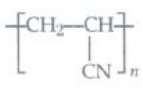
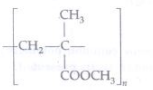
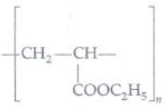
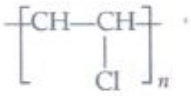
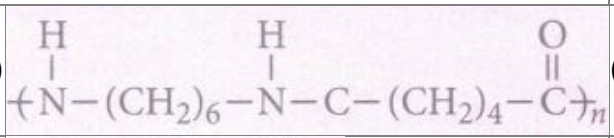
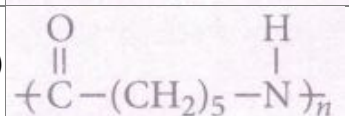
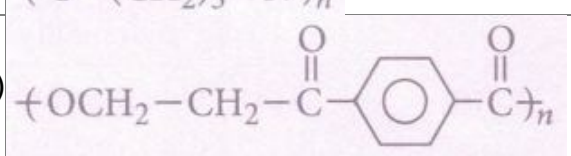
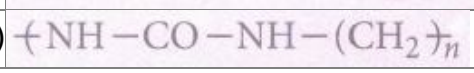
RAVI MATHS TUITION CENTRE , WHATSAPP - 8056206308

Time : 1 Mins **POLYMERS 1** **Marks : 517**

1. Which of the following sets contain only addition homopolymers?
   a) Polythene, natural rubber, cellulose b) Nylon, polyester, melamine resin
   c) Teflon, bakelite, orlon d) Neoprene, PVC, polythene
2. Which of the following is not an example of addition polymer?
   a) Polythene b) Polystyrene c) Neoprene d) Nylon 6,6
3. Which one of the following statements is not true?
   a) Buna-S is a copolymer of butadiene and styrene
   b) Natural rubber is a 1, 4-polymer of isoprene
   c)
   In vulcanization, the formation of sulphur bridges between different chains make rubber harder and stronger.
   d) Natural rubber has the trans-configuration at every double bond.
4. Assertion: The monomer of neoprene is 1, 3-butadiene.
   Reason: Neoprene is highly inflammable.
   a) If both assertion and reason are true and reason is the correct explanation of assertion
   b) If both assertion and reason are true but reason is not the correct explanation of assertion
   c) If assertion is true but reason is false d) If both assertion and reason are false
5. Which of the following statements is false?
   a) Artificialsilk is derived from cellulose. b) Nylon-6, 6 is an example of elastomer.
   c) The repeat unit in natural rubber is isoprene
   d) Both starch and celluloseare polymer of glucose.
6. Assertion: Thermoplastics become hard on heating and soft on cooling.
   Reason: Thermoplastics are cross-linked polymers which are soluble in many organic solvents.
   a) If both assertion and reason are true and reason is the correct explanation of assertion
   b) If both assertion and reason are true but reason is not the correct explanation of assertion
   c) If assertion is true but reason is false d) If both assertion and reason are false
7. Synthetic polymer prepared by using caprolactam is known as
   a) terylene b) teflon c) nylon 6 d) neoprene.
8. Nylon 6, 6 is obtained by condensation polymerisation of
   a) adipic acid and ethylene glycol b) adipic acid and hexamethylenediamine
   c) terephthalic acid and ethylene glycol d) adipic acid and phenol

9. Which of the following alkenes is most reactive towards cationic polymerisation?
   a) $CH_2 = CHCH_3$ b) $CH_2 = CHCl$ c) $CH_2 = CHC6H_5$ d) $CH_2 = CHCOOCH_3$
10. Which of the following is not an example of rubber?
    a) Polychloroprene b) Buna-N c) Butadiene-styrene copolymer d) Polyacrylonitrile
11. Heating rubber with sulphur is known as
    a) galvanisation b) bessemerisation c) vulcanisation d) sulphonation
12. Buna-N is used in making oil seals and tank linings, etc. because
    a) it is resistant to the action of lubricating oil and organic solvents
    b) it is more elastic than natural rubber c) it can be stretched twice its length
    d) it does not melt at high temperatures
13. Natural rubber or raw rubber consists of basic material latex which is a dispersion of isoprene. During the treatment this isoprene forms a high molecular weight polymer of isoprene. Natural rubber can be obtained from five hundred different species of plants.
    In the isoprene polymer all the isoprene have
    a) trans-1, 4 configuration b) cis-1, 4 configuration
    c) both cis- and trans-1, 4 configuration d) none of these
14. Which one of the following polymers is prepared by condensation polymerisation?
    a) Teflon b) Natural rubber c) Styrene d) Nylon-6, 6
15. Natural rubber has :
    a) alternate cis-and trans-configuration b) random cis- and trans-configuration
    c) all cis-configuration d) all trans-configuration
16. Acrilan is a hard, horny and a high melting. material. Which one of the following represents its structure?
    a)  b)  c)  d) 
17. The S in buna-S refers to
    a) sulphur b) styrene c) sodium d) salicylate
18. Match the polymers given in column I with the monomers in column II and mark the appropriate choice:

