CHEMISTRY

BOOKS - GR BATHLA & SONS CHEMISTRY (HINGLISH)

POLYMERS

Only One Correct Answer Q 1 To Q 25

1. Bakelite is the condensation polymer of:

A. C_6H_5OH and caprolactum

B. HCHO and phthalic acid

C. C_6H_5OH and HCHO

D. HCHO and ethylene glycol

Answer: C

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2. If $N_1, N_2, N_3, \ldots\ldots$ are the number of molcules with molecular masses $M_1, M_2, M_3, \ldots$ respectively ,then mass average molar mass is expressed as:

A. $\frac{\Sigma N_i M_i^2}{\Sigma N_i M_i}$

B. $\frac{\Sigma N_i M_i}{\Sigma N_i}$

C. $\left(\Sigma \frac{M_i^2}{\Sigma N_i} \right.$

D. $\frac{\Sigma N_i M_i}{\Sigma M_i}$

Answer: A

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3. Which of the following is not an example of addition polymer?

A. Polystyrene

B. Polyethylene

C. Polypropylene

D. Dacron

Answer: D

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4. Buna-S is obtained by the copolymerisation of butadiene and:

A. Chloroprene

B. styrene

C. acrylonitrile

D. adipic acid

Answer: B

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5. Melmac is a polymer of melamine and

A. glycerol

B. formaldehyde

C. cyclohexane

D. caprolactum

Answer: B

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6. Which of the following is a condensation polymer?

A. Polystyrene

B. PAN

C. Neprene

D. Polyethylene terephthalate

Answer: D

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7. Terylene is a polymer of:

A. Adipic acid and hexamethylene di amine

B. terephthalic acid and ethylene glycol

C. phenol and formaldehyde

D. vinyl cyanide

Answer: B

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8. Caprolactum is one of the intermediate for preparing nylon-6. Which of the following can produce caprolactum?

A. Formaldehyde

B. Cyclohexane

C. Benzene

D. Ethylene glycol

Answer: B

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9. The monomer unit of PVC is:

A. vinyl chlroide

B. ethylene

C. chloroprene

D. acrylonitrile

Answer: A

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10. Glyptal is a polymer of

A. ethylene glycol

B. ethylene glycol and phthalic acid

C. ethylene glycol and adipic acid

D. caprolactum

Answer: B

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11. Nylon-66 is obtained from:

A. Hexamethylene diamine and adipic acid

B. Phenol and formaldehyde

C. Propylene and adipic acid

D. Adipic acid and phthalic acid

Answer: A

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12. Which of the following is a natural polymer?

A. Bakelite

B. Cellulose

C. PVC

D. Nylon

Answer: B

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13. Which one is a synthetic polymer?

A. Starch

B. Silk

C. protein

D. Neoprene

Answer: D

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14. Natural rubber is:

A. Polyisoprene

B. Polyvinyl chloride

C. Polychloroprene

D. Polyfluoroethylene

Answer: A

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15. The monomer unit of polyethene is:

A. $CF_2 = CF_2$

B. $CH_2 = CH_2$

C. $CH_2 = CHCl$

D. $CH_2 = CHCN$

Answer: B

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16. Which of the following in not a condensation polymer?

A. Nylon-66

B. PTFE

C. Dacron

D. Glyptal

Answer: B

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17. Which of the following is common example of fibres?

A. Bakelite

B. Buna-S

C. Nylon-66

D. PVC

Answer: C

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18. In vulcanisation of rubber,

A. sulphur reacts to form new compound

B. sulphur cross-links are introduced

C. sulphur forms a very thin protective layer over rubber

D. all the statements are correct

Answer: B

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19. The weakest interparticle forces are present in :

A. thermosetting polymers

B. themoplastic polymers

C. fibres

D. elastomers

Answer: D

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20. Which of the following is an example of co-polymer?

A. Buna-S

B. PAN

C. Polythene

D. PTFE

Answer: A

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21. Polyacrylonitile is an exmaple of:

A. addition polymer

B. condensation polymer

C. natural polymer

D. None of these

Answer: A

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22. $n(CF_2 = CF_2) \xrightarrow[Heat]{(NH_4)_2S_2O_8} X$ Here , X is:

A. PVC

B. PMMA

C. PAN

D. none of these

Answer: D

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23. Caprolactum is used to prepare which of the following polymer?

A. Nylon-66

B. Malamine

C. Nylon-6

D. PMMA

Answer: B

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24. Artificial silk is:

A. nylon-6

B. rayon

C. nylon-66

D. none of these

Answer: C

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25. Chemical name of melamine is:

A. 1,3,5-Triazine-2,4,6-triamine

B. 2-amino-1,3,5-triazine

C. 2,4,6-Triamino-1,3,5-triazine

D. 1,3,5-triamino-2,4,6-triazine

Answer: A

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Only One Correct Answer Q 26 To Q 50

1. Which of the following is coated as a thin layer on the inner side of non-stick pans?

A. Bakelite

B. PVC

C. Teflon

D. Polypropylene

Answer: C

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2. The chemical name of isoprene is:

A. 2-methyl-1,3-butadine

B. 2-chloro, 1,3-butadiene

C. 2-methoxypropene

D. none of these

Answer: A

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3. which of the following is chain growth polymer?

A. Glyptal

B. Nylon-66

C. Nylon-6

D. Polypropylene

Answer:

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4. Which of the following is not a polyamide?

A. Leather

B. Natural rubber

C. Wool

D. Nylon-66

Answer: B

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5. Which of the following is not a biopolymer?

A. Starch

B. Rubber

C. Proteins

D. Nucleic acids

Answer: B

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6. Which polymer is generally used in carry bags?

A. Polyester

B. Bakelite

C. Polyethylene

D. Alkyd resin

Answer: D

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7. The polymer obtained from condensation polymerisation of sebacic acid and hexamethylenediamine is called:

A. terelene

B. nylon-6

C. nylon-610

D. dacron

Answer: C

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8. Caprolactum can be obtained from:

A. benzaldehyde

B. cyclohexanone

C. benzophenone

D. Adipic acid

Answer: B

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9. Vulcacnised rubber resists:

A. Wear and tear due to friction

B. cryogenic temperature

C. high temperature

D. action of acids

Answer: A

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10. A polymer of prop-2-enenitrile is called:

A. saran

B. orlon

C. decron

D. tetron

Answer: B

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11. Whichof the following polymer does not exist in geometrical isomeric forms?

