

GPLUS EDUCATION

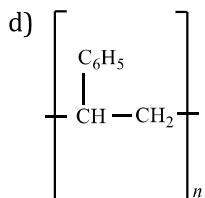
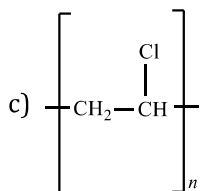
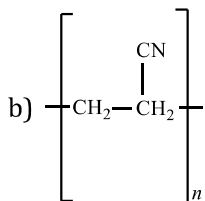
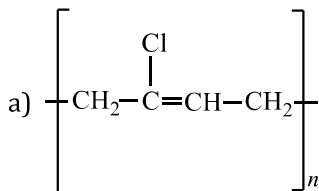
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CHEMISTRY

POLYMERS

Single Correct Answer Type

- A chain transfer agent is
 - C_6H_5OH
 - $NH(C_6H_5)_2$
 - CCl_4
 - CH_3OH
- Caprolactam is obtained from
 - Cyclohexane
 - Hexane
 - Adipic acid
 - Adipic acid and hexamethylene diamine
- Caprolactam is used to prepare which of the following polymer?
 - Nylon-6, 6
 - Malamine
 - Nylon-6
 - PMMA
- Which of the following represents neoprene polymer:



- Among cellulose poly (vinyl chloride), nylon and natural rubber, the polymer in which the intermolecular force of attraction is weakest in
 - Nylon
 - Poly (vinyl chloride)
 - Cellulose
 - Natural rubber
- A homopolymer is obtained by polymerization of:
 - One type of monomer units
 - Two types of monomer units
 - Either of the above
 - None of the above
- For natural polymers PDI is generally
 - 0
 - 1
 - 100
 - 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) $\text{CH}_2=\text{CH}-\text{C}_6\text{H}_5$ b) $\text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2$
 c) $\text{CH}_2=\text{C}(\text{CH}_3)-\text{C}(\text{OCH}_3)=\text{O}$ d) $\text{CH}_2 = \text{CH} - \text{C} \equiv \text{N}$
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 $\left[\begin{array}{c} \text{CH}_3 \\ | \\ \text{---C---CH}_2 \\ | \\ \text{CH}_3 \end{array} \right]_n$ 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?
 Nylon-6,6
 a) $\text{[-NH(CH}_2\text{)}_6\text{NHCO(CH}_2\text{)}_4\text{-CO]}_n$
 b) Teflon $\text{-(CF}_2\text{-CF}_2\text{)}_n$
 c) Neoprene $\left[\text{CH}_2\text{-}\underset{\text{Cl}}{\text{C}}\text{=CH-CH}_2 \right]_n$
 d) Terylene $\text{-(CO-}\langle \text{C}_6\text{H}_4 \rangle\text{-COOCH}_2\text{-CH}_2\text{-O)}_n$
30. Which is the best monomer for getting chain growth polymer?
 a) $\text{CH}_2 = \text{CHCl}$ b) $\text{CH}_2 = \text{CHCN}$ c) $\text{CH}_2 = \text{CHC}_6\text{H}_5$ d) $\text{CH}_2 = \text{C. COOCH}_3$
31. Which of the following is thermoplastic?
 a) Dacron b) Nylon c) Polythene d) All of these
32. Thermosetting polymer, Bakelite is formed by the reaction of phenol with
 a) $\text{CH}_3\text{CH}_2\text{CHO}$ b) CH_3CHO c) HCHO d) HCOOH
33. Which one of the following statement is wrong?
 a) The IUPAC name of $[\text{Co}(\text{NH}_3)_6\text{Cl}_3]$ is hexamine cobalt III chloride.
 b) Dibenzol peroxide is a catalyst in the polymerization of PVC.
 c) Borosilicate glass is heat resistant.
 d) Concentrated HNO_3 can be safely transported in aluminium containers.
34. Symbolic name for Teflon is:
 a) PTFE b) PCTFE c) PVC d) None of these
35. The condensation polymer is
 a) Teflon b) Polystyrene c) Dacron d) Neoprene
36. Which of the following is not an addition polymer?
 a) Neoprene b) Polystyrene c) Terylene d) Polyethylene
37. Which of the following pairs is not correctly matched?
 a) Terylene-condensation polymer of terephthalic acid and ethylene glycol
 b) Teflon-thermally stable cross linked polymer of phenol and formaldehyde
 c) Perspex-a homopolymer of methyl methacrylate
 d) Synthetic rubber-a copolymer of butadiene and styrene
38. Which among the following is step-growth polymer?
 a) PTFE b) PVC c) Polyester d) Polythene
39. Which one of the following is not a condensation polymer?
 a) Dacron b) Neoprene c) Melamine d) Glyptal
40. Teflon is:

- a) $\text{-(CBr}_2\text{-CBr}_2\text{)}_n$ b) $\text{-(CCl}_2\text{-CCl}_2\text{)}_n$ c) $\text{-(CBr}_2\text{-CBr}_2\text{)}_n$ d) CF_2Cl_2
41. An example of natural biopolymer is
 a) Teflon b) Nylon-66 c) Rubber d) DNA
42. A polymer containing nitrogen is
 a) Bakelite b) Dacron c) Rubber d) Nylon-66
43. Which of the following has been used in the manufacture of non-inflammable photographic films?
 a) Cellulose nitrate b) Cellulose xanthate
 c) Cellulose perchlorate d) Cellulose acetate
44. Arrange the following monomers in order of decreasing ability to undergo cationic polymerisation
 I. $\text{NO}_2\text{C}_6\text{H}_5 - \text{CH} = \text{CH}_2$
 II. $\text{CH}_2 = \text{CH} - \text{C}_6\text{H}_5\text{CH}_3$
 III. $\text{CH}_2 = \text{CH} - \text{C}_6\text{H}_5\text{OCH}_3$
 a) I>II>III b) III>II>I c) II>I>III d) I>III>II
45. Which of the following alkenes is most reactive towards cationic polymerization?
 a) $\text{CH}_2 = \text{CHCH}_3$ b) $\text{H}_2\text{C} = \text{CHCl}$ c) $\text{H}_2\text{C} = \text{CHC}_6\text{H}_5$ d) $\text{H}_2\text{C} = \text{CHCO}_2\text{CH}_3$
46. The product of addition polymerisation reaction is:
 a) PVC b) Nylon c) Terylene d) Polyamide
47. The polymer obtained by condensation of sebacic acid and hexamethylenediamine is named as
 a) Nylon-6 b) Nylon-6-nylon-10 c) Nylon-6,6 d) Nylon-6,10
48. Among the following, the wrong statement is
 a) PMMA is plexiglass b) SBR is natural rubber
 c) PTFE is teflon d) LDPE is low density polythene
49. Natural rubber is which type of polymer?
 a) Condensation polymer b) Addition polymer
 c) Coordination polymer d) None of these
50. PVC polymer can be prepared by which of the monomer?
 a) $\text{CH}_3\text{CH} = \text{CH}_2$ b) $\text{C}_6\text{H}_5\text{CH} = \text{CH}_2$ c) $\text{CH}_2 = \text{CH}_2$ d) $\text{CH}_2 = \text{CH} - \text{Cl}$
51. Which of the following is polycarbonate?
 a) Acrilan b) Lexan c) NBR d) Runa-S
52. Which of the following has an ester linkage?
 a) Nylon-6, 6 b) Dacron c) PVC d) Bakelite
53. On the basis of their mode of formation, the polymers can be classified as
 a) Addition polymers only b) Condensation polymers only
 c) Copolymers d) Both addition and condensation polymers
54. Thermoplastics are:
 a) Linear polymers
 b) Soften or melt on heating
 c) Molten polymer can be moulded in desired shape
 d) All of the above
55. The starting materials of PCTFE are:
 a) Monochlorotrifluoro ethylene
 b) Tetrafluoroethylene
 c) Vinyl chloride
 d) Styrene
56. Nylon is not a
 a) Condensation polymer b) Polyamide
 c) Copolymer d) Homopolymer
57. Thiokol is a
 a) fibre b) Plastic c) Rubber d) Monomer

58. Terylene is a polymer obtained from
 a) Ethylene glycol and glycerol
 b) Ethylene glycol and glycerolaldehydes
 c) Ethylene glycol and terephthalic acid
 d) None of the above
59. Which are true for terpolymer?
 a) Contains three monomers
 b) ABS plastic
 c) A polymer of acrylonitrile, butadiene and styrene
 d) All of the above
60. Protein is a polymer of:
 a) Glucose
 b) Terephthalic acid
 c) Amino acids
 d) None of these
61. Orlon is a polymer of:
 a) Styrene
 b) Acrylonitrile
 c) Vinyl chloride
 d) Tetrafluoroethylene
62. Monomer of PTFE is
 a) Ethylene
 b) Propylene
 c) Butadiene
 d) Tetra fluoroethylene
63. Rubber is heated with Sulphur and the process is known:
 a) Galvanization
 b) Vulcanization
 c) Bessemerization
 d) Sulphonation
64. Which one of the following is a copolymer?
 a) Polyethylene
 b) Polyvinyl chloride
 c) Polytetrafluoroethylene
 d) Nylon-6, 6
65. Given the polymers,
A = Nylon 6.6; *B* = Buna -S; *C* = Polythene. Arrange these in increasing order of their intermolecular force (lower to higher).
 a) $A < B < C$
 b) $A < C < B$
 c) $B < C < A$
 d) $B < C < B$
66. Rayon is
 a) Natural silk
 b) Artificial silk
 c) Regenerated fibre
 d) Synthetic fibre
67. Heating of rubber with sulphur is called
 a) Vulcanisation
 b) Galvanisation
 c) Sulphonation
 d) Bessemerisation
68. Nylon-66 is not a
 a) Condensation polymer
 b) Polyamide
 c) Both (a) and (b)
 d) None of the above
69. Which of the following is fully fluorinated polymer?
 a) PVC
 b) Thiokol
 c) Teflon
 d) Neoprene
70. Vulcanised rubber resists
 a) Wear and tear due to friction
 b) High temperature
 c) Action of heat
 d) Cryogenic temperature
71. Perspex or plexiglass is a polymer of:
 a) Methyl methyl acrylate
 b) Methyl acrylate
 c) Acrylonitrile
 d) None of the above
72. The weakest interparticle forces of attraction are present in
 a) Elastomers
 b) Fibres
 c) Thermoplastics
 d) Thermosetting polymers
73. If M_w is the weight average molecular weight and \bar{M}_n is the number of average molecular weight of a polymer, the poly dispersity index (PDI) of the polymer is given by
 a) $\frac{\bar{M}_n}{M_w}$
 b) $\frac{\bar{M}_w}{\bar{M}_n}$
 c) $\bar{M}_w \times \bar{M}_n$
 d) $\frac{1}{\bar{M}_w \times \bar{M}_n}$
74. The polymer, which is a product of addition polymerization, is
 a) Glyptal
 b) Buna rubber
 c) Proteins
 d) Nylon-6, 6