Column I		Column II	
(A)		(i)	Ethylene glycol + terephthalic acid
(B)		(ii)	Urea + formaldehyde
(C)		(iii)	Hexamethylenediamine + adipic acid
(D)		(iv)	Caprolactam

a) (A) ⟶ (ii), (B) ⟶ (i), (C) ⟶ (iii), (D) ⟶ (iv) b) (A) ⟶ (iii), (B) ⟶ (iv), (C) ⟶ (i), (D) ⟶ (ii)
c) (A) ⟶ (i), (B) ⟶ (iii), (C) ⟶ (ii), (D) ⟶ (iv) d) (A) ⟶ (iv), (B) ⟶ (ii), (C) ⟶ (iii), (D) ⟶ (i)

19. Which of the following sets contains only addition polymers?
a) Polyethylene, polypropylene, terylene b) Polyethylene, PVC, acrilan
c) Buna-S, nylon, polybutadiene d) Bakelite, PVC, polyethylene

20. Which of the following is a homopolymer?
a) Bakelite b) Nylon 6, 6 c) Neoprene d) Buna-S

21. High density polythene is obtained by
a)
polymerisation of ethene in a hydrocarbon solvent in the presence of Ziegler-Natta catalyst
b) polymerisation of ethene under high pressure and temperature
c) free radical polymerisation of ethene at low temperature in presence of peroxide
d) polymerisation of ethene in presence of carbon tetrachloride

22. Assertion: Low density polythene is used to make buckets, dustbins, bottles etc.
Reason: Low density polythene consists of linear molecules and has close packing.
a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false d) If both assertion and reason are false

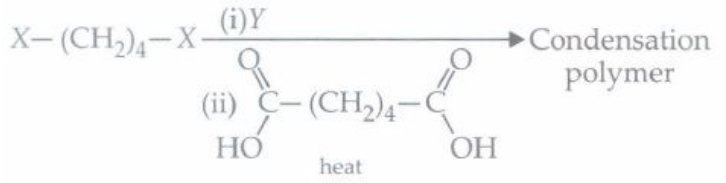
23. Composition of Ziegler- Natta catalyst is
a) $(Et_3)_3Al.TiCl_2$ b) $(Me)_3Al.TiCl_2$ c) $(Et)_3Al.TiCl_4$ d) $(Et)_3Al.PtCl_4$

24. Natural rubber or raw rubber consists of basic material latex which is a dispersion of isoprene. During the treatment this isoprene forms a high molecular weight polymer of isoprene. Natural rubber can be obtained from five hundred different species of plants.
Consider the following properties of rubber,
(i) Tensile strength of vulcanised rubber is almost ten times more than raw rubber.
(ii) Elasticity of raw rubber is very high.
Choose the correct option.
a) (i) is true (ii) is false b) (i) is false (ii) is true c) Both (i) and (ii) are true
d) Both (i) and (ii) are false

25. Assertion: Teflon is used for making oil seals, gaskets and non-stick surface coating.
Reason: Teflon is chemically inert and resistant to attack by corrosive reagents.
a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false d) If both assertion and reason are false

26. Which one of the following is a chain growth polymer?
a) Starch b) Nucleic acid c) Polystyrene d) Protein

27. The correct functional group X and the reagent/reaction conditions Y in the following scheme are

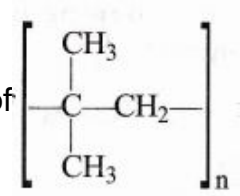


(i) X= $COOCH_3$, Y= H_2Ni/heat
(ii) X = $CONH_2$, Y = H_2/Ni/heat
(iii) X = $CONH_2$, Y = Br_2/NaOH
(iv) X = CN, Y = H_2/Ni/heat.
a) (i) and (ii) b) (i), (ii) and (iii) c) (i) and (iii) d) All of these.

28. Regarding cross-linked or network polymers, which of the following statement is incorrect?
a) Examples are bakelite and melamine
b) They are formed from bi- and tri-functional monomers
c) They contain covalent bonds between various linear polymer chains
d) They contain strong covalent bonds in their polymer chains.

29. Assertion: Strong interparticle forces exist in thermosetting polymers.
Reason: Thermosetting polymers are heavily cross linked.
a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false d) If both assertion and reason are false

30. Novolac on heating with formaldehyde undergoes _____ to form an infusible solid mass called _____.
a) polymerisation, melamine b) vulcanisation, resin c) cross-linking, bakelite
d) condensation, polystyrene

31. Monomer of  is _____.

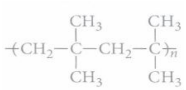
a) 2-methylpropene b) Styrene c) Propylene d) Ethene

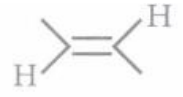
32. Bakelite is an example of
a) elastomer b) fibre c) thermoplastic d) thermosetting

33. The commercial name of polyacrylonitrile is
a) dacron b) orlon (acrilan) c) PVC d) bakelite.

34. Which of the following polymers, need atleast one diene monomer for their preparation?
a) Dacron b) Novolac c) Neoprene d) Teflon

