

AKAKI ADVENTIST SCHOOL
CHEMISTRY WORK SHEET FOR GRADE **12**

UNIT SIX

POLYMERS

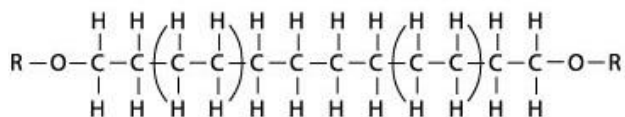
Polymers, Monomers, Homo polymers, Copolymers, Natural polymer, Synthetic polymer, Polymerization (Addition polymerization and Condensation polymerization), Thermoplastics Polymers, Thermosetting Polymers, Impacts of Synthetic Polymers on Environment, Natural Polymers, Natural rubber, Synthetic rubber, Nylon 66, polyesters(Dacron), glycosidic linkage, peptide linkage, Carbohydrates, Proteins ,,,

CHOOSE THE BEST ANSWER FROM THE GIVEN ALTERNATIVES

1. Which of the following not polymer?
A. Styrene B. Tetra Fluoro Ethylene C. Vinyl Chloride **D. All**
2. Which of the following is a thermosetting polymer?
A. polystyrene B. poly olefins C. nylons **D. phenolic resins**
3. The characteristics of condensation polymerization are given below-
I. only -C-C- linkages present in the polymer structure
II. use of bifunctional or polyfunctional monomers
III. Elimination of a small byproduct molecule,
Which of the following is true about condensation polymerization?
A. I, II, III **B. II and III** C. I and II D. only III
4. Which of the following monomers are unsuitable for condensation polymerization?
A. Propanoic acid and ethanol
B. Butane dioic acid and glycol
C. Diamines and dicarboxylic acids
D. Hydroxyl acids
5. Which of the following is true for the resultant polymer product formed, when molecules of phthalic acid react with molecules of glycerol?
A. branch polymer **B. cross-link polymer**
C. linear polymer D. none of the mentioned
6. Which among the following polymers have lowest solubility?
A. polyethylene B. polystyrene
C. nylon 6 **D. epoxy resin**
7. During condensation polymerization a molecule formed in addition to polymer is
A. water B. carboxylic acids C. benzene D. esters

8. In which of the following category does cellulose nitrate fall into?
 - A. natural
 - B. synthetic
 - C. semi-synthetic**
 - D. none of the mentioned
9. The smaller molecules in polymerization is called
 - A. poly saccharide
 - B. polymer
 - C. monomer**
 - D. none of the mentioned
10. Which of the following **is not** a polymer?
 - A. Carbohydrates
 - C. nucleic acid
 - B. proteins
 - D. carboxylic acid**
11. Which of the following is a natural polymer?
 - A. Cellulose**
 - C. Teflon
 - B. Polypropylene
 - D. Kevlar
12. Which pattern of polymer is not a copolymer?
 - A. CCDDDDCCDDDDCCDDDD
 - C. BBBBBBBBBBAAAAAAA
 - B. CCCDDDDCCCDDDDCCC
 - D. AAAAAAAAAAAAAA**
13. Which of the following **is not** a characteristic of thermoplastic?
 - A. no cross links between chains
 - C. resistance to heat won't melt**
 - B. can be molded
 - D. commonly used as plastic bottle
14. What structural features are usually needed to present in order for addition polymer to be produced?
 - A. Carbon-Carbon δ bond
 - B. Carbon- Oxygen π bond
 - C. Carbon- Oxygen δ bond
 - D. Carbon-Carbon π bond**
15. Protein polymer is made from monomer of;
 - A. amino acid
 - B. α - amino acid**
 - C. β - amino acid
 - D. DNA & RNA
16. Which of the following is not carbohydrate?
 - A. Starch
 - B. Glucose
 - C. Cellulose
 - D. Glycine**
17. Which element is added to natural rubber to make it harder and susceptibility to oxidation and chemical attacks?
 - A. Nitrogen
 - B. Sulphur**
 - C. Carbon
 - D. Silicon
18. Natural rubber is a polymer of
 - A. Butadiene
 - B. Isoprene**
 - C. Neoprene
 - D. Styrene
19. Which of the following is copolymer?
 - A. Polyethylene
 - B. PVC
 - C. Nylon**
 - D. Teflon
20. What are the raw materials used to synthesis Nylon 66?
 - A. diacids
 - B. diamines
 - C. diacids & diamines**
 - D. Polystyrene
21. Which of the following is natural polymer?
 - A. Cotton
 - B. Wool
 - C. DNA & RNA
 - D. All**

22. Nylon is a/an
 A. amides B. peptides **C. polyamides** D. polyesters
23. Amino acids react to form peptides and proteins, in the process known as
 A. addition polymerization
 B. substitution polymerization
C. condensation polymerization
 D. hydration polymerization
24. Condensation polymerization involves monomers containing functional groups of
 A. same kind **B. different kind** C. all groups D. compounds
25. Due to the presence of carbon atom in polymers all large biological molecules are made of__
A. Covalent bond C. Metallic bond
 B. Ionic bond D. Triple bond
26. Amino acids are the building blocks of _____
 A. Carbohydrates **B. Proteins** C. Nucleic acids D. Lipids
27. Which substance is made up of many monomers joined together in long chains?
 A. salt **B. cellulose** C. ethanol D. polygon
28. What does the following structure indicates?