75. Buna rubber is a polymer of:
 a) 1,3-butadiene b) Vinyl acetate c) Styrene d) None of these
76. Condensation product of caprolactam is
 a) Nylon-6 b) Nylon-66 c) Nylon-60 d) Nylon-6,10
77. To make PVC a flexible plastic, the additive used is called:
 a) Filler b) Antioxidant c) Stabilizer d) Plasticiser
78. Nylons, polyesters and cotton, all possess strength due to:
 a) Intermolecule H-bonding
 b) Van der Waals' attraction
 c) Dipole-dipole interaction
 d) None of the above
79. Natural rubber on catalytic hydrogenation gives
 a) Syndiotactic product b) Atactic product c) Isotactic product d) None of these
80. Nylon-66 is an example of
 a) Poly propylene b) Polyester c) Polyamide d) Polystyrene
81. Natural rubber is a polymer of
 a) Styrene b) Chloroprene
 $\text{CH}_2 = \text{C} - \text{CH} = \text{CH}_2$ or isoprene
 c) $\begin{array}{c} | \\ \text{CH}_3 \end{array}$ d) 1,3 butadiene
82. Bakelite is a copolymer of:
 a) HCHO and melamine b) HCHO and phenol c) Phenol and ethylene d) None of these
83. Which can absorb over 90% of its own mass of water and does not stick to wound?
 a) Rayon b) Gun cotton c) Thiokol d) Saran
84. Terylene is a:
 a) Polyamide
 b) Polyester
 c) Polyether
 d) Long chain hydrocarbon
85. Caprolactam used for manufacture of nylon-6 is obtained by Beckmann rearrangement of
 a) Benzophenone oxime b) Acetophenone oxime
 c) Cyclohexanone oxime d) Cyclopentanone oxime
86. Which type of polymer is cellulose diacetate fibre?
 a) Synthetic b) Natural c) Semi-synthetic d) None of these
87. Which of the following is not a natural polymer?
 a) Glycogen b) Cellulose c) Pepsin d) Polybutadiene
88. Polyethylene is a resin obtained by polymerization of
 a) Styrene b) Isoprene c) Ethylene d) Butadiene
89. Polymers have
 a) Absolute molecular weight b) Average molecular weight
 c) Low molecular weight d) Absolute melting point
90. PDI for natural polymers is generally close to:
 a) Zero b) 100 c) 1 d) 10
91. Which is a polymer of three different monomers?
 a) ABS b) SBR c) NBR d) Nylon-2-nylon-6
92. Which one of the following is a copolymer?
 a) Saran b) Orlon c) PVC d) Teflon
93. Which of the following cannot be grouped as polyolefins?
 a) Polyethene b) Polypropene c) Polystyrene d) Polyoxyethene

94. Consider following statements

IV. Cationic polymerization occurs in monomers with electron donation substituents.

V. Anionic polymerization occurs in monomers with electron-withdrawing substituents.

VI. Head-to-head chain growth polymerisation occurs in polystyrene

Select correct statements

a) I,II

b) I,III

c) II,III

d) I,II,III

95. Of the following which is a step growth polymer?

a) Bakelite

b) Polyethylene

c) Teflon

d) PVC

96. Chloroprene is obtained by addition of HCl to

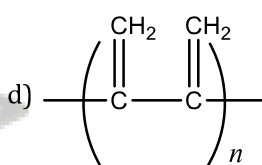
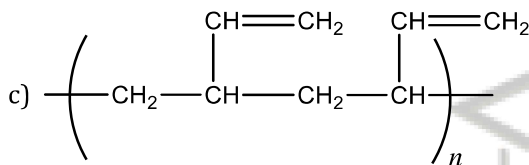
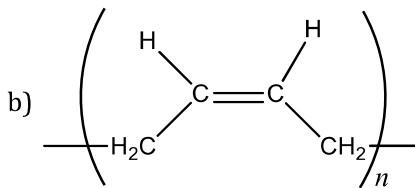
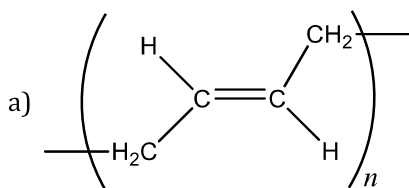
a) Ethylene

b) Acetylene

c) Vinylacetylene

d) Phenyl acetylene

97. Mark out the most unlike form of polymerization of $\text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2$



98. Which of the following vinyl derivatives is most reactive towards anionic polymerisation?

a) $\text{CH}_2 = \text{CHCH}_3$

b) $\text{CH}_2 = \text{CHC}_2\text{H}_5$

c) $\text{CH}_2 = \text{CHCl}$

d) $\text{CH}_2 = \text{CHC} = \text{N}$

99. Which of the following rubber is not a polydiene?

a) Polyisoprene

b) Polychloroprene

c) Thiokol rubber

d) Nitrile rubber

100. The S in Buna-S refers to

a) Sulphur

b) Styrene

c) Sodium

d) Just a trade name

101. In case of condensation of polymers?

a) High molecular weight polymers are formed all at once.

b) Lower molecular weight polymers are formed all at once.

c) Molecular weight of polymers rises throughout the reaction.

d) Have no specific relation to their molecular weight.