35. Which compound form linear polymer due to H-bond?
a) H_2O b) NH_3 c) HF d) HCl

36.  is a polymer having monomer units _____ .

a)  b)  c)  d) 

37. The biodegradable polymer is _____.
    a) Nylon-2-Nylon 6 b) Nylon-6 c) Buna-S d) Nylon-6,6
38. Which of the following is not true about high density polythene?
    a) Tough b) Hard c) Inert d) Highly branched
39. Which of the following organic compounds polymerized to form the polyester Dacron?
    a) Propylene and para HO—(C_6H_4)—OH b) Benzoicacid and ethanol
    c) Terephthalic acid and ethylene glycol d) Benzoic acid and para HO—(C_6H_4)—OH
40. Teflon and neoprene are the examples of
    a) copolymers b) monomers c) homopolymers d) condensation polymers
41. Caprolactam is used for the manufacture of :
    a) teflon b) terylene c) nylon 6, 6 d) nylon 6
42. Which among the following is a cross-linked polymer?
    a) Polyesters b) Glycogens c) Melamine- formaldehyde d) Polyvinyl chloride
43. Which factor imparts the crystalline nature to a polymer like nylon?
    a) Strong intermolecular forces like hydrogen bonding between chains
    b) van der Waals forces between the polymeric chains
    c) Close packing of the chains due to ionic bonding between the chains
    d) Three-dimensional network of chains
44. Which of the following are thermoplastic polymers?
    a) Polythene, urea-formaldehyde, polyvinyls b) Bakelite, polythene, polystyrene
    c) Polythene, polystyrene, polyvinyls d) Urea-formaldehyde, polystyrene, bakelite
45. Polyethylene is obtained from calcium carbide.
    $CaC_2 + 2H_2O \longrightarrow Ca(OH)_2 + C_2H_2$
    $C_2H_2 + H_2 \longrightarrow C_2H_4$
    $nC_2H_4 \longrightarrow \{CH_2 - CH_2.\}n$
    Therefore, the amount of polyethylene obtained for 64 kg CaC_2 is
    a) 7 kg b) 14 kg c) 21 kg d) 28 kg
46. Bakelite is prepared by the reaction between _____.
    a) urea and formaldehyde b) ethylene glycol c) phenol and fonnaldehyde
    d) tetramethylene glycol
47. Choose the correct statements from the following
    a) Nylon 2-nylon 6 is a polyamide copolymer of alanine
    b) 3-Hydroxy pentanoic acid is a monomer of Nylon 2-nylon 6
    c) PHBV can never be used in the manufacture of orthopaedic devices d) None of these
48. The difference in the densities of low density (LDP) and high density polymers (HDP) is due to the fact that

a)

LDP are highly branched structures while HDP consists of closely packed linear molecules

b) LDP are linear chains while HDP are branched chains of polythene

c) both LDP and HDP are unbranched linear chains with different lengths

d) at high temperature, the density of polymer is reduced

49. Assertion: Dacron is formed by step growth polymerisation of monomer units.
Reason: Dacron fibre is crease resistant.
a) If both assertion and reason are true and reason is the correct explanation of assertion

b) If both assertion and reason are true but reason is not the correct explanation of assertion

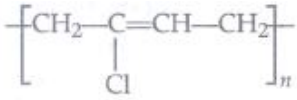
c) If assertion is true but reason is false d) If both assertion and reason are false

50. Nylon-6, 6 is a polyamide obtained by the reaction of _____ .
a) $COOH(CH_2)_4COOH + H_2NC_6H_4NH_2$ - (p) b) $COOH(CH_2)_4COOH + NH_2(CH_2)6NH_2$
c) $COOH(CH_2)_6COOH + NH_2(CH_2)_4NH_2$ d) $COOHC_6H_4COOH$- (p)+$NH_2(CH_2)_6NH_2$

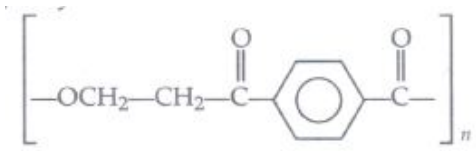
51. Which of the following is a biodegradable synthetic polymer?
a) Aliphatic polyesters b) PHBV c) Nylon-2-nylon-6 d) All of these

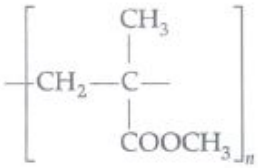
52. Terylene is a condensation polymer of ethylene glycol and _____.
a) benzoic acid b) Phthalic acid c) salicylic acid d) terephthalic acid

53. Which of the following is not correctly matched?

a) Neoprene : 

b) Nylon-6,6 : 

c) Terylene : 

d) PMMA : 

54. Of the following which one is classified as polyester polymer?
a) Terylene b) Bakelite c) Melamine d) Nylone-6, 6

55. Lowdensity polythene (LDP) is used in the insulation of electricity carrying wires and manufacture of flexible pipes and squeeze bottles because
a) it is tough, hard and rigid

b) it is chemically inert, tough, flexible and poor conductor of electricity

c) it is very tough, good conductor of electricity and flexible

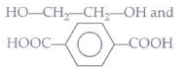
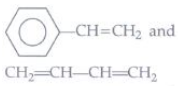
d) it is chemically inert, very soft, water absorbent and poor conductor of heat

56. During addition polymerisation of ethene molecules, the initiator like benzoyl peroxide, acetyl peroxide, tert-butyl peroxide, etc. are added. Their function is to
a) ensure anti-Markownikoff's addition of molecules to form polymer
b) give cations during the reaction which join together to form bigger molecules
c) decrease the temperature of the reaction mixture
d) generate free radical which adds to the monomer to give bigger free radical.