A. Polyisoprene

B. Polyacetylene

C. Polybutadiene

D. Polypropylene

Answer: D

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12. Polymers of the type, $X - M_n - Y$ are called:

A. Telomers

B. copolymers

C. elastomers

D. invertomers

Answer: A

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13. Which of the folowing are bipolymers?

A. Nylon

B. Leather

C. Bakelite

D. Orlon

Answer: B

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14. Which of the following is condensation polymer?

A. Polypropylene

B. PMMA

C. Glyptal

D. Teflon

Answer: C

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15. Polymerization does not occur through intermediate formation of:

A. carbocations

B. carbonions

C. free radicals

D. carbenes

Answer: D

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16. Which of the following polymer does not contain 1,3-butadiene as one of the monomers?

A. Butyl rubber

B. Nitrile rubber

C. ABS rubber

D. SBR

Answer: A

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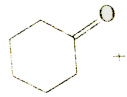
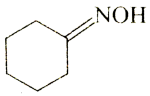
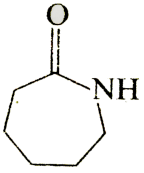
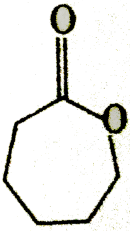
42.  $+ NH_2OH \longrightarrow A \xrightarrow{H_2SO_4} B$ The product 'B' is :

17. The product 'B" is:

A. (a) 

B. (b) 

C. (c) 

D. (d) 

Answer: C

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18. Which of the following is not thermoplastics?

A. Cellulose acetate

B. Nitrocellulose

C. Polyvinyl acetate

D. Phenol formaldehyde polymer

Answer: D

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19. Which of the following is obtained by condensation polymerisation?

A. Polyethene

B. Teflon

C. Phenol formaldehyde resin

D. Nitrile rubber

Answer: C

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20. Natural rubber is a polyer of:

A. ethylene

B. vinyl chloride

C. phenol

D. isoprene

Answer: D

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21. Synthetic polymer prepared from caprolactum is known as:

A. nylon-610

B. teflon

C. terylene

D. Nylon-6

Answer: D

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22. Synthetic rubber (Neoprene) is:

A. polyster

B. polyamide

C. polysaccharide

D. Polyhalodiene

Answer: D

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23. Which of the following is a polyamide?

A. Nylon

B. Orlon

C. Teflon

D. Terylene

Answer: A

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24. The turbidity of a polymer solution measures:

A. a light absorbed by solution

B. light transmitted by the solution

C. light scattered by the solution

D. none of these

Answer: C

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25. Peptide bond is a key feature in:

A. polysaccharide

B. Proteins

C. Nucleotide

D. Vitamins

Answer: B

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Only One Correct Answer Q 51 To Q 75

1. Synthetic human hair wigs are made from a copolymer of vinyl chloride and acrylonitrile, and is called:

A. PVC

B. polyacrylonitrile

C. cellulose

D. dynel

Answer: D

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2. Synthetic polymer which resembler natural rubber is:

A. neoprene

B. chloroprene

C. glyptal

D. nylon

Answer: A

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3. Natural rubber is a polymer of:

A. trans-isoprene

B. cis-isoprene

C. co-cis and trans-isoprene

D. none of these

Answer: B

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4. Orlon is a polymer of:

A. tetrafluoroethylene

B. acrylonitrile

C. ethanoic acid

D. benzene

Answer: B

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5. Which of the following fibres are made of polyamides?

A. Dacron

B. Orlon

C. Nylon

D. Rayon

Answer: C

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6. Bakelite is a product of the reaction between:

A. formaldehyde and NaOH

B. aniline and urea

C. phenol and methanal

D. phenol and chloroform

Answer: C

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7. The raw material to form nylon is:

A. Adipic acid

B. Butadiene

C. isopreme

D. ethylene

Answer: A

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8. The widely used PVC is a polymerised product of:

A. $CH_2 = CH_2$

B. $CH_2 = CCl(2)$

C. CH_2ClCH_2Cl

D. $CH_2 = CHCl$

Answer: D

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9. Which is an exmaple of thermosetting polymer?

A. Polythene

B. Neoprene

C. PVC

D. Bakelite

Answer: D

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10. Bakelinte is obtained from phenol by reacting with:

A. acetaldehyde

B. acetal

C. formaldehyde

D. cholrobenzene

Answer: C

11. The catalyst used in the manufacture of polyethene of Ziegler method is:

A. lithium tetrachloride and triphenyl aluminium

B. titanium tetrachloride and trimethyl aluminium

C. titanium oxide

D. titanium isoperoxide

Answer: B

12. Which one 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

Answer: B

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13. The product of addition polymerization reaction is:

A. PVC

B. nylon

C. terylene

D. polyamide

Answer: A

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14. An example of natural biopolymer is :

A. teflon

B. nylon-66

C. rubber

D. DNA

Answer: D

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15. Tetrafluoroethene is the monomer of:

A. polyethene

B. PVC

C. teflon

D. nylon-66

Answer: C

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

A. Bakelite

B. Polyethylene

C. Teflon

D. PVC

Answer: A

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17. Ebonite is:

A. natural rubber

B. synthetic rubber

C. highly vulcanized rubber

D. polypropene

Answer: C

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18. Bakelite is prepared by the reaction between:

A. urea and formaldeyde

B. tetra methylene glycol and hexamethylene isocyanate

C. phenol and formaldehyde

D. ethylene glycol and dimethyl terephthalate

Answer: C

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19. Among the following polymers, the strongest molecular forces are present in:

A. elastomers

B. fibres

C. thermoplastics

D. thermosetting polymers

Answer: D

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20. PMMA is the polymer of:

A. methylmethacrylate

B. methacrylate

C. methylacrylate

D. ethylacrylate

Answer: A

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21. The bakelite is made from phenol and formaldehyde. The initial reaction between the two compounds is an exmaple of:

A. aromatic electrophilic substition

B. aromatic nucleophilic substitution

C. free radical reaction

D. aldol reaction

Answer: A

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22. Glyptal polymer is obtained from glycerol on reacting with:

A. malonic acid

B. phthalic acid

C. maleric acid

D. acetic acid

Answer: B

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23. Teflon is a polymer, monomer of which is:

A. difluroethane

B. monofluoroethane

C. tetrafluoroethene

D. tetrafluoroethane

Answer: C

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24. Which of the following is not an example of addition polymer?

