | \\ -\text{C} & -\text{C}- \\ | & | \\ \text{H} & \text{H} \end{array} \right]_n$

[3]  $\left[ \begin{array}{cc} \text{F} & \text{F} \\ | & | \\ -\text{C} & -\text{C}- \\ | & | \\ \text{F} & \text{F} \end{array} \right]_n$

[4]  $\left[ \begin{array}{cc} \text{H} & \text{F} \\ | & | \\ -\text{C} & -\text{C}- \\ | & | \\ \text{F} & \text{Cl} \end{array} \right]_n$
- Q.7** Polythene is a resin obtained by polymerisation of or The monomer unit in polythene is : **[CPMT 1983; MP PMT 2002]**  
 [1] Butadiene [2] Ethylene [3] Isoprene [4] Propylene
- Q.8** Terylene is : **[BHU 2000]**  
 [1] An addition polymer with a benzene ring in every repeating unit  
 [2] A condensation polymer with a benzene ring in every repeating unit  
 [3] An addition polymer with two carbon atoms in every repeating unit  
 [4] A condensation polymer with two nitrogen atoms in every repeating unit
- Q.9** Caprolactam is the monomer of : **[DCE 2000]**  
 [1] Nylon-6 [2] Glyptal [3] P.T.F.E. [4] Melamine
- Q.10** Isoprene is a monomer of : **[BHU 1983; NCERT 1980, 84; CBSE 1991]**  
 [1] Starch [2] Synthetic rubber [3] PVC [4] Natural rubber
- Q.11**  $\text{CH}_2=\text{CH}_2$  is a : **[MP PMT 1986; CBSE 1991]**  
 [1] Monomer [2] Polymer [3] Isomer [4] Equimer
- Q.12** Teflon is a polymer of the monomer or Teflon is obtained by the polymerisation of : **[CPMT 1986; 91]**  
 [1] Monofluoroethene [2] Difluoroethene [3] Trifluoroethene [4] Tetrafluoroethene
- Q.13** Which of the following fibres are made of polyamides : **[CPMT 1982; UPSEAT 2001, 02]**  
 [1] Dacron [2] Orlon [3] Nylon [4] Rayon
- Q.14** Bakelite is a product of the reaction between : **[CBSE 1992, 95; MP PET 2003]**  
 [1] Formaldehyde and NaOH [2] Aniline and urea  
 [3] Phenol and methanal [4] Phenol and chloroform
- Q.15** Which one of the following polymers will not catch fire : **[MP PET 1994]**  
 [1]  $(-\text{CF}_2-\text{CF}_2-)_n$  [2]  $(-\text{CH}_2-\text{CH}_2-)_n$  [3]  $\left( \begin{array}{c} -\text{CH}-\text{CH}- \\ | \quad | \\ \text{Cl} \quad \text{Cl} \end{array} \right)_n$  [4]  $\left( \begin{array}{c} -\text{CH}_2-\text{CH}- \\ | \\ \text{Cl} \end{array} \right)_n$
- Q.16** Natural rubber is a : **[MP PMT 1994]**  
 [1] Polyester [2] Polyamide [3] Polyisoprene [4] Polysaccharide

- Q.17** Which is not a polymer : **[CPMT 1994]**  
 [1] Ice [2] Starch [3] Protein [4] Cellulose
- Q.18** Acrylonitrile forms : **[BHU 1995]**  
 [1] Terylene [2] Orlon [3] PVC [4] Bakelite
- Q.19** Which of the following is an example of condensation polymers : **[MP PMT 1995; BHU 2000]**  
 [1] Polythene [2] PVC [3] Orlon [4] Terylene
- Q.20** Nylon is : **[MP PMT 2001; AFMC 2003]**  
 [1] Polyester [2] Polyamide [3] Polycellulose [4] Polypropylene
- Q.21** Chloroprene is used in making : **[MP PET 1997]**  
 [1] Synthetic rubber [2] Plastic [3] Petrol [4] All of the above
- Q.22** Methanal and phenol react in the presence of base to give : **[MP PET/PMT 1998]**  
 [1] Bakelite [2] Polyethylene [3] Dcaron [4] Nylon-66
- Q.23** Which of the following contains isoprene units : **[MP PET/PMT 1998]**  
 [1] Natural rubber [2] Nylon-66 [3] Polyethylene [4] Dacron
- Q.24** Which of the following is not a synthetic polymer : **[MP PET 1999]**  
 [1] Polyethylene [2] PVC [3] Nylon [4] Cellophane
- Q.25** What is not true about polymers : **[MP PET 1999]**  
 [1] Polymers do not carry any charge [2] Polymers have high viscosity  
 [3] Polymers scatter light [4] Polymers have low molecular weight
- Q.26** Which of the following is used in the synthesis of nylon-66 : **[MP PMT 1999; MP PET 2000]**  
 [1] Benzoic acid [2] Adipic acid [3] Phthalic acid [4] Salicylic acid
- Q.27** Terylene is a condensation polymer of ethylene glycol and : **[RPET 2000]**  
 [1] Benzoic acid [2] Phthalic acid [3] Salicylic acid [4] Terephthalic acid
- Q.28** Which one is a polymer compound : **[CPMT 1997; Bihar MEE 1997]**  
 [1] SO<sub>2</sub> [2] CO<sub>2</sub> [3] CH<sub>4</sub> [4] PVC
- Q.29** Which one of the following is used to make 'non-stick' cookware : **[CBSE 1997; AIIMS 1998]**  
 [1] PVC [2] Polystyrene  
 [3] Polyethylene terephthalate [4] Polytetrafluoroethylene
- Q.30** The polymer which has amide linkage is : **[AFMC 1998]**  
 [1] Nylon-66 [2] Terylene [3] Teflon [4] Bakelite
- Q.31** Example of condensation polymer is : **[RPMT 1999]**  
 [1] Formaldehyde → meta-formaldehyde [2] Acetaldehyde → para-aldehyde  
 [3] Acetone → mesityl oxide [4] Ethene → polyethene
- Q.32** Nylon-66 is a : **[RET 1999]**  
 [1] Natural polymer [2] Condensation polymer  
 [3] Addition polymer [4] Substitution polymer
- Q.33** Which polymer is formed by chloroethene : **[RPET 1999]**  
 [1] Teflon [2] Polyethene [3] PVC [4] Nylon
- Q.34** Polyester fibre is : **[RPET 1999]**  
 [1] Rayon [2] Terylene [3] Nylon-6 [4] Nylon-66
- Q.35** Ebonite is : **[CBSE 2000]**  
 [1] Poloprene [2] Natural rubber [3] Synthetic rubber [4] Highly vulcanized rubber
- Q.36** In elastomer, intermolecular forces are : **[AIIMS 2000]**  
 [1] Nil [2] Weak [3] Strong [4] Very strong