57. Which one of the following is not a condensation polymer?
a) Melamine b) Glyptal c) Dacron d) Neoprene

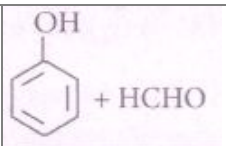
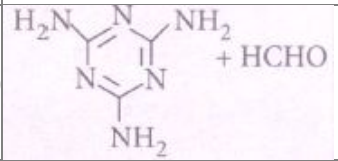
58. Which of the following polymers is not correctly matched?
    a) Formation of dacron - Step growth polymerisation
    b) Formation of polytetratluoroethene - Step growth polymerisation
    c) Formation of polythene - Chain growth polymerisation in presence of benzoyl peroxide
    d) Formation of polyacrylonitrile - Chain growth polymerisation in presence of peroxide

59. Assertion: Most of the synthetic polymers are nonbiodegradable.
    Reason: During polymerisation, the polymers become toxic and non-biodegradable.
    a) If both assertion and reason are true and reason is the correct explanation of assertion
    b) If both assertion and reason are true but reason is not the correct explanation of assertion
    c) If assertion is true but reason is false d) If both assertion and reason are false

60. Which one of the following sets forms the biodegradable polymer?
    a) CH_2 == CH—CN and CH_2 == CN-CH == H_2N-CH_2-COOH and H_2N-(CH_2h-COOHCH_2
    b) $H_2N—CH_2—COOH$ and $H_2N—(CH_2)_5—COOH$ c)  d) 

61. cis-Polyisoprene possesses elastic property because
    a) it is soft and soluble in non-polar solvent b) it is unsaturated and porous
    c) it has a coiled structure and chains held together by weak van der Waals forces
    d) it has a fibrous structure and reactive sites at various double bonds

62. Match the polymers given in column I with monomers in column II and mark the appropriate choice.

Column I		Column II	
(A)	Melamine-formaldehyde polymer	(i)	
(B)	Bakelite	(ii)	$CH_2 = \overset{Cl}{\overset{\vert}{C}} - CH = CH_2$
(C)	Neoprene	(iii)	$CH_2 = \overset{CH_3}{\overset{\vert}{C}} - CH = CH_2$
(D)	Natural rubber	(iv)	

    a) (A) ⟶ (iv), (B) ⟶ (ii), (C) ⟶ (i), (D) ⟶ (iii) b) (A) ⟶ (i), (B) ⟶ (iii), (C) ⟶ (iv), (D) ⟶ (ii)
    c) (A) ⟶ (iv), (B) ⟶ (i), (C) ⟶ (ii), (D) ⟶ (iii) d) (A) ⟶ (ii), (B) ⟶ (iv), (C) ⟶ (iii), (D) ⟶ (i)

63. Assertion: Rayon is a semi-synthetic polymer and is taken as a better choice than cotton fabric.
    Reason: Mechanical and aesthetic properties of cellulose can be improved by acetylation.
    a) If both assertion and reason are true and reason is the correct explanation of assertion
    b) If both assertion and reason are true but reason is not the correct explanation of assertion
    c) If assertion is true but reason is false d) If both assertion and reason are false

64. Which one of the following statements is wrong?

a) PVC stands for poly vinyl chloride b) PTFE stands for teflon

c) PMMA stands for polymethyl methyl acrylate d) Buna-S stands for natural rubber

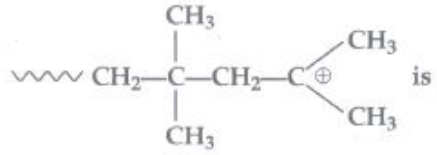
65. $CF_2=CF_2$ is monomer of :

a) teflon b) orlon c) polythene d) nylon-6

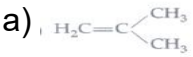
66. Glycogen, a naturally occurring polymer stored in animals is a:

a) monosaccharide b) disaccharide c) trisaccharide d) polysaccharide

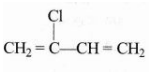
67. The monomer of the polymer :



is

a)  b) $CH_3CH{=}{=}CHCH_3$ c) $CH_3CH{=}{=}CH_2$ d) $(CH_3)_2C{=}{=}C(CH_3)_2$

68. Which one of the following monomers gives the polymer neoprene on polymerization?

a) $CF_2=CF_2$ b) $CH_2=CHCl$ c) $CCl_2=CCl_2$ d) 

69. ~~[$NH(CH_2)_6NHCO(CH_2)_4CO]_n$~~ is a :

a) homopolymer b) copolymer c) addition polymer d) thermosetting polymer

70. On complete hydrogenation, natural rubber produces

a) ethylene-propylene copolymer b) vulcanised rubber c) polypropylene

d) polybutylene.

