

Exam 3

Multiple Choice questions: Q 1-40. Highlight or mark the correct answer. (2 point each)

- The following is a polymer.
 - Glucose
 - Polysaccharide
 - DNA
 - B & C are true**
- The following is a naturally occurring polymer.
 - Celluloid
 - Silk**
 - Plastic
 - A & B
 - All of the above
- The following is true for Addition polymers.
 - During synthesis, all of the monomers combine with each other**
 - During synthesis, only parts of monomers combine with each other
 - H₂O is a common byproduct.
 - None of the above are true
- The following is true for condensation polymers.
 - During synthesis, only parts of monomers combine with each other
 - H₂O is a common byproduct of condensation synthesis in a cell.
 - Starch is a condensation polymer
 - All of the above are true**
- The following is always a reactant in hydrolysis reaction in a cell.
 - H₂O**
 - HCl
 - NH₃
 - None of the above
- Hydrocarbons are made of _____ and _____.
 - C, H**
 - C, O
 - C, S
 - C, P
- As you increase the length of hydrocarbon chain, the molecules becomes more _____.
 - Polar
 - Nonpolar**
- Ionizing radiation

- a. causes radioactive acids to form
 - b. comes from synthetic isotopes only
 - c. is energetic enough to ionize atoms and molecules
 - d. can give one superpowers
9. "Free radicals disrupt cellular processes." This statement is
- a. True
 - b. False
10. Half-life is defined as
- a. Emission of beta particles
 - b. The time it takes for half of the material to undergo decay
 - c. The time it takes for 1/4 of the material to undergo decay
 - d. The time it takes for all of the material to undergo decay
 - e. None of the above
11. "Radiation is used as diagnostic and a therapeutic tool in medicine." This statement is
- a. True
 - b. False
12. Energy is defined as
- a. Ability to do work
 - b. Ability to transfer heat
 - c. Both a & b
13. The SI unit of energy is
- a. Calorie
 - b. Joule
 - c. Watt
 - d. Kilocalories
14. Exothermic reactions
- a. Release heat to the surroundings
 - b. Absorb heat from the surroundings
15. Reaction of acid with a base results in product formation with increase in temperature.
- It is an example of
- a. Exothermic reaction
 - b. Endothermic reaction
16. "The first law of thermodynamics is also a law of conservation of energy." This statement is
- a. True
 - b. False
17. An apple hanging on a branch has
- a. Kinetic energy
 - b. Rotational energy
 - c. Potential energy
 - d. Force energy

18. Falling water from a water fall has
- Kinetic energy
 - Rotational energy
 - Potential energy
 - Force energy
19. The entropy in nature is
- Increasing
 - Decreasing
20. When Carbon-14 undergoes alfa decay, the product is
- Nitrogen
 - Beryllium
 - Boron
 - Oxygen
21. When P-32 undergoes beta decay, the product is
- Silicon
 - Chlorine
 - Sulfur
 - None of the above
22. The following is true for gamma decay.
- Energy is absorbed
 - Energy is released
 - Atom becomes more stable
 - B & c are true
23. A sum of ALL reactions in a cell is called _____
- Anabolism
 - Metabolism
 - Catabolism
24. Synthetic reactions in the cell are called _____
- Anabolism
 - Metabolism
 - Catabolism
25. Degradative reactions in the cell are called _____
- Anabolism
 - Metabolism
 - Catabolism
26. Carbohydrates are made of _____
- Amino acids
 - Monosaccharides
 - Glycerol and fatty acids
27. Proteins are made of _____
- Amino acids
 - Monosaccharides
 - Glycerol and fatty acids

28. Fats are made of _____
- Amino acids
 - Monosaccharides
 - Glycerol and fatty acids**
 - Nucleotides
29. _____ is a polysaccharide
- Starch**
 - Lactose
 - Glucose
 - Glycine
30. _____ are the catalysts of the cell.
- Fats
 - Proteins
 - Enzymes**
 - Carbohydrates
31. Lipids are _____.
- Hydrophobic**
 - Hydrophilic
32. Unsaturated fats contain _____.
- Single bonds between carbons
 - Double bonds between carbons**
33. Animal fats are _____; while plant oils contain _____ fats.
- Saturated; unsaturated**
 - Unsaturated; saturated
34. The following is not a component of DNA.
- Nitrogen base
 - Ribose**
 - Deoxyribose
 - Phosphate
35. The following describes a difference between DNA and RNA.
- DNA is genetic material of a cell; RNA is not
 - DNA contains deoxyribose; RNA contains ribose
 - DNA contains thymine; RNA does not.
 - All of the above are true differences**
- 36.40 Match the structural formula with name of the following compounds
36. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{NH}_2$ -B
37. CH_3OH - D
38. $\text{CH}_3\text{CH}_2\text{OCH}_3$ - A
39. $\text{CH}_3\text{CH}_2\text{COOCH}_3$ - E
40. $\text{CH}_3\text{CH}_2\text{F}$ - C
- Ethyl methyl ether
 - Butyl amine
 - Ethyl Fluoride

- d. Methanol
- e. Methyl propionate