102. Synthetic polymer which resembles natural rubber is

a) Neoprene

b) Chloroprene

c) Glyptal

d) Nylon

103. Which one of the following is employed in making explosives?

a) Methanol

b) Oxalic acid

c) Glycerol

d) Urea

104. Which of the following is biodegradable polymer?

a) Polythene

b) Bakelite

c) PHBV

d) PVC

105. Polymers of the type $X - M_n - Y$ are called

a) Telomers

b) Copolymers

c) Elastomers

d) Invertomers

106. A copolymer of vinyl chloride and vinylidene chloride is called:

a) Dynel

b) Saran

c) Vinylon

d) Orlon

107. Which of the following is commonly called a "polyamide"?

a) Rayon

b) Nylon-6,6

c) Terylene

d) Orlon

108. Melamine plastic crockery is a copolymer of:

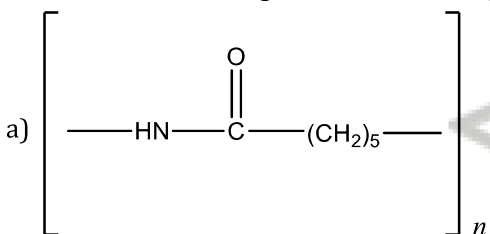
a) HCHO and melamine

- b) HCHO and ethylene
 c) Melamine and ethylene
 d) None of these
109. Which of the following type of forces are present in nylon-6, 6?
 a) Van der Waals' forces of attraction
 b) Hydrogen bonding
 c) Three dimensional network of bonds
 d) Metallic bonding
110. Which of the following is an inert polymer used in coating, particularly in non-sticking frying pans?
 a) Teflon
 b) Perspex
 c) Bakelite
 d) Orlon
111. Which of the following is wrong?
 a) PMMA is called plexiglass
 b) PTFE is called Teflon
 c) SBR is called natural rubber
 d) LDPE is called low density polyethylene
112. Which of the following is called polyamide?
 a) Terylene
 b) Rayon
 c) Nylon
 d) Orlon
113. Teflon is an example of polymer which is a/an
 a) Polyamide
 b) Addition polymer
 c) Polyester
 d) Formaldehyde resin
114. Bakelite is:
 a) Addition polymer
 b) Elastomer
 c) Thermoplastic
 d) Thermosetting
115. Formation of terylene is an example of
 a) Condensation polymerization
 b) Addition polymerization
 c) Esterification
 d) Saponification
116. Natural rubber is polymer of
 a) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}_2\text{C} = \text{C} - \text{CH} = \text{CH}_2 \\ | \\ \text{C}_6\text{H}_5 \end{array}$
 b) $\begin{array}{c} \text{Cl} \\ | \\ \text{H}_2\text{C} = \text{C} - \text{CH} = \text{CH}_2 \end{array}$
 c) $\begin{array}{c} | \\ \text{CH} = \text{CH}_2 \end{array}$
 d) $\text{---}(\text{CH}_2\text{---CH}_2)\text{---}_n$
117. Which of the following is an elastomer?
 a) Vulcanised rubber
 b) Dacron
 c) Polystyrene
 d) Melamine
118. The correct repeating structural unit of polystyrene is
 a) $\text{---CH}_2\text{---}\underset{\text{C}_6\text{H}_5}{\text{CH}}\text{---}\underset{\text{C}_6\text{H}_5}{\text{CH}}\text{---CH}_2\text{---}$
 b) $\text{---CH}_2\text{---}\underset{\text{C}_6\text{H}_5}{\text{CH}}\text{---CH}_2\text{---}\underset{\text{C}_6\text{H}_5}{\text{CH}}\text{---}$
 c) $\text{---}\underset{\text{C}_6\text{H}_5}{\text{CH}}\text{---CH}_2\text{---CH}_2\text{---}\underset{\text{C}_6\text{H}_5}{\text{CH}}\text{---}$
 d) $\text{---CH}_2\text{---}\underset{\text{C}_6\text{H}_5}{\text{CH}}\text{---CH}_2\text{---CH}=\text{CH}\text{---CH}_2\text{---}$
119. Which of the following is used for making artificial silk?
 a) Adipic acid
 b) Starch
 c) Cellulose
 d) Terephthalic acid
120. $\text{F}_2\text{C} = \text{CF}_2$ is a monomer is
 a) Teflon
 b) Nylon
 c) Glyptal
 d) Buna-S
121. Which is/are true for elastomers?
 a) These are synthetic polymers possessing elasticity
 b) These possess very weak intermolecular forces of attractions between polymer chains
 c) Vulcanised rubber is an example of elastomer
 d) All of the above
122. Which of the following is a biodegradable polymer?
 a) Cellulose
 b) PVC
 c) Nylon-6
 d) Polythene

123. The compound which cannot be used as a plasticizer, is
 a) di-n-butylphthalate b) Tricresyl phosphate
 c) di-n-octylphthalate d) Diethyl phthalate
124. The monomer of Teflon is
 a) Monofluoroethene b) Difluoroethene c) Trifluoroethene d) Tetrafluoroethene
125. Which of the following does not cause pollution?
 a) Burning of rubber b) Burning of petrol c) Use of solar energy d) Coal
126. Polystyrene, Dacron and orlon are classified respectively as
 a) Chain growth; step growth; step growth b) Chain growth; chain growth; step growth
 c) Chain growth; step-growth; chain growth d) Step growth; step growth; chain growth
127. Catalyst used in dimerisation of acetylene to 'prepare' chloroprene is
 a) $\text{HgSO}_4 + \text{H}_2\text{SO}_4$ b) Cu_2Cl_2 c) $\text{Cu}_2\text{Cl}_2 + \text{NH}_4\text{Cl}$ d) $\text{Cu}_2\text{Cl}_2 + \text{NH}_4\text{OH}$
128. The fibre obtained by the condensation of hexamethylene diamine and adipic acid is:
 a) Dacron b) Nylon-6,6 c) Rayon d) Teflon
129. Caprolactam can be obtained from:
 a) Benzaldehyde b) Cyclohexane c) Benzophenone d) Adipic acid
130. Polystyrene is an example of
 a) Elastomer b) Fibre
 c) Thermoplastic d) Thermosetting polymer
131. The catalyst used in the manufacture of polythene by Ziegler method is:
 a) Titanium tetrachloride and triphenyl aluminium
 b) Titanium tetrachloride and triethyl aluminium
 c) Titanium dioxide
 d) Titanium isoperoxide
132. The compound used in the manufacture of Terylene is:
 a) Phthalic acid
 b) Caprolactam
 c) *p*-benzene dicarboxylic acid
 d) *m*-phthalic acid
133. Which is not a polyacrylate?
 a) PMMA b) Acrilan c) Poly acrylonitrile d) PCTFE
134. Which one of the following is not a correct match?