71. The monomers of biodegradable polymer, nylon 2-nylon 6 are

a) glycine + adipic acid b) glycol + phthalic acid c) phenol + urea

d) glycine + amino caproic acid

72. Which of the following statements is false?

a) Artificial silk is derived from cellulose. b) Nylon-6, 6 is an example of elastomer.

c) The repeat unit in natural rubber is isoprene.

d) Both starch and cellulose are polymers of glucose.

73. Match the column I with column II and mark the appropriate choice:

Column I		Column II	
(A)	Buna-S	(i)	Thermosetting
(B)	Polyamides	(ii)	Fibres
(C)	Polyvinyls	(iii)	Elastomer
(D)	Urea-formaldehyde	(iv)	Thermoplastics

a) (A) ⟶ (iv), (B) ⟶ (iii), (C) ⟶ (i), (D) ⟶ (ii) b) (A) ⟶ (ii), (B) ⟶ (i), (C) ⟶ (iii), (D) ⟶ (iv)

c) (A) ⟶ (iii), (B) ⟶ (ii), (C) ⟶ (iv), (D) ⟶ (i) d) (A) ⟶ (i), (B) ⟶ (iv), (C) ⟶ (ii), (D) ⟶ (iii)

74. Assertion: Buna-S is a copolymer.

Reason: Buna-S is formed by condensation reaction between two different monomers.

a) If both assertion and reason are true and reason is the correct explanation of assertion

b) If both assertion and reason are true but reason is not the correct explanation of assertion

c) If assertion is true but reason is false d) If both assertion and reason are false

75. Few polymers are matched with their uses. Point out the wrong match.

a) Polyesters - Fabric, tyre cords, safety belts b) Nylon 6 - Ropes, tyre cords, fabrics

c) Bakelite - Packaging industry, lubricant d) Teflon - Oil seals, gaskets, non-stick utensils

76. Which of the following is a natural polymer?

a) Poly (Butadiense-acrylonitrile) b) cis-1, 4-polyisoprene c) poly (Butadiense-stysene)

d) polybutadiene

77. Assertion: PHBV is a biodegradable polymer.

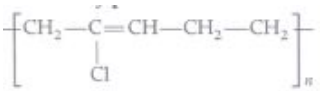
Reason: PHBV is an aliphatic polyester.

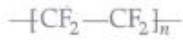
a) If both assertion and reason are true and reason is the correct explanation of assertion

b) If both assertion and reason are true but reason is not the correct explanation of assertion

c) If assertion is true but reason is false d) If both assertion and reason are false

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

a) Neoprene:  b) Terylene: 

c) Nylon 6,6:  d) Teflon: 

79. Match the column I with column II and mark the appropriate choice:

Column I		Column II	
(A)	Natural polymer	(i)	Rayon
(B)	Addition polymer	(ii)	Bakelite
(C)	Copolymer	(iii)	Silk
(D)	Semi-synthetic polymer	(iv)	Neoprene

a) (A) ⟶ (i), (B) ⟶ (ii), (C) ⟶ (iv), (D) ⟶ (iii) b) (A) ⟶ (iii), (B) ⟶ (iv), (C) ⟶ (ii), (D) ⟶ (i)

c) (A) ⟶ (ii), (B) ⟶ (iii), (C) ⟶ (i), (D) ⟶ (iv) d) (A) ⟶ (iv), (B) ⟶ (i), (C) ⟶ (iii), (D) ⟶ (ii)

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

a) Vulcanised rubber b) Bakelite c) Melamine d) Teflon

81. Synthetic biopolymer, PHBV is made up of the following monomers,

a) 3-hydroxybutanoic acid + 3-hydroxypentanoic acid

b) 2-hydroxybutanoic acid + 2- hydroxypropanoic acid

c) 3-chlorobutanoic acid + 3-chloropentanoic acid

d) 2-chlorobutanoic acid + 3-methylpentanoic acid.

82. Natural rubber is a polymer of _____.

a) butadiene b) ethyne c) styrene d) isoprene

83. Out of the following which one is classified as polyester polymer?

a) Terylene b) Bakelit c) Melamine d) Nylon-6,6

84. Nylon is an example of?

a) Polysaccharide b) Polyamide c) Polythene d) Polyester

85. Polymer which has amide linkage is:

a) nylon-6, 6 b) terylene c) teflon d) bakelite

86. Which of the following polymers of glucose is stored by animals?

a) Cellulose b) Amylose c) Amylopectin d) Glycogen

87. Assertion: Bakelite is a thermosetting polymer.
Reason: Bakelite is formed by cross-linking of novo lac and formaldehyde.
a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false d) If both assertion and reason are false

88. Formation of nylons and polyesters are called step growth polymerisation because
a) the polymers are formed by adding a monomer step by step
b)
the polymers are formed by condensation and monomers are joined by loss of simple molecules like water
c) the monomers used for condensation are unsaturated molecules
d)
the polymers are formed by addition of a large number of free radicals formed by monomers

