**Sylhet Women’s Medical College**

**1st Term Examination**

**Subject: Biochemistry**

**SWMC-09, (SAQ)**

**Full marks -80 Time – 2 hrs 40 min Date- 07.05.2014**

Answer any 8 questions from each group. All questions carry equal marks.

**GROUP –A**

1. Define pH State the properties of pH scale. How pH is maintained? 1+2+2

1. Define buffering capacity. What are the factors affecting buffering capacity? Why Bicarbonate buffer is prime and phosphate buffer is stronger? 1+2+2

1. Classify solution. How will you prepare 200ml of isotonic saline? 3+2

1. Define colloid. State the properties of Colloid. How colloid can be separated from crystalloids?

1+2+2

1. Define and classify isomers. Mention the importance of isotope. 3+2

1. Mention the different structure of protein What is denaturation of protein. 3+2
2. Classify enzymes according to IUB classification. What are the factors affecting of enzyme activity? 3+2
3. Define and classify carbohydrates. What is invert sugar and reference sugar? 3+2
4. Define essential fatty acids with their functions and deficiency features. What is Omega carbon?

1+3+1

**GROUP –B**

1. What are the energy releasing nutrients? Mention their RDA. Name the nutrients essential for man.

1.5+2+1.5

1. What are the criteria of a ideal diet? Prepare a balanced diet for a 50 kg female medical student.

2+3

1. What are the components of DRIs? What is AMDR? 3+2
2. What is BMR? Mention the factors affecting BMR. Write the ways of basal energy expenditure?

1+2+2

1. State the common properties of water and fat soluble vitamins. State the function and deficiency features of vit A. 2.5+2.5
2. Mention the active form of major B complex vitamins. State the function and deficiency features of vit B12 and folic acid. 2+3
3. What are the common nutritional problems in Bangladesh? State the difference between kwashiorkor & marasmas. 3+2
4. What do you mean by trace elements? State the functions of iron, iodine, zine & dietary fibre. 1+4

1. Write short note on 2.5+2.5
2. Antioxidant vitamins
3. BMI

Sylhet Women’s Medical College

**1st Term Examination** Roll no………..

Subject: **Biochemistry,** MCQ,SWMC-09

Full marks -20 Time – 20 min Date- 07.05.2014

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| Q.1. Colloids are the substances that :  …….a. Cannot diffuse through semi permeable membrane  …….b. Have optical properties  …….c. Are Dialyzable  ……. d. Exert high osmotic pressure than crystalloids  ……. e. Carry electrical charges  Q.2. Presence of coenzymes are essential for complete catalytic activities of :  ……. a. Oxidoreductases  ……. b. Transferases  ……. c. Hydrolases  ……. d. Lyases  ……. e. Isomerases  Q.3. Isoelectric point is  ……. a. PH at which a molecule has no net charge  ……. b. Maximum mobility of a molecule in an electric filed  ……. c. maximum buffering capacity  …... d. Minimum solubility  ….... e. Inactive at Zwitterions state  Q.4. Heteropolysacharide chain in Glycoseaminoglycans characterized by  ……. a. Long chain  ……. b. Branched  ……. c. Negatively charged  ……. d. Repeating monosaccharide units  ……. e. Repeating disaccharide units.  Q.5. Function of Glycoproteins  ……. a. Cell surface recognition  ……. b. Cell surface antigenicity  ……. c. Component of in intracellular matrix  ……. d. Fibrous protein in plasma  ……. e. Component of mucin  Q.6. Isotopes  ……. a. Atomes of same elements  ……. b. Having same number of protons  ……. c. Having same number of neutrons  ……. d. Having same atomic weight  ……. e. Having same number of electrons  Q. 7. Dietary form of lipids are-  ……. a. Phospholipid  ……. b. Cholesterol  ….…. c. Free fatty acid  ……. d. Glycerrol  ……. e. Triglyceride  Q.8. Dietary fiber-  ……. a. Are monosaccharide  ……. b. Not absorbed  ……. c. Reduce the risk of cancer  ……. d. Lower the blood cholesterol  ……. e. Tends to decrease stool bulk  Q.9. Vitamin k is require for the synthesis of-  ……. a. Factor VII  ……. b. Factor V  ……. c. Factor X  ……. d. Factor II  ……. e. Factor III  Q. 10. Toxicity develops following prolong use of large doses of-  ……. a. Vitamin A  ……. b. Vitamin D  ……. c. Vitamin B6  ……. d. Vitamin K  ……. e. Vitamin E | Q. 11.Vitamins are-  ……. a. Inorganic compounds  ……. b. Required in small quantities  ……. c. Required for energy  ……. d. Essential for growth, maintains & reproduction  ……. e. Synthesized in our body  Q. 12.Vit D -  ……. a. Deficiency causes scurvy  ……. b. Active form is calcitriol  ……. c. Essential for bone mineralization  ……. d. Regulates plasma level of Ca & P  ……. e. Endogenous synthesis Requires sunlight  Q.13.Sulfur containing amino acid are--  ……. a. Glycine  ……. b. methionine  ……. c.Proline  ……. d. Cysteine  ……. e. Glutamic acid  Q.14. Enzymes are-  ……. a. Protein in nature  ……. b. Inactivited by heat  ……. c. Synthesized by genes  ……. d. Biocatalysts  ……. e. Are altered at the end of a reaction  Q.15. Deficiency of Folate cause --  ……. a.Megaloblastic anemia  ……. b. Pernicious anemia  ……. c.Fetal neural tube defects  ……. d. Microcytic anemia  ……. e. Macrocytic anemia  Q.16.Following vitamins are stored in human body-  ……. a. Vitamin B-12  ……. b. Vitamin A  ……. c. Vitamin C  ……. d. Vitamin D  ……. e. Thiamin  Q.17.Justify the following statement -  ……. a. Vit C is an antioxidant  ……. b. Pyridoxal phosphate an inactive co-enzyme  ……. c. Thiamin, present in whole wheat flour  ……. d. NADP is the coenzyme of vit B2  ……. e. Vit B3 deficiency causes pellagra  Q. 18.Following compounds are disaccharides--  ……. a. Glucose  ……. b. Fructose  ……. c. Galactose  ……. d. Sucrose  ……. e. Lactose  Q.19.Anomers are  ……. a. Formed around functional carbons  ……. b. Two varieties- α & ß  ……. c. Related to mutarotation  ……. d. Two verities-D & L isomers  ……. e. Mirror images of two isomers  Q.20. Common nutritional disorder are-  