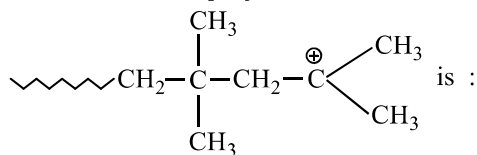
Polymer		Monomer/s		
a) Teflon	-	Tetrafluoroethylene	b) Plexi glass	- Methyl methacrylate
c) Orlon	-	Glycerol, phthalic anhydride	d) Buna S	- Styrene, 1,3 butadiene
135. The catalyst used in the polymerization of high density polythene is
 a) Titanium oxide
 b) Titanium isoperoxide
 c) Lithium tetrachloride and triphenyl aluminium
 d) Titanium tetrachloride and trimethyl aluminium
136. The alternative name of glyptal is
 a) Alkyd resin b) Phenol-formaldehyde resin
 c) Melamine-formaldehyde resin d) Melmac
137. Synthetic polymer that resembles natural rubber is
 a) Chloroprene b) Isoprene c) Neoprene d) Glyptal
138. The phenomenon involving the union of two or more molecules to form a new molecular aggregate is called:
 a) Polarisation b) Polymerisation c) Photosensitisation d) Pasteurisation
139. By the addition of 3% to 10% sulphur in rubber

- a) Soft rubber is obtained
c) No change takes place
- b) Hard rubber is obtained
d) Soluble rubber is obtained
140. Of the following which one is classified as polyester polymer?
a) Nylon-6,6 b) Terylene c) Bakelite d) Melarnive
141. The simple molecules from which a polymer is made, are called
a) Monomer b) Repeating unit c) Isomer d) Tautomer
142. Dacron is obtained by the condensation polymerization of
a) Dimethyl terephthalate and ethylene glycol b) Terephthalic acid and formaldehyde
c) Phenol and phthalic acid d) Phenol and formaldehyde
143. Buna-S is a copolymer of
a) Styrene and 1, 3-butadiene b) Styrene and ethylene
c) 1,3-butadiene and ethylene d) None of the above
144. Which of the following is not a synthetic fibre?
a) Rubber b) Nylon-6 c) Nylon-6, 6 d) Nylon-6,10
145. Which of the following statement is false?
a) The repeat unit in natural rubber is isoprene
b) Both starch and cellulose are polymers of glucose
c) Artificial silk is derived from cellulose
d) Nylon-6,6 is an example of elastomer
146. Which is considered to be the first synthetic polymer?
a) Nylon b) Terylene c) LDPE d) Bakelite
147. Which one of the following is a chain growth polymer?
a) Starch b) Nucleic acid c) Polystyrene d) Protein
148. Number average molecular mass, \overline{M}_n and weight average molecular mass (\overline{M}_w) of synthetic polymers are related as
a) $\overline{M}_n = (\overline{M}_w)^{1/2}$ b) $\overline{M}_n = \overline{M}_w$ c) $\overline{M}_w > \overline{M}_n$ d) $\overline{M}_w < \overline{M}_n$
149. Which is not an example of copolymer?
a) SAN b) ABS c) Saran d) PVC
150. Gutta parcha rubber is:
a) a *trans*-1, 4-polyisoprene polymer
b) A very hard material
c) A synthetic polymer
d) All of the above
151. Orlon is a hard, horny and a high melting material, which of the following represents its structure?
a) $\left(\text{CH}_2 - \underset{\text{COOC}_2\text{H}_5}{\text{CH}} \right)_n$ b) $\left(\text{CH}_2 - \underset{\text{Cl}}{\text{CH}} \right)_n$ c) $\left(\text{CH}_2 - \underset{\text{CN}}{\text{CH}} \right)_n$ d) $\left(\text{CH}_2 - \underset{\text{COOCH}_3}{\overset{\text{CH}_3}{\text{C}}} \right)_n$
152. Which of the following is used in vulcanization of rubber?
a) SF₆ b) CF₄ c) Cl₂F₂ d) C₂F₂
153. Which of the following natural products is not a polymer?
a) DNA b) Cellulose c) ATP d) Urease
154. Buna -N- synthetic rubber is a copolymer of
a) $\text{H}_2\text{C} = \underset{\text{Cl}}{\text{C}} = \text{CH}_2$ and $\text{H}_2\text{C} = \text{CH} - \text{CH} = \text{CH}_2$
b) $\text{H}_2\text{C} = \text{CH} - \text{CH} = \text{CH}_2$ and $\text{H}_5\text{C}_6 - \text{CH} = \text{CH}_2$
c) $\text{H}_2\text{C} = \text{CH} - \text{CN}$ and $\text{H}_2\text{C} = \text{CH} - \text{CH} = \text{CH}_2$
d) $\text{H}_2\text{C} = \text{CH} - \text{CN}$ and $\text{H}_2\text{C} - \underset{\text{I}}{\text{C}} = \text{CH}_2$