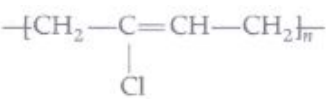
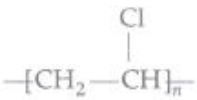
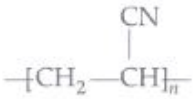
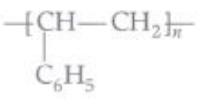
89. Mark the incorrect use of the polymer.
a) High density polythene - Buckets, pipes b) Nylon 6, 6 - Ropes, bristles for brushes
c) Orlon - Synthetic wool, carpets d) Glyptal - Electrical switches, combs

90. Match the column I with column II and mark the appropriate choice.

Column I		Column II	
(A)	PVC	(i)	Rubber
(B)	Condensation polymer	(ii)	Thermoplastic
(C)	Polysaccharide	(iii)	Dacron
(D)	Elastomer	(iv)	Natural polymer

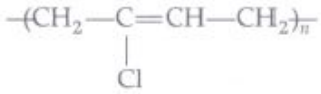
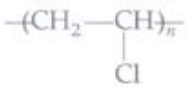
a) (A) ⟶ (ii), (B) ⟶ (iii), (C) ⟶ (iv), (D) ⟶ (i) b) (A) ⟶ (i), (B) ⟶ (ii), (C) ⟶ (iv), (D) ⟶ (iii)
c) (A) ⟶ (iii), (B) ⟶ (iv), (C) ⟶ (i), (D) ⟶ (ii) d) (A) ⟶ (iv), (B) ⟶ (i), (C) ⟶ (iii), (D) ⟶ (ii)

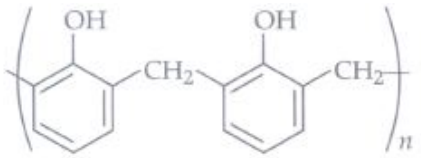
91. Which one of the followng statements is not true?
a)
In vulcanization the formation of sulphur bridges between different chains make rubber harder and stronger.
b) Natural rubber has trans-configuration at every double bond
c) Buna-S is a copolymer of butadiene and styrene
d) Natural rubber is a 1, 4-polymer of isoprene

92. Which of the following structures represents neoprene polymer?
a) 
b) 
c) 
d) 

93. Which of the following alkenes is least reactive towards anionic polymerisation?
a) $CH_2 = CHCH_3$ b) $CH_2 = CF_2$ c) CH_2 = Proverbs d) $CH_2 = CHC_6H_5$

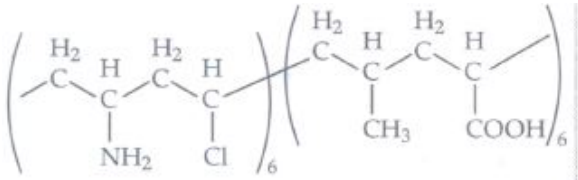
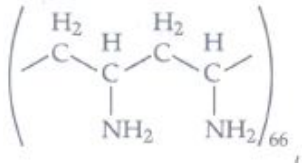
94. Which one of the following is an example of thermosetting polymer?

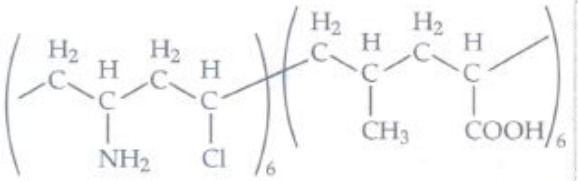
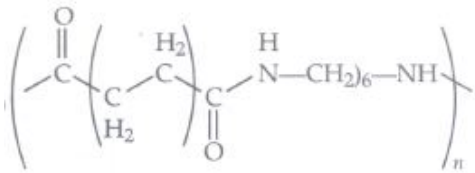
a)  b)  c) 

d) 

95. Assertion: The physical properties of natural rubber can be improved by vulcanisation.
Reason: Neoprene is the monomer of natural rubber.
a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false d) If both assertion and reason are false

96. Which one of the following structures represents nylon 6, 6 polymer?

a)  b) 

c)  d) 

97. The Bakelite is prepared by the reaction between :
a) phenol and formaldehyde b) tetramethylene glycol c) urea and formaldehyde
d) ethylene glycol

98. Which of the following polymer is biodegradable?

a) $\left(-CH_2 - \underset{CI}{\underset{|}{C}} = CH - CH_2 - \right) n$

b) $\left(-CH_2 - CH = CH - CH_2 - CH_2 - \overset{CN}{\overset{|}{C}}H - \right) n$

c) $\left(-O - \underset{CH_3}{\underset{|}{C}}H - CH_2 - \underset{O}{\underset{||}{C}} - O - \underset{CH_2CH_3}{\underset{|}{C}}H - CH_2 - \underset{O}{\underset{||}{C}} - \right) N$

d) $\left(-\overset{H}{\overset{|}{N}} - (CH_2)_6 - \overset{H}{\overset{||}{N}} - \overset{O}{\overset{||}{C}} - (CH_2)_4 - \overset{O}{\overset{||}{C}} - \right) N$