- Q..37** Which of the following polymer is an example of fibre : **[AIIMS 2000]**  
 [1] Silk [2] Dacron [3] Nylon-66 [4] All of these
- Q.38** Characteristic property of teflon is : **[RPET 2000]**  
 [1] 2000 poise viscosity [2] High surface tension  
 [3] Non-inflammable and resistant to heat [4] Highly reactive
- Q.39** Which of the following is not a polymer : **[MP PET 2001]**  
 [1] Silk [2] DNA [3] DDT [4] Starch
- Q.40** Which of the following statement is correct regarding the drawbacks of raw rubber : **[AIIMS 2001]**  
 [1] It is plastic in nature [2] It has little durability  
 [3] It has large water-absorption capacity [4] All of these
- Q.41** Phenol is used in manufacture of : **[RPMT 2002]**  
 [1] Nylon [2] Polystyrene [3] Bakelite [4] PVC
- Q.42** Nylone 66 is : **[RPMT 2002]**  
 [1] Polyamide [2] Polyester [3] Polystyrene [4] Polyvinyl
- Q.43** Isoprene is a valuable substance for making : **[MP PET 2002]**  
 [1] Propene [2] Liquid fuel [3] Synthetic rubber [4] Petrol
- Q.44** Cellulose is a polymer of : **[CBSE 2002]**  
 [1] Fructose [2] Ribose [3] Glucose [4] Sucrose
- Q.45** Nylon-6 is made from : **[MP PMT 2002; BHU 2002]**  
 [1] Butadiene [2] Chloroprene [3] Adipic acid [4] Caprolactum
- Q.46** Which one of the following monomers gives the polymer neoprene on polymerization : **[CBSE 2003]**  
 [1]  $\text{CF}_2=\text{CF}_2$  [2]  $\text{CH}_2-\text{CHCl}$  [3]  $\text{CCl}_2=\text{CCl}_2$  [4]  $\text{CH}_2=\overset{\text{Cl}}{\text{C}}-\text{OH}-\text{CH}_2$
- Q.47** Nylon threads are made of : **[AIEEE 2003]**  
 [1] Polyvinyl polymer [2] Polyester polymer [3] Polyamide polymer [4] Polyethylene polymer
- Q.48** Complete hydrolysis of cellulose gives : **[AIEEE 2003]**  
 [1] D-fructose [2] D-ribose [3] D-glucose [4] L-glucose
- Q.49** PVC is polymer of : **[CPMT 2003]**  
 [1]  $\text{CH}_2=\text{CH}_2$  [2]  $\text{CH}_2=\text{CH}-\text{Cl}$  [3]  $\text{CH}_2=\text{CH}-\text{CH}_2\text{Cl}$  [4]  $\text{CH}_3-\text{CH}=\text{CH}-\text{Cl}$
- Q.50** Which of the following polymers contains nitrogen : **[MP PET 2003]**  
 [1] Nylon [2] Polythene [3] PVC [4] Terylene
- Q.51** Which of the following is a polyamide ? **[AIEEE 2005]**  
 [1] Nylon-66 [2] Teflon [3] Bakelite [4] Terylene
- Q.52** Which of the following is fully fluorinated polymer ? **[AIEEE 2005]**  
 [1] Teflon [2] Neoprene [3] PVC [4] Thiokol

### Answer Key

<b>Qus.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>Ans.</b>	2	2	3	2	4	3	2	2	1	4	1	4	3	3	1	3	1	2	4	2
<b>Qus.</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>
<b>Ans.</b>	1	1	1	4	4	2	4	4	4	1	3	2	3	4	4	2	4	3	3	4
<b>Qus.</b>	<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>	<b>49</b>	<b>50</b>	<b>51</b>	<b>52</b>								
<b>Ans.</b>	3	1	3	3	4	4	3	3	2	1	1	1								