155. Esterification of terephthalic acid with glycol produces
 a) Nylon b) Buna rubber c) Polyurethane d) Terylene
156. Which compound polymerises to neoprene?
 a) $\text{CH}_2 = \text{CHCl}$ b) $\text{CH}_2 = \text{C}(\text{Cl}) - \text{CH} = \text{CH}_2$
 c) $\text{Cl}_2\text{C} = \text{C}(\text{Cl})_2$ d) $\text{F}_2\text{C} = \text{CF}_2$
157. Which of the following is not a thermoset?
 a) Glyptal
 b) Bakelite
 c) Melamine-formaldehyde polymer
 d) Styrene-butadiene rubber
158. Monomers are converted to polymer by
 a) Hydrolysis of monomers b) Condensation reaction between monomers
 c) Protonation of monomers d) None of the above
159. Glyptal polymer is obtained from glycol by reacting with
 a) Malonic acid b) Phthalic acid c) Maleic acid d) Terephthalic acid
160. Nylon is manufactured from
 a) Methyl salicylate b) Teflon c) Adipic acid d) Ethylene
161. Which of the following is a condensation polymer?
 a)  b) Rubber
 c) Polyvinyl chloride d) Polyethylene
162. Bakelite is a condensation polymer of phenol and formaldehyde. The initial step between the two compounds is an example of
 a) Free radical reaction b) Aldol condensation
 c) Aromatic nucleophilic substitution d) Aromatic electrophilic substitution
163. Name of compound/compounds used in preparation of nylon-66
 a) ϵ - caprolactam b) Hexamethylenediamine and adipic acid
 c) Dimethyl terephthalate d) Hexamethylenediamine
164. Phenol-formaldehyde resins are obtained from phenol and formaldehyde by
 a) Addition polymerization b) Condensation polymerization
 c) Copolymerization d) Both (b) and (c)
165. One of the constituents in the preparation of Thiokol is
 a) 1,2-dichloroethane b) Isoprene c) Chloroprene d) Sulphur
166. Bakelite is obtained from phenol by reacting with
 a) $(\text{CH}_2\text{OH})_2$ b) CH_3CHO c) CH_3COCH_3 d) HCHO
167. Polymerisation of chloroethylene gives the polymer:
 a) Polythene b) PVC c) Teflon d) Nylon
168. Condensation of caprolactam gives:
 a) Nylon-6,6 b) Nylon-6 c) Nitrile rubber d) Nylon-6,10
169. Which of the following types of bonds are present in nylon-6, 6?
 a) Covalent bond b) Double bond c) Hydrogen bond d) All of these
170. Which of the following is not a thermoplastic?
 a) Polystyrene b) Teflon c) Polyvinyl chloride d) Novalac
171. Natural silk and artificial silk differ in one respect that one of them contains:

172. A raw material used in making nylon-6,6 is:
 a) Adipic acid b) Butadiene c) Ethylene d) Methylmethacrylate

173. The monomer of polymer



- a) $\text{CH}_3\text{CH}=\text{CH}_2$ b) $\text{CH}_2=\text{C}\begin{matrix} \text{CH}_3 \\ \text{CH}_3 \end{matrix}$ c) $(\text{CH}_3)_2\text{C}=\text{C}(\text{CH}_3)_2$ d) $\text{CH}_3\text{CH}=\text{CHCH}_3$
174. Three dimensional molecules with cross links are formed in the case of a
 a) Thermoplastic b) Thermosetting plastic c) Both (a) and (b) d) None of the above

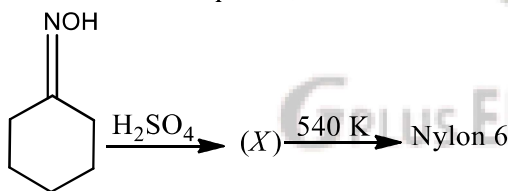
175. Polymerisation in which two or more chemically different monomers take part is called:

- a) Addition polymerisation
 b) Copolymerisation
 c) Chain polymerisation
 d) Homo polymerization
176. Which of the following type of forces are present in vulcanized rubber?
 a) Weakest intermolecular forces b) Hydrogen bonding
 c) Three dimensional network of bonds d) Metallic bonding

177. Teflon polymer is formed by the polymerization of

- a) $\text{CH}_2 = \text{CH} - \text{CN}$ b) $\text{F}_2\text{C} = \text{CF}_2$ c) $\text{Cl}_2\text{C} = \text{CH}_2$ d) $\text{H}_2\text{C} = \text{CHCl}$

178. In the reaction sequence,



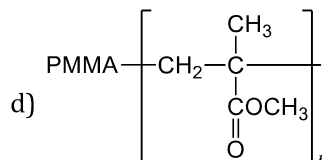
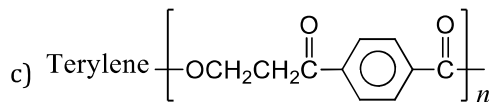
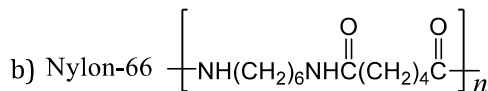
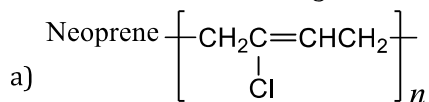
(X) is

- a) Cyclohexanone b) Caprolactum
 c) $\text{HO}(\text{CH}_2)_6\text{NH}_2$ d) Hexamethylenediisocyanate
179. The polymer which is used in non-sticky kitchenware is
 a) PVC b) Teflon c) Rayon d) Isoprene
180. The chemical name of isoprene is
 a) 2- methyl-1, 3-butadiene b) 2-chloro-1, 3-butadiene
 c) 2-methoxypropene d) None of these
181. Which of the following is thermosetting polymer?
 a) Nylon-6 b) Bakelite c) Nylon-66 d) SBR
182. Glyptal or alkyd is polymer of:
 a) Ethylene glycol and phthalic acid
 b) Ethylene and phthalic acid
 c) Phthalic acid and acetylene
 d) None of the above
183. The correct statement about Thiokol rubber is that
 a) It is a natural polysulphide rubber b) It is resistant to oils and abrasion
 c) It is prepared by addition polymerization d) All of the above are correct
184. Which of the following is cross-linked polymer?