99. In vulcanization of rubber
a) sulphur reacts to form a new compound b) sulphur cross-links are introduced
c) sulphur forms a very thin protective layer over rubber d) all statements are correct

100. Which of the following is a condensation polymer?
a) Teflon b) PVC c) Polyester d) Neoprene

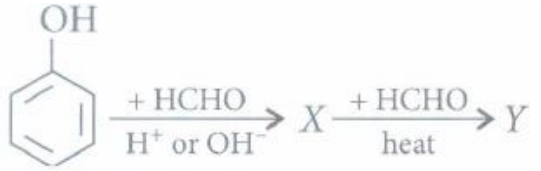
101. Which of the following polymers are used as fibre?
a) Nylon b) Polytetra fluoroethane c) Terylene d) Buna-S

102. Which of the following is not true for thermoplastic polymers?
a) Thermoplastics are linear polymers b) They soften and melt on heating
c) Molten polymer can be remoulded into any shape
d) They have cross-linkages which break on heating

103. Which of the following is not a semi-synthetic polymer?
a) cis-Polyisoprene b) Cellulose nitrate c) Cellulose acetate d) Vulcanised rubber

104. The monomers used in addition polymerisation through free radical should be very pure because
a) the traces of impurities act like inhibitors resulting in short chain polymers
b) the impurities result in formation of different products c) the polymer formed is impure
d) catalyst does not function in presence of impurities

105. Identify X and Y in the given polymerisation reactions.



a) X = Bakelite, Y = Novolac b) X = Novolac, Y = Melamine
c) X = Bakelite, Y = Melamine d) X = Novolac, Y = Bakelite

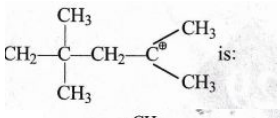
106. Which of the following represents chloroprene, the monomer of neoprene?
a) CH_2=CH-CH=CH_2Cl b) $CH_2 = \underset{Ch_3}{\underset{|}{C}} - CH = CHCI$
c) $CH_2 = \underset{CI}{\underset{|}{C}} - CH = CH_2$ d) $CH_2 = \underset{CH_3}{\underset{|}{C}} - \underset{CI}{\underset{|}{C}} = CH_2$

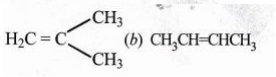
107. Arrange the following polymers in an increasing order of intermolecular forces; fibre, plastic, elastomer.
a) Elastomer < Fibre < Plastic b) Elastomer < Plastic < Fibre
c) Plastic < Elastomer < Fibre d) Fibre < Elastomer < Plastic

108. Assertion: The correct order of increasing molecular forces in the given polymers is: Buna-S, Polythene, Nylon-6, 6.
Reason: The properties of polymers depend upon the molecular forces.
a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false d) If both assertion and reason are false

109. Glyptal polymer is obtained by the following monomers,
a) malonic acid + ethylene glycol b) phthalic acid + ethylene glycol
c) maleic acid + formaldehyde d) acetic acid + phenol.

110. The monomer of the polymer;



a)  b) $CH_3CH=CHCH_3$ c) $CH_3CH=CH_2$ d) $(CH_3)_2C=C(CH_3)_2$

111. Fill up the blanks with suitable reagents to show synthesis of polyvinyl chloride.

$$CH \equiv CH \xrightarrow{X} CH_2 = CHCI \xrightarrow{Y} \left(CH_2 - CHCI - \overset{CI}{\overset{|}{C}}H \right) n$$

a) X = HCl, $HgCl_2$; Y = Polymerisation, peroxide

b) X = Cl_2, $FeCl_3$; Y = Polymerisation, heat c) X = HCl, CuCl; Y= H_2O, H^+

d) X = HCl, $HgCl_2$; Y = Pt, high pressure

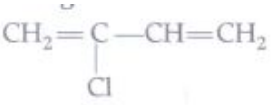
112. Assertion: In vulcanisation of rubber, sulphur cross- links are introduced.
Reason: Vulcanisation is a free radical initiated chain reaction.

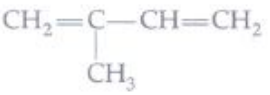
a) If both assertion and reason are true and reason is the correct explanation of assertion

b) If both assertion and reason are true but reason is not the correct explanation of assertion

c) If assertion is true but reason is false d) If both assertion and reason are false

113. Which is the monomer of neoprene in the following?

a)  b) CH_2 == CH—C ≡ CH c) CH_2 == CH—CH ≡ CH_2

d) 

114. Among cellulose, poly(vinylchloride), nylon and natural rubber, the polymer in which the intermolecular force of attraction is weakest is

a) nylon b) poly(vinyl chloride) c) cellulose d) natural rubber

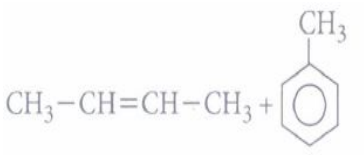
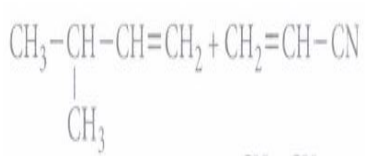
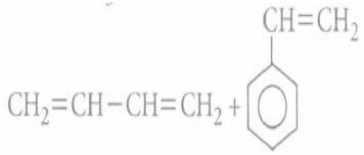
115. Match the column I with column II and mark the appropriate choice.