- A. Monomer C. Natural rubber
B. Polymer D. Elastomer
29. Which of the following polymer is temperature resistant?
 A. Thermo plastic polymer **B. Thermo set polymer**
 C. Polymer with linear linkage D. Polymer which can be reshaped
30. Which of the following is not natural polymer?
A. Poly vinyl Chloride B. Nucleic acid C. Starch D. Cellulose
31. The word 'polymer' meant for material made from _____.
 A. Single entity B. Two entities
C. Multiple entities D. any entity
32. One of the characteristic properties of polymer material is
 A. High temperature stability B. High mechanical strength
C. High elongation D. Low hardness
33. Polymers are _____ in nature.
 A. Organic B. Inorganic
C. A & B D. None
34. Which of the following polymers **cannot** be recycled?
 A. Thermoplastics **B. Thermosets**
 C. Elastomers D. All polymers

35. In general, strongest polymer group is _____.
 A. Thermoplastics **B. Thermosets**
 C. Elastomers D. All polymers
36. Which of the following polymers consist of coil-like polymer chains:
 A. Thermoplastics B. Thermosets
C. Elastomers D. All polymers
37. Strong covalent bonds exists between polymer chains in _____.
 A. Thermoplastics **B. Thermosets**
 C. Elastomers D. All polymers
38. Which of the following is unique to polymeric materials?
 A. Elasticity **B. Viscoelasticity**
 C. Plasticity D. None
- 39 Elastic deformation in polymers is due to _____.
A. Slight adjust of molecular chains
 B. Slippage of molecular chains
 C. Straightening of molecular chains
 D. Severe of Covalent bonds
40. Kevlar is commercial name for _____.
 A. Glass fibers B. Carbon fibers
C. Aramid fibers D. Cermet
- 41 Addition polymerization will have monomers with no repeating functional units in actual chain which forms
A. backbone B. products C. Opposite groups D. reactants
42. Large molecules made up of small monomers are called
 A. peptides **B. polymers** C. peptones D. monomers
43. In addition polymerization, a monomer with double bond will simply
A. turn into single bond B. remain same
 C. break D. get rotated
44. Using more than one type of unsaturated monomer will produce a
A. Co-polymer B. polyamides
 C. Polyester D. Polytone
45. Acidic amino acids have
 A. 2 amino groups and 1 carboxylic group
 B. 1 amino and 1 carboxylic groups
C. 2 carboxylic groups and 1 amino group
 D. 2 amino and 2 carboxylic groups
46. In the formation of Zwitter ions proton goes from
A. Carboxyl to amino group B. Amino to carboxyl group
 C. Amino group only D. Carboxyl group only

47. The term internal salt refers to
 A. Acidic character of amino acids C. Dipolar character of amino acids
B. Basic character of amino acids D. Non-polar structure of amino acids
48. Which one of the following is not formed by addition polymerization?
 A. Polyethylene B. Polyvinyl Chloride C. Teflon **D. Dacron**
49. Which one of the following statements is incorrect about synthetic and natural polymers?
 A. Nucleic acids, proteins and carbohydrates are natural polymers
B. Natural polymers are the major pollutants of the environment
 C. Synthetic polymers have wide applications
 D. None of the above
50. Which of the following monosaccharides is a ketohexose?
 A. Ribose B. Glucose C. Galactose **D. Fructose**
51. Which of the following statement is incorrect about polymers?
 A. They are macromolecules made from smaller units.
 B. They can be prepared by either condensation or addition polymerization.
C. Most condensation polymers are homopolymer.
 D. Disposing synthetic polymers can pollute the environment.
52. Polyethylene is not used for making:
 A. Squeeze bottles C. Electrical insulation
 B. Trash bags **D. Airplane windows**
53. Which one of the following is a thermosetting plastic?
 A. Polyethylene B. Polypropylene C. Dacron **D. Bakelite**
54. The monomer of natural rubber is:
 A. isoprene C. chloroprene
 B. 2- methyl-1,3-butadiene **D. A and B are correct answers**
55. Which one of the following is not the characteristic of vulcanized rubber?
A. It is a sticky solid
 B. It is hard
 C. It has high tensile strength
 D. It has higher elasticity over a higher range of temperature
56. Which of the following statement is false about carbohydrates?
 A. They are prepared by green plants during photosynthesis.
 B. They are poly hydroxyl ketones or aldehydes or substances that yield such substances upon hydrolysis.
C. All carbohydrates are polymers.
 D. None of the above.
57. Which type of amino acids contains two amino groups and one carboxyl group?
 A. Non-polar B. Polar neutral **C. Polar basic** D. Polar acidic
58. A disaccharide made from two glucose units that are linked by α -1,4 glycosidic bond is:
 A. Cellulose **B. Maltose** C. Lactose D. Sucros

THANK YOU!