- a) Teflon b) Orlon c) Nylon d) Bakelite
185. Dacron is an example of
a) Elastomer b) Fibre
c) Thermoplastic d) Thermosetting polymer
186. A high molecular weight molecule, made up of a large number of smaller units, is known as
a) Monomer b) Biomolecule c) Polymer d) Both (b)and(c)
187. Polymers are:
a) Micromolecules b) Macromolecules c) Sub-micromolecules d) None of these
188. Which one is a homopolymer?
a) Bakelite b) Nylon 6,6 c) Terylene d) Neoprene
189. The plastic household crockery is prepared by using
a) Melamine and tetrafluoroethane b) Malonic acid and hexamethyleneamine
c) Melamine and vinyl acetate d) Melamine and formaldehyde
190. The polymer used in making synthetic hair wigs is made up of
a) $\text{CH}_2 = \text{CHCl}$ b) $\text{CH}_2 = \text{CHCOOCH}_3$
c) $\text{C}_6\text{H}_5\text{CH} = \text{CH}_2$ d) $\text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2$
191. Copolymer is:
a) Nylon-6 b) Nylon-6,6 c) Bakelite d) Polythene
192. The polymer which has conducting power is
a) Polyethylene b) Polybutadiene c) Polystyrene d) Polyacetylene
193. Which one is protein fibre?
a) Cotton b) Rayon c) Silk d) Polyester
194. Strongest interparticle forces exists in:
a) Elastomers
b) Thermoplastics
c) Fibres
d) Thermosetting polymers
195. Buna-S is a synthetic copolymer of:
a) Styrene and 1, 3-butadiene
b) Styrene and ethylene
c) 1,3-butadiene and ethylene
d) None of the above
196. Which one is chain-growth polymers?
a) Teflon b) Nylon-6 c) Nylon-66 d) Bakelite
197. Which of the following polymer has ester linkage?
a) Nylon-66 b) PVC c) Terylene d) SBR
198. The polymer melmac is obtained by
a) Addition polymerization of melamine and formaldehyde
b) Free radical polymerisation of acrylonitrile
c) Condensation polymerization of melamine and formaldehyde
d) Coordination polymerisation of melamine
199. The monomer units of silicons a water repellent, acid resistant and heat resistant polymer is:
a) Si b) SiO_2 c) R_2SiO d) None of these
200. Which of the following belong to the class of natural polymers?
a) Proteins b) Cellulose c) Rubber d) All of these
201. Which process involves the formation of polystyrene from styrene?
a) Polymerisation
b) Racemization
c) Condensation

- d) Reversible reaction
202. Which among the following is a synthetic polymer?
 a) Proteins
 b) Polysaccharides
 c) Natural rubber
 d) Phenol-formaldehyde resin
203. PVC is prepared by the polymerization of
 a) Ethylene
 b) 1-chloropropene
 c) Propene
 d) 1-chloroethene
204. In the natural rubber, the isoprene units are joined in
 a) Head to head manner
 b) Tail to tail manner
 c) Head to tail manner
 d) Random manner
205. Nylon is a
 a) Polysaccharide
 b) Polyester
 c) Polyamide
 d) All of these
206. Which type of polymer is bakelite?
 a) Addition polymer
 b) Homopolymer
 c) Condensation polymer
 d) Biopolymer
207. Which of the following is not a polymer?
 a) Teflon
 b) Petroleum
 c) Cellulose
 d) Natural rubber
208. Which is not an example of homopolymer out of the following?
 a) PVC
 b) SBR
 c) Orlon
 d) Teflon
209. Which of the following is a biodegradable polymer?
 a) Cellulose
 b) Polythene
 c) Polyvinyl chloride
 d) Nylon-6
210. The monomers used for the preparation of nylon 2-nylon 6 is/are
 a) Caprolactam
 b) Alanine and amino caproic acid
 c) Glycine and amino caproic acid
 d) Hexamethylenediamine and adipic acid
211. Nylon 6,6 is not a
 a) Condensation polymer
 b) Polyamide
 c) Homopolymer
 d) Copolymer
212. The polymer containing strong intermolecular forces e.g. hydrogen bonding, is
 a) Teflon
 b) Nylon-66
 c) Polystyrene
 d) Natural rubber
213. The strongest molecular forces are present in
 a) Elastomers
 b) Thermoplastics
 c) Fibres
 d) thermosetting polymers
214. The monomers of Buna-S rubber are
 a) Vinyl chloride and sulphur
 b) Butadiene
 c) Styrene and butadiene
 d) Isoprene and butadiene
215. Which of the following statements is not true?
 a) Natural silk is a protein
 b) PDI for natural polymers is greater than one
 c) Polyurethane foams are used for making pillows
 d) HDPE is prepared by Ziegler-Natta polymerisation
216. Bakelite is a product of the reaction between
 a) Formaldehyde and NaOH
 b) Aniline and urea
 c) Phenol and methanol
 d) Phenol and chloroform
217. Toluene di-isocyanate is used to prepare:
 a) Polyesters
 b) Polyamides
 c) Polycarbonates
 d) Polyurethanes
218. Which polymer is used in controlled drugs capsules?
 a) SBR
 b) PTFE
 c) PHBV
 d) PAN

219. Which one of the following is not correctly matched?



220. Amongst the following the branched chain polymer is

- a) Polystyrene
b) Low density polythene
c) High density polythene
d) Polyester

221. $\text{CF}_2 = \text{CF}_2$ is a monomer of

- a) Polystyrene
b) Bakelite
c) Glyptal
d) Teflon

222. The monomer units of PTFE are:

- a) $\text{Cl}_2\text{CH}-\text{CH}_3$
b) $\text{F}_2\text{C}=\text{CF}_2$
c) $\text{F}_3\text{C}-\text{CF}_3$
d) $\text{FCIC}=\text{CF}_2$

223. Bakelite is an example of

- a) Elastomer
b) Fibre
c) Thermoplastic
d) Thermosetting polymer

224. The monomer of PVC is

- a) Ethane
b) Chloroethene
c) Dichloroethene
d) Tetra chloroethene

225. The monomers of terylene are

- a) Phenol and formaldehyde
b) Ethylene glycol and phthalic acid
c) Adipic acid and hexamethylene diamine
d) Ethylene glycol and terephthalic acid