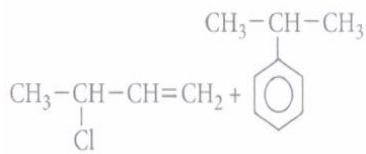
Column I		Column II	
(A)	Buna-N	(i)	Phthalic acid and ethylene glycol
(B)	Nylon-6,6	(ii)	Terephthalic acid and ethylene glycol
(C)	Dacron	(iii)	Hexamethylene diamine and adipic acid
(D)	Glyptal plastic	(iv)	Acrylonitrile and butadiene

a) (A) ⟶ (ii), (B) ⟶ (iii), (C) ⟶ (iv), (D) ⟶ (i) b) (A) ⟶ (i), (B) ⟶ (ii), (C) ⟶ (iv), (D) ⟶ (iii)

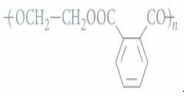
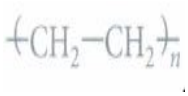
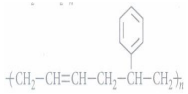
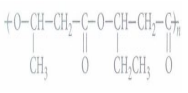
c) (A) ⟶ (iii), (B) ⟶ (iv), (C) ⟶ (i), (D) ⟶ (ii) d) (A) ⟶ (iv), (B) ⟶ (iii), (C) ⟶ (ii), (D) ⟶ (i)

116. The correct structure of monomers of buna-S is:

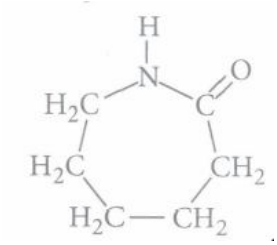
a)  b)  c) 

d) 

117. In which of the following polymers ethylene glycol is one of the monomer units?

a)  b)  c)  d) 

118. Which of the following polymers can be formed by using the following monomer unit?



a) Nylon-6, 6 b) Nylon-2-nylon-6 c) Melamine polymer d) Nylon-6

119. Which of the following is not a characteristic of thermosetting polymers?

a) Linear or slightly branched long chain polymers

b) Heavily branched and cross-linked polymers c) Become infusible on moulding

d) Cannot be remoulded or reused on heating

120. Dacron is an example of

a) polyamides b) polypropenes c) polyacrylonitrile d) polyesters

121. Which of the following statements is not true about low density polythene?

a) Tough b) Hard c) Poor conductor of electricity d) Highly branched structure

122. Which one of the following is used to make 'non-stick' cookware?

a) Poly-ethylene terephthalate b) Polytetrafluoroethylene c) PVC d) Polystyrene

123. Biodegradable polymer which can be produced from glycine and aminocaproic acid is: _____.

a) PHBV b) Buma-N c) Nylon 6,6 d) Nylon-2-nylon 6

124. Assertion: Network polymers are thermosetting.

Reason: Network polymers have high molecular mass.

a) If both assertion and reason are true and reason is the correct explanation of assertion

b) If both assertion and reason are true but reason is not the correct explanation of assertion

c) If assertion is true but reason is false d) If both assertion and reason are false

125. Which of the following is not true about polymers?

a) Polymers are high molecular mass macromolecules

b) Polymers may be of natural or synthetic origin

c) Condensation polymers are made up of one type of monomers only

d) They have high viscosity and do not carry any charge

126. Match the column I with column II and mark the appropriate choice:

Column I		Column II	
(A)	Raincoats, hand bags	(i)	PHBV
(B)	Laminated sheets	(ii)	PVC
(C)	Television cabinets	(iii)	Urea-formaldehyde
(D)	Orthopaedic devices	(iv)	Polystyrene

a) (A) ⟶ (i), (B) ⟶ (ii), (C) ⟶ (iii), (D) ⟶ (iv) b) (A) ⟶ (iv), (B) ⟶ (i), (C) ⟶ (ii), (D) ⟶ (iii)
c) (A) ⟶ (ii), (B) ⟶ (iii), (C) ⟶ (iv), (D) ⟶ (i) d) (A) ⟶ (iii), (B) ⟶ (iv), (C) ⟶ (i), (D) ⟶ (ii)

127. Identify the type of polymer.
(i) - A - A - A - A - A - A -
(ii) - A - B - B - A - A - A - B - A -
a) (i) Homopolymer, (ii) Copolymer b) (i) Natural polymer, (ii) Synthetic polymer
c) (i) Linear polymer, (ii) Branched polymer d) (i) Fibre, (ii) Elastomer

128. Cellulose is polymer of :
a) glucose b) fructose c) ribose d) sucrose

129. $[NH(CH_2)_6NHCO(CH_2)_4CO]_n$ is a _____.
a) addition polymer b) thermosetting polymer c) homopolymer d) copolymer

130. In elastomer, the intermolecular forces are _____.
a) Strong b) Weak c) nil d) none of the above