A. Polyethene

B. Polystyrene

C. Neoprene

D. Terylene

Answer: D

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25. Which of the following is used to make nonstick cookware?

A. PVC

B. Polystyrene

C. Polyethylene (tetrephthalate)

D. Polyterafluoroethylene

Answer: D

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Only One Correct Answer Q 76 To Q 100

1. Which one is a polymer compound?

A. SO_2

B. CO_2

C. CH_4

D. PVC

Answer: D

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2. Example of addition polymer is:

A. buna-S

B. bakelite

C. nylon-6

D. malamac

Answer: A

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3. Copolymer is:

A. nylon-6

B. nylon-66

C. PMMA

D. polyethene

Answer: B

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4. Which of the following contains isoprene units?

A. Natural rubber

B. Nylon-66

C. Polyethlene

D. Dacron

Answer: A

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

A. Polyethylene

B. PVC

C. Nylon

D. Cellophane

Answer: D

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6. What is not true about polymers?

A. Polymers do not carry any charge

B. Polymers have high viscosity

C. Polymers scatter light

D. Polymers have low molecular weights

Answer: D

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7. On the basis of the mode of their formation the polymers can be classified:

A. as addition polymers only

B. as condensation polymers only

C. as copolymers

D. both as addition and condensation polymers

Answer: D

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8. Natural rubber is a polymer of:

A. Butadiene

B. ethylene

C. styrene

D. isoprene

Answer: D

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9. Terylene is a condensation polymer of ethylene glycol and

A. benzonic acid

B. phthalic acid

C. salicylic acid

D. terephthalic acid

Answer: D

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10. Which one of the following is not an exmaple of chain growth polymer?

A. Neoprene

B. Buna-S

C. PMMA

D. Glyptal

Answer: C

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11. Ziegler-Natta catalyst is:

A. $K[PtCl_3(C_2H_4)]$

B. $(Ph_3P)_3RhCl$

C. $Al_2(C_2H_5)_6 + TiCl_4$

D. $Fe(C_5H_5)_2$

Answer: C

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12. Nylon-66 is made by using:

A. Phenol

B. benzaldehyde

C. adipic acid

D. succinic acid

Answer: C

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13. The process involving heating of rubber with sulphur is called:

A. galvanisaton

B. vulcanization

C. bessemerisation

D. sulphonation

Answer: B

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14. Terylene is made by polymerization of terephthalic acid with:

A. ethylene glycol

B. phenol

C. ethanol

D. catechol

Answer: A

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15. Teflon, styron and neoprene are all:

A. copolymers

B. condensation polymers

C. homopolymers

D. monomers

Answer: C

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16. Interparticle forces present in nylon-66 are:

A. van der waals

B. hydrogen bonding

C. dipole-dipole interactions

D. none of these

Answer: B

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17. $F_2C = CF_2$ is a monomer of:

A. teflon

B. glyptal

C. nylon-6

D. buna-5

Answer: A

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18. Soft drinks and baby feeding bottles are generally made up of:

A. Polyester

B. polyurethane

C. polyurea

D. polyamide

Answer:

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19. Polymer used in bullet proof glass is:

A. PMMA

B. lexan

C. nomex

D. kevlar

Answer: B

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20. Which of the following is a constituent of nylon?

A. Adipic acid

B. Styrene

C. Teflon

D. None of these

Answer: A

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21. Caprolactum polymerises to give:

A. terylene

B. teflon

C. glyptal

D. nylon-6

Answer: D

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22. Polyvinyl alcohol can be prepared by:

A. polymerization of vinyl alcohol

B. alkaline hydrolysis of polyvinyl acetate

C. Polymerization of acetylene

D. reaction of acetylene with H_2SO_4 in presence of $HgSO_4$

Answer: B

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23. Which of the following is a polyamide molecule?

A. Terylene

B. Rayon

C. Nylon-6

D. Polystyrene

Answer: C

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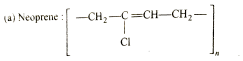
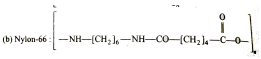
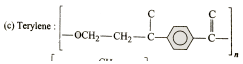
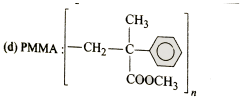
24. Which of the following is not correctly matched?

A. 

B. 

C. 

D. 

Answer: B

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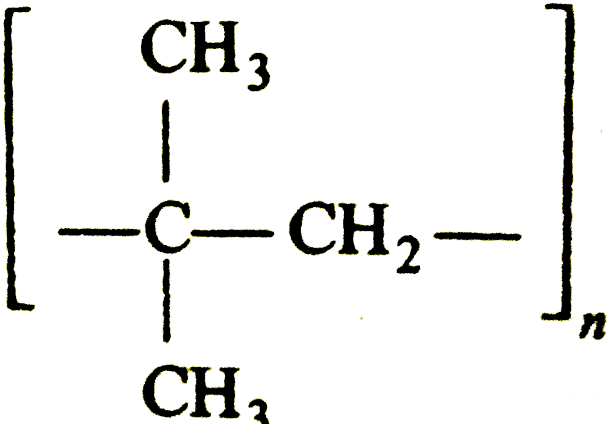
25. Monomer of



A. 2-methylpropene

B. styrene

C. propylene

D. ethene

Answer: A

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Only One Correct Answer Q 101 To Q 125

1. A condensation polymer among the following is:

A. dacron

B. PVC

C. polystyrene

D. teflon

Answer: A

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2. The catalyst used for the polymerization of olefins is:

A. Ziegler-Natta catalyst

B. Wikinson's catalyst

C. Pd-catalyst

D. Zeise's salt complex

Answer: A

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3. Which of the following is used in plants?

A. Terylene

B. Nylon

C. Glyptal

D. Chloroprene

Answer: C

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4. Polymer formation from monomers starts by:

A. condensation reaction between monomers

B. coordination reaction between monomers

C. conversion of monomer to monomer ions by protons

D. hydrolysis of monomers

Answer: A

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5. Cellulose acetate is a:

A. natural polymer

B. semisynthetic polymer

C. synthetic polymer

D. plasticiser

Answer: B

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6. Teflon is a polymer of:

A. tetrafluoroethylene

B. tetraiodoethylene

C. tetrabromoethylene

D. tetrachloroethylene

Answer: A

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7. Bakelite is a product formed from:

A. reaction of formaldehyde with phenol

B. reaction of polyethylene with phenol

C. reaction of polypropylene with acid

D. it is a natural product

Answer: A

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8. The components of nylon-66 are:

A. hexamethylene diamine and adipic acid

B. hexamethylene diamine and sebaic acid

C. hexamethylene only

D. none of the above

Answer: A

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9. Natural rubber is which type of polymer?

A. Condensation polymer

B. Addition polymer

C. Co-ordination polymer

D. none of these

Answer: B

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10. Which is a protein?

A. Nylon

B. Rayon

C. Natural silk

D. Terylene

Answer: C

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11. Natural rubber is a polymer of:

A. isoprene

B. styrene

C. ethylene

D. butadiene

Answer: A

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12. Which of the following has ester linkage?

A. Nylon

B. Bakelite

C. Terylene

D. PVC

Answer: C

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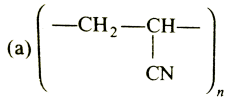
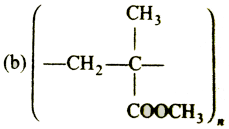
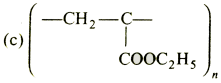
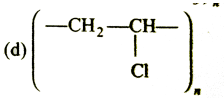
13. Acrilan is a hard, horny and a high melting mateirla.

Which of the following represents its structures?

A. 

B. 

C. 

D. 

Answer: A

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14. Nylon threads are made up of:

A. polyamide polymer

B. polyethylene polymer

C. polyvinyl polymer

D. polyester polymer

Answer: A

15. Bakelite is a polymer of:

A. HCHO and acetic acid

B. HCHO and phenol

C. C_2H_5OH and phenol

D. CH_3COOH and benzene

Answer: B

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16. Which of the following is a biodegradable polymer?

A. Cellulose

B. Polyethene

C. Polyvinyl chloride

D. Nylon-6

Answer: A

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17. Nylon-66 is not a:

A. Condensation polymer

B. co-polymer

C. polyamide

D. Homopolymer

Answer: D

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18. Which of the following is a chain growth polymer?

A. Starch

B. Nucleic acid

C. Polystyrene

D. Protein

Answer: C

Watch Video Solution

19. Orlon has a unit:

A. vinyl cyanide

B. acrolein

C. glycol

D. isoprene

Answer: A

Watch Video Solution

20. Which of the following is fully fluorinted polymer?

A. Neoprene

B. Teflon

C. Thiokol

D. PVC

Answer: B

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21. The substance used to harden the rubber for tyre manufacture is:

A. Wax

B. 1,3-butadiene

C. CaC_2

D. carbon black

Answer: D

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22. Give the monomers of nylon-66.

A. Butadiene and acrylonitrile

B. Ethylene glycol and terephthalic acid

C. Hexamethylenediamne and adipic acid

D. Melamine and formaldeyde

Answer: C

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23. The number of average molecular mass and mass average molecular mass of a polymer are respectively

30,000 and 40,000. They poly dispersity of the polymer is:

A. < 1

B. > 1

C. 1

D. 0

Answer: B

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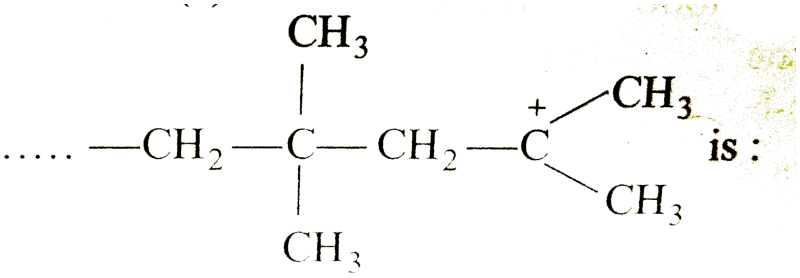
24. The monomer of the polymer .....



is :

A. $CH_3CH = CHCH_3$

B. $CH_3CH = CH_2$

C. $(CH_3)_2C = C(CH_3)_2$

D. $H_2C = C(CH_3)_2$

Answer: D

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Only One Correct Answer Q 126 To Q 150

1. Which is not a polymer?

A. Sucrose

B. Enzyme

C. Starch

D. Teflon

Answer: A

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2. Which of the following is a polyamide?

A. Teflon

B. Nylon-66

C. Terylene

D. Bakelite

Answer: B

Watch Video Solution

3. $\sim\!\!\left[\sim NH(CH_2)_6NHCO(CH_2)_4CO\sim\right]\!\!\sim$ is a:

A. homopolymer

B. copolymer

C. addition polymer

D. thermo setting polymer

Answer: B

Watch Video Solution

4. Which of the following polymer can be used for lubrication and as an insulator?

A. SBR

B. PVC

C. PTFE

D. PAN

Answer: C

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5. Which of the following polymers are biodegradable polymer of polyamide class?

A. Dextran

B. Nylon-2-nylon-6

C. Nylon-66

D. PHBV

Answer: B

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6. In a polymer sample, 30% of molecules have a molecualr mass of $20,000, 40\%$ have 30,000 and the rest 60,000. What is the weight average molecular mass of the polymer?

A. 403000

B. 306000

C. 43333

D. 50400

Answer: C

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7. Which of the following is an addition polymer?

A. Nylon-6

B. Nylon-66

C. High density polythene

D. Dacron

Answer: C

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8. Natural rubber is a polymer of:

A. Butadiene

B. ethylene

C. styrene

D. isoprene

Answer: D

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9. Which of the following polymers is prepared by condensation polymerisation?

A. Styrene

B. Nylon-66

C. Teflon

D. Rubber

Answer: B

Watch Video Solution

10. Which of the following is not a correct match?

Polymer	Monomers
(a) Teflon	Tetrafluoroethylene
(b) Flexiglass	Methyl methacrylate
(c) Orlon	Glycerol, phthalic anhydride
(d) Buna-S	Styrene, 1, 3-butadiene
(e) Thiokol	Ethylene dichloride, sodium tetra sulphide

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11. Which percentage is used in the vulcanization of rubber?

A. $5\ \%$

B. $3\ \%$

C. $30\ \%$

D. $55\ \%$

Answer: A

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12. Chain transfer reagent is:

A. CCl(4)

B. CH_4

C. O_2

D. H_2

Answer: A

Watch Video Solution

13. Bakelite is obtained from phenol by reaction with:

A. $HCHO$

B. $(CH_2OH)_2$

C. CH_3CHO

D. CH_3COCH_3

Answer: A

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14. 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 isopyrene

C. In vulcanization the formation of sulphur bridtes between different chains makes rubber harder and stronger

D. Natural rubber has the trans-configuration at every double bond

Answer: D

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15. The condensation polymer among the following is:

A. rubber

B. protein

C. PVC

D. polyethene

Answer: B

Watch Video Solution

16. The monomer used to produce orlon is:

A. $CH_2 = CHF$

B. $CH_2 = C(Cl_2)$

C. $CH_2 = CHCl$

D. $CH_2 = CHCN$

Answer: D

Watch Video Solution

17. Which polymers occur naturally?

A. Starch and Nylon

B. Starch and Cellulose

C. Proteins and Nylon

D. Protein and PVC

Answer: B

 Watch Video Solution

18. Given the polymers

I=Nylon-66, II=Buna-S, III=Polyethene

Arrange these in increasing order of inter molecular forces (lower to higher).

A. $I > II > III$

B. $II > III > I$

C. $II < III < I$

D. $III < I < II$

Answer: D

View Text Solution

19. Natural rubber is a polymer of:

A. trans-isoprene

B.

C. cis-isoprene

D. cis-trans-isoprene

Answer: B

Watch Video Solution

20. The polymer used in orthopaedic devices and in controlled drug release is:

A. Orlon

B. PTFE

C. SBR

D. PHBV

Answer: D

Watch Video Solution

21. The catalyst used for olefin polymerisation is:

A. Ziegler-Natta catalyst

B. Wikinson's catalyst

C. Raney nickel catalyst

D. Merrified resin

Answer: A

Watch Video Solution

Watch Video Solution

22. which of the following statements is not correct?

A. Caprolactum is the monomer of nylon-6

B. Terylene is polyester polymer

C. Phenol formaldehyde resin is known as bakelite

D. The monomer of natural rubber is butadiene

Answer: D

Watch Video Solution

23. Which element is used to vulcanize rubber?

A. P

B. Br

C. N

D. S

Answer: D

Watch Video Solution

24. The name of the polymer obtained by heating tetrafluoroethene with a persulphate catalyst under pressure is:

A. nylon-66

B. dacron

C. teflon

D. acrylonitrile

Answer: C

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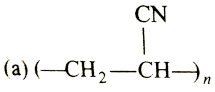
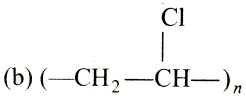
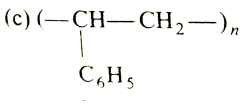
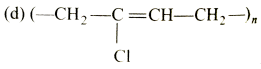
25. Which of the following structures represents neoprene polymer?

A. 

B. 

C. 

D. 

Answer: D

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Only One Correct Answer Q 151 To Q 175

1. Of the following, which one is classfied as polyester polymer?

A. Melamine

B. Nylon-66

C. Terylene

D. Bakelite

Answer: C

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2. Which of the following statements is false?

A. Nylon-66 is an example of elastomer

B. The repeat unit in natural rubber is isoprene

C. Both starch and cellulose are polymers of glucose

D. Artificial silk is derived from cellulose

Answer: A

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3. Which of the following is not a condensation polymer?

A. Glyptal

B. Dacron

C. Neoprene

D. Melamine

Answer: C

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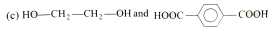
4. Which one of the following sets from the biodegradable polymer?

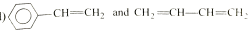
A. $CH_2 = CH - CN$ and

$CH_2 = CN - CH = CH_2$

B. $H_2N - CH_2 - COOH$ and

$H_2N - (CH_2)_5 - COOH$

C. 

D. 

Answer: B

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5. Nylon is an example of:

A. Polyethene

B. Polyester

C. polysaccharide

D. polyamide

Answer: D

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

A. $CH_2 = CH - C \equiv CH$

B. $CH_2 = CH - CH = CH_2$

C. $CH_2 = \underset{\underset{CH_3}{|}}{C} - CH = CH_2$

D. $CH_2 = \underset{\underset{Cl}{|}}{C} - CH = CH_2$

Answer: D

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7. The total number of lone pairs of electrons in melamine is:

A. 12

B. 8

C. 10

D. 6

Answer: D

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8. The repeating unit present in nylon-6 is:

A. $-\left[NH(CH_2)_6NHCO(CH_2)_4CO\right]$-

B. $-\left[CO(CH_2)_5NH\right]-$

C. $-\left[CO(CH_2)_6NH\right]-$

D. $-\left[NH(CH_2)_4NHCO(CH_2)_6CO\right]-$

Answer: B

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9. The monomeric unit of teflon consists of:

A. isoprene

B. 2-chloro-1, 3-butadiene (chloroprene)

C. butadiene

D. tetrafluoroethylene

Answer: D

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10. Which one of the following class of compounds is obtained by polymerization of acetylene?

A. Poly-yne

B. Poly-ene

C. Poly-ester

D. Poly-amide

Answer: B

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11. Which one of the following is an exmaple of thermosetting polymers?

A. Neoprene

B. Buna-N

C. Nylon-6,6

D. Bakelite

Answer: D

Watch Video Solution

12. Which of the following polymer does not contain hydrogen bonding?

A. Nylon-6,6

B. Polyurethanes

C. Kevlar

D. Dacron

Answer: D

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13. Which of the statement does not explain fibres?

A. Fibres are made of linear long chains which permit side-by-side alignment

B. Structures of fibres are controlled by enthalpy instead of entropy

C. There exist strong intermolecular forces to prevent slipping between chains

D. Nylon and rubbers are typical examples of fibres

Answer: D

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14. Which of one of the following is classified as a copolymer?

A. Dacron

B. polyacrylonitrile

C. Teflon

D. Polyvinylacetate

Answer: A

Watch Video Solution

15. The species which can best serve as an initiator for the cationary polymerization is:

A. $LiAlH_4$

B. HNO_3

C. $AlCl_3$

D. $BuLi$

Answer: C

Watch Video Solution

16. Which of the following is fully fluorinted polymer?

A. Neoprene

B. Teflon

C. Thiokol

D. PVC

Answer: B

Watch Video Solution

17. Benzoyl peroxide acts as an initiator for:

A. cationic polymerization

B. anionic polymerization

C. free radical polymerization

D. condensation polymerization

Answer: C

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18. Which of the following monomers would be most reactive towards cationic polymerization?

A. $CH_2 = CH - OCH_3$

B. $CH_2 = CH - CN$

C. $CH_2 = CH - NO_2$

D. $CH_2 = CH - CH_3$

Answer: A

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19. Which statement below does not occur during the formation of an addition polymer?

A. Free radicals initiate the process

B. Certain double bonds in monomers are replaced with single bonds

C. Propogation involves a reaction between two free radicals

D. Termiantion occurs when the free radicals are used up

Answer: C

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20. Complete the following free radial addition equation

$RO + CH_2 = CH - CH_3 \rightarrow$

A. $ROCH_2CH_2$

B. $ROH + CH_2 = CH - CH_2$

C. $ROCH = CH - CH_2 + H_2$

D. $ROCH_2CH - CH_3$

Answer: D

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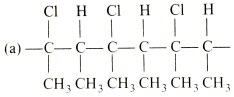
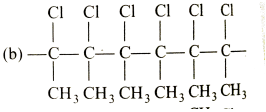
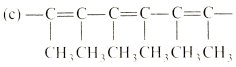
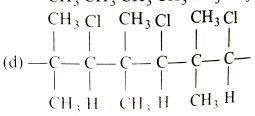
21. Identify the addition polymer that would be produced from 2-chloro-2-butene.

A. 

B. 

C. 

D. 

Answer: A

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22. Bakelite is obtained form phenol by reacting with:

A. $(CH_2OH)_2$

B. CH_3CHO

C. CH_3COCH_3

D. $HCHO$

Answer: D

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23. The polymer containing strong intermolecular forces, e.g., hydrogen bonding is:

A. natural rubber

B. teflon

C. nylon-6,6

D. Polystyrene

Answer: C

Watch Video Solution

24. Which one is classified as a condensation polymer ?

A. Dacron

B. Neoprene

C. Teflon

D. Acrylonitrile

Answer: A

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25. Nylon threads are made up of:

A. polyvinyl polymer

B. polyester polymer

C. polyamide polymer

D. polyethylene polymer

Answer: C

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Only One Correct Answer Q 176 To Q 189

1. Which of the following is a polyamide?

A. Teflon

B. Nylon-6 6

C. Terylene

D. Bakelite

Answer: B

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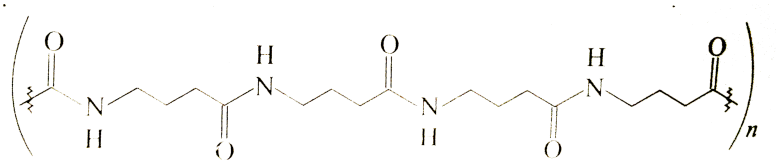
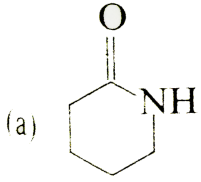
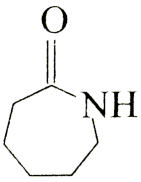
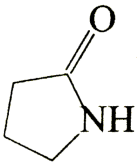
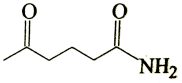
2. Which of the following monomers would produce the condensation polymer below?



A. 

B. (b) 

C. (c) 

D. (d) 

Answer: C

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3. The copolymers formed by reaction of (i) Ethylene glycol + Terephthalic acid, (ii) Butadiene+Acrylonitrile and (III) Hexamethylene diamine + Adipic acid are:

A. I) Polyhexamethylene adipamide, (II) Polyacrylonitrile, (III) polyethylene terephthalate

B. I) polyhexamethylene adipamide, (II) polyacrylonitrile, (III) polyvinyl chloride

C. I) Polyethylene terephthalate, II) polyacrylonitrile, (III) polyhexamethylene adipamide

D. I) polyacrylonitrile, II) polyhexamethylene adipamide, III) polyethylene terephthalate

Answer: C

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4. When chains of one kind are attached to the backbone of a different polymer, the copolymer is called

A. random copolymer

B. block copolymer

C. graft copolymer

D. none of these

Answer: C

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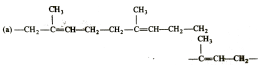
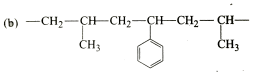
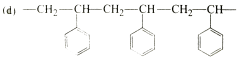
5. Which of the following is a copolymer?

A. 

B. 

C. (##GRB_CHM_ORG_HP_C13_E01_180_O03##)

D. 

Answer: B

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6. Buna-N synthetic rubber is a copolymer of:

A. $H_2C = CH - \overset{Cl}{\overset{|}{C}} = CH_2$ and

$H_2C = CH - CH = CH_2$

B. $H_2C = CH - CH = CH_2$ and

$H_5C_6 - CH = CH_2$

C. $H_2C = CH - CN$ and

$$H_2C = CH - \underset{\underset{CH_3}{|}}{C} = CH_2$$

D. $H_2C = CH - CN$ and

$H_2C = CH - CH = CH_3$

Answer: D

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7. Structure of some important polymers are given. Which one represents Buna-S?

A. $\left(-CH_2 - \overset{CH_3}{\overset{|}{C}} = CH - CH_2 - \right)_n$

B.

$$\left(-CH_2 - CH = CH - CH_2 - \underset{C_6H_5}{\underset{|}{CH}} - CH_2 - \right)_n$$

C.

$$\left(-CH_2 - CH = CH - CH_2 - \underset{CN}{\underset{|}{CH}} - CH_2 - \right)_n$$

D. $\left(-CH_2 - \overset{Cl}{\overset{|}{C}} = CH - CH_2 - \right)_n$

Answer: B

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8. Which one of the following structures represents the neoprene polymer?

A. $\left(-CH_2 - \underset{\underset{Cl}{|}}{C} = CH - CH_2 - \right)_n$

B. $\left(-CH_2 - \underset{\underset{CN}{|}}{CH} - \right)_n$

C. $\left(-CH_2 - \underset{\underset{Cl}{|}}{CH} - \right)_n$

D. $\left(-\underset{\underset{C_6H_5}{|}}{CH} - CH_2 - \right)_n$

Answer: A

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9. Natural rubber is

A. all trans-polyisoprene

B. chloroprene

C. buna-S

D. all cis-polyisoprene

Answer: D

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10. Which polymer is used in the manufacture of paints and lacquers?

A. Glyptal

B. Polypropene

C. Polyvinyl chloride

D. Bakelite

Answer: A

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11. Match the following in column I with their main uses in column II and choose the correct answer:

	Column I		Column II
(A)	Polystyrene	p.	Paints and lacquers
(B)	Glyptal	q.	Rain coats
(C)	Polyvinyl chloride	r.	Manufacture of toys
(D)	Bakelite	s.	Computer discs

A. A-q, B-p, C-r, D-s

B. A-r, B-p, C-q, D-s

C. A-q, B-s, C-r, D-p

D. A-r, B-s, C-r, D-p

Answer: A

View Text Solution

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

A. Nylone

B. poly(vinyl chloride)

C. cellulose

D. natural rubber

Answer: D

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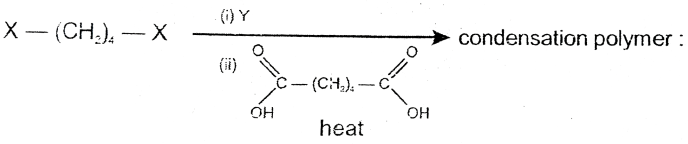
13. The correct functional group X and the reagent//reaction conditions Y in the following scheme are



A. $X = COOCH_3, Y = H_2/\mathrm{Ni}/\mathrm{heat}$

B. $X = CONH_2, Y = H_2/\mathrm{Ni}/\mathrm{Heat}$

C. $X = CONH_3, Y = Br_2 / NaOH$

D. $X = CN, Y = H_2 / Ni / \text{heat}$

Answer: A

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14. Under hydrolytic conditions, the compounds used for preparation of linear polymer and for chain termination, respectively, are

A. CH_3SiCl_3 and $Si(CH_3)_4$

B. $(CH_3)_2SiCl_2$ and $(CH_3)_3SiCl$

C. $(CH_3)_2SiCl_2$ and CH_3SiCl_3

D. $SiCl_4$ and $(CH_3)_3SiCl$

Answer: B

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More Than One Correct

1. Vinyl polymerization may occur through intermediate formation of:

A. carbocations

B. carbonions

C. free radicals

D. carbenes

Answer: A::B::C

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2. Which of the following contain ethylene glycol as one of the monomers?

A. Melamine

B. Polystyrene

C. Glyptal

D. Terylene

Answer: C::D

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3. Which of the followig statements are not correct?

A. Polyester is not a copolymer

B. Polystyrene is a thermoplastic

C. Dacron is a fibre

D. Natural rubber behaves as thermosetting polymer

Answer: A::D

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4. Which of the following polymers contain 1,3-butadiene as one of the monomers?

A. ABS plastic

B. SBR

C. Saran

D. Nitrile rubber

Answer: A::B::D

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5. The polymers that contain only copolymers are:

A. Glyptal

B. nylon-6

C. nylon-6-6

D. SBR

Answer: A::C::D

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6. Which of the following are addition homopolymers?

A. Teflon

B. SBR

C. PVC

D. Natural rubber

Answer: A::C::D

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Linked Comprehension Type

1. Monomers are simple molecules, which combine with each other to form polymers. Each polymer has a repeating structural unit. Polymers formed the same type of monomers are called homopolymers and if two or more different repeating units (monomers) make up the polymer, it is known as a copolymer. Both homopolymers and copolymers may be formed either by

addition or condensation reactions. Alkenes and diense polymerize by addition (chain growth) mechanism involving carbocations, carbanions or free radical intermediates. Diense (Chloroprene, isoprene, etc) polymerize by 1,4-addition mechanism to give cis- or trans- polymers. Natural rubber is, however, cis-polyisoprene. Natural rubber is quite soft and flexible but these properties can be improved by a process called vulcanization. In contrast, bifunctional monomer molecules undergo condensation or step-growth polymerization. Polymers which can be heated and reshaped as many times as desired are called thermoplastics (polythene, polystyrene, PVC teflon, etc.) while those which can be heated only once to give a particular shape are called thermosetting polymers

(Bakelite, Melmac, etc).

Vinyl chloride is the repeating unit in:

A. polystyrene

B. Neoprene

C. PVC

D. polyethene

Answer: C

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2. Monomers are simple molecules, which combine with each other to form polymers. Each polymer has a repeating structural unit. Polymers formed the same

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Which of the following is not a natural polymer?

A. DNA

B. starch

C. Palmitate

D. Nylon-6 6

Answer: C

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3. Monomers are simple molecules, which combine with each other to form polymers. Each polymer has a repeating structural unit. Polymers formed the same type of monomers are called homopolymers and if two or more different repeating units (monomers) make up the polymer, it is known as a copolymer. Both homopolymers and copolymers may be formed either by addition or condensation reactions. Alkenes and diense polymerize by addition (chain growth) mechanism involving carbocations, carbanions or free radical intermediates. Diense (Chloroprene, isoprene, etc) polymerize by 1,4-addition mechanism to give cis- or trans- polymers. Natural rubber is, however, cis-polyisoprene. Natural rubber is quite soft and flexible

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Propene, styrene and ethylene glycol are:

A. copolymers

B. condensation polymers

C. homopolymers

D. monomers

Answer: D

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4. Monomers are simple molecules, which combine with each other to form polymers. Each polymer has a repeating structural unit. Polymers formed the same type of monomers are called homopolymers and if two or more different repeating units (monomers) make up the polymer, it is known as a copolymer. Both homopolymers and copolymers may be formed either by addition or condensation reactions. Alkenes and diense polymerize by addition (chain growth) mechanism involving carbocations, carbanions or free radical

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Which of the following, are example of thermoplastics?

A. Polyethen, bakelite, nylon-6

B. Glyptal, melmac, polyester

C. PVC, PMMA, polyester

D. Polypropylene, urea-formaldehyde resin, teflon

Answer: C

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5. Monomers are simple molecules, which combine with each other to form polymers. Each polymer has a repeating structural unit. Polymers formed the same type of monomers are called homopolymers and if two or more different repeating units (monomers) make up the polymer, it is known as a copolymer. Both

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particular shape are called thermosetting polymers (Bakelite, Melmac, etc).

Which of the following are examples of homopolymers?

A. SBR, glyptal, nylon-6,6

B. Nylon-6, butyl rubber, styrene rubber

C. Polyethene, polypropene, PVC

D. Melmac, bakelite, teflon

Answer: C

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6. A large numberof monomers (Simple molecules) combine together to form a larger molecule (macro

molecule) called as polymer. Each polymer is made up of a repeating structural unit. A polymer is said to be homopolymer if the structural unit is derived from one type of monomer molecules. if the repeating structural unit of a polymer is derived from more than one different types of monomers, the polymer is said to a copolymer. The homopolymers as well as copolymers may be formed by addition or condensation reactions. Alekenes and dienes polymerize by additions (Chain growth) mechanism involving carbocations, carbanions or free radical intermeidates. Dienes (Chloroprene) polymerise by 1, 4 addition mechanism to give cis or trans polymers. Natural rubber is, however, cis-polyisoprene. Natural rubber is quite soft and tacky but these properties can be improved by a process called

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Teflon, polystyrene and neoprene are all:

A. copolymers

B. condensation polymers

C. homopolymers

D. monomers

Answer: C

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7. A large numberof monomers (Simple molecules) combine together to form a larger molecule (macro molecule) called as polymer. Each polymer is made up of a repeating structural unit. A polymer is said to be homopolymer if the structural unit is derived from one type of monomer molecules. if the repeating structural unit of a polymer is derived from more than one different types of monomers, the polymer is said to a copolymer. The homopolymers as well as copolymers may be formed by addition or condensation reactions.

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thermosetting polymers (bakelite, melmac etc.)

Chloroprene is the repeating unit in:

A. polystyrene

B. Neoprene

C. PVC

D. polythene

Answer: B

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8. A large numberof monomers (Simple molecules) combine together to form a larger molecule (macro molecule) called as polymer. Each polymer is made up of

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Which of the following sets contain only copolymers?

A. SBR, glyptal, nylon-66

B. Nylon-6, butyl rubber, neoprene

C. Polythene, polyester, PVC

D. Melmac, bakelite, teflon

Answer: A

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9. A large numberof monomers (Simple molecules) combine together to form a larger molecule (macro molecule) called as polymer. Each polymer is made up of a repeating structural unit. A polymer is said to be homopolymer if the structural unit is derived from one type of monomer molecules. if the repeating structural unit of a polymer is derived from more than one different types of monomers, the polymer is said to a copolymer. The homopolymers as well as copolymers may be formed by addition or condensation reactions. Alekenes and dienes polymerize by additions (Chain growth) mechanism involving carbocations, carbanions

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Which is not a macro molecule?

A. DNA

B. Starch

C. Palmitate

D. Insulin

Answer: C

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10. A large numberof monomers (Simple molecules) combine together to form a larger molecule (macro molecule) called as polymer. Each polymer is made up of a repeating structural unit. A polymer is said to be homopolymer if the structural unit is derived from one type of monomer molecules. if the repeating structural

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In contrast, bifunctional monomer molecules undergo condensation or step-growth polymerization. Polymers which can be heated and reshpaed as many times as

desired are called thermoplastics (polyethene, polystyrene, PVC, teflon etc). While those which can be heated onoy once to give a particular shape are called thermosetting polymers (bakelite, melmac etc.)

Which of the following sets contains only thermoplasters?

A. Polythene, Bakelite, Nylon-6

B. Glyptal, Melmac, PAN

C. PVC, PMMA, Polystyrene

D. Polypropylene, Urea formaldehyde teflon

Answer: C

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Match The Column

1. Match the polymer with its property.

Column I	Column II
(a) Natural rubber	p. Thermosetting
(b) Polystyrene	q. Thermoplastic
(c) Urea-formaldehyde	r. Condensation
(d) Polyester	s. Biodegradable

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2. Match the polymer with its type:

Column I	Column II
(a) Nylon-6	p. Addition copolymer
(b) Buna-S	q. Addition homopolymer
(c) Polyester	r. Condensation homopolymer
(d) Polyacrylonitrile	s. Condensation copolymer

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3. Match the polymer with its property.

Column I	Column II
(A) Nylon-2-nylon-6	p. Elastomer
(B) Nylon-6, 6	q. Prepared by condensation polymerization
(C) Natural rubber	r. Synthetic fibre
(D) Melamine-formaldehyde	s. Biodegradable

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4. Match the following columns

Column I	Column II
(a) Cellulose	p. Natural polymer
(b) Nylon 6, 6	q. Synthetic polymer
(c) Protein	r. Amide linkage
(d) Sucrose	s. Glycoside

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5. Match the following columns

Column I	Column II
(a) *cis*-polyisoprene	p. Thermosetting
(b) Chloroprene	q. Thermoplastic
(c) Bakelite	r. Condensation
(d) Polyester	s. Biodegradable

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Integer Answer Type Problems

1. The number of condensation copolymers among the following is_____.

SBR, polyester, bakelite, nylon-6, PVC, starch, nylon-6,6, glyptal, natural rubber.

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2. The number of double bonds present in the repeating structural units of natural rubber is.....

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3. The number of natural polymers among the following is_____.

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4. The number of nitrogen atoms present in the monomer of urea-formaldehyde resin is_____

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5. The total number of lone pairs of electrons in melamine is:

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6. Amongst the following, the total number of copolymers is bakelite, nylon 6,6, polystyrene, buna-S rubber, urea-formaldehyde resin, PVC.

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7. How many of the following are addition polymers?

Polythene, PVC, natural rubber, bakelite, nylon-6,6, teflon.

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8. Amongst the following, the total number of biodegradable polymers are:

Nylon-6, 6, PHBV, cellulose, PVC, glyptal, dextron, nylon-2-nylon 6, PAN.

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