226. A copolymer of vinyl chloride and vinyl acetate is called:

- a) Vinylon
b) Saran
c) Dynel
d) Orlon

227. Which one of the following statements is not true?

- a) Natural rubber has the *trans*-configuration at every double bond
b) Buna-S is a copolymer of butadiene and styrene
c) Natural rubber is a 1,4-polymer of isoprene
d) In vulcanization, the formation of sulphur bridges between different chains make rubber harder and stronger

228. PMMA is the polymer of:

- a) Methylmethacrylate
b) Methylacrylate
c) Methacrylate
d) Ethylacrylate

229. Polyethylene is

- a) Random copolymer
b) Homopolymer
c) Alternate copolymer
d) Cross-linked copolymer

230. Which of the following is not a fibre?

- a) Terylene
b) Nylons
c) Polyacrylonitrile
d) Polychloroprene

231. Which of the following is not a biopolymer?

- a) Proteins
b) Rubber
c) Cellulose
d) RNA

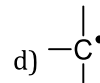
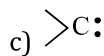
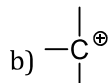
232. Which of the following polymers does not involve cross-linkages?

- a) Vulcanized rubber
b) Melamine
c) Bakelite
d) Polystyrene

233. Natural rubber is not used in making footwear for polar regions because

- a) Natural rubber becomes soft at temperature lower than 10°C .
b) Natural rubber becomes brittle at temperature lower than 10°C .
c) Natural rubber melts at temperature lower than 10°C .
d) Natural rubber becomes stronger at temperature lower than 10°C .

234. The intermediate never form during chain growth polymerization is



235. The number average molecular mass and mass average molecular mass of a polymer are respectively 30,000 and 40,000. The poly dispersity index of the polymer is

a) <1

b) >1

c) 1

d) 0

236. Among the following, a natural polymer is

a) Cellulose

b) PVC

c) Polyethylene

d) Teflon

237. Natural rubber is a polymer of

a) Styrene

b) Isoprene

c) Ethylene

d) Butadiene

238. Nylon-6, 6 is obtained by condensation polymerization of

a) Adipic acid and hexamethylene diamine

b) Phenol and formaldehyde

c) Terephthalic acid and ethylene glycol

d) Sebacic acid and hexamethylene

239. Teflon, polystyrene and neoprene are all:

a) Copolymers

b) Condensation polymers

c) Homopolymers

d) Monomers

240. The best way to prepare polyisobutylene is

a) Coordination polymerization

b) Cationic polymerization

c) Anionic polymerization

d) Free radical polymerization

241. The compound that inhibits the growth of polymer chain during vinyl polymerization, is

a) Carbon tetrachloride

b) p-benzoquinone

c) Benzophenone

d) Carbon dioxide

242. Synthetic rubber is

a) Polyisoprene

b) Polychloroprene

c) Polyethene

d) Polyesters

243. Which of the following is not a synthetic polymer?

a) Polyisoprene

b) Polybutadiene

c) Polythlene terephthalate

d) Polyethylene

244. Nylon-6, 10 is a polymer of:

a) Hexamethylene and adipic acid

b) Hexamethylene and sebacic acid

c) Caprolactam

d) None of the above

245. Buna -N is a polymer of

a) Butadiene and isoprene

b) Butadiene and acrylonitrile

c) Isoprene and ethylene diamine

d) Isoprene and butyl diamine

246. Which among the following is a chain-growth polymer?

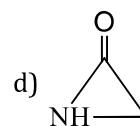
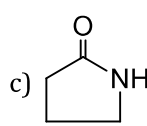
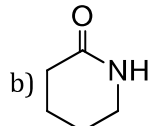
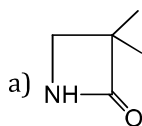
a) Nylon

b) Barkelite

c) Terylene

d) Teflon

247. Lactam from which nylon-4 is synthesised, is



248. Nylon threads are made up

a) Polyvinyl polymer

b) Polyester polymer

c) Polyamide polymer

d) Polyethylene polymer

249. Thermosets are:

a) Cross-linked polymers

b) Don't melt or soften on heating

- c) Cross-linking is usually developed at the time of moulding where they harden reversibly
d) All of the above
250. When two or more chemically different monomers take part in polymerization, it is called
a) Addition polymerization b) Copolymerization
c) Chain polymerization d) Homopolymerisation
251. In which of the following polymers, empirical formula resembles with monomer?
a) Bakelite b) Teflon c) Nylon-6,6 d) Dacron
252. A copolymer is obtained by polymerisation of:
a) One type of monomer units
b) More than one type of monomer units
c) Either of the above
d) None of the above
253. When condensation product of hexamethylenediamine and adipic acid is heated to 353 K(80°C) in an atmosphere of nitrogen for about 4-5h,the product obtained is
a) Solid polymer of nylon 66 b) Liquid polymer of nylon 66
c) Gaseous polymer of nylon 66 d) Liquid polymer of nylon66
254. Dacron is polymer is
a) Glycol and formaldehyde b) Glycol and phenol
c) Glycol and phthalic acid d) Glycol and terephthalic acid
255. Which of the following is not an example of addition polymer?
a) Terylene b) Polypropylene c) Polyethylene d) Polystyrene
256. Example of addition polymer is:
a) Buna-S b) Bakelite c) Nylon-6 d) Malamac
257. Natural fibre is:
a) Starch b) Cellulose c) Rubber d) Nylon-6
258. Select the correct statement.
a) Vinyon is a copolymer of vinyl chloride and vinyl acetate
b) Saran is a copolymer of vinyl chloride and vinylidene chloride
c) Butyl rubber is a copolymer of isobutylene and isoprene
d) All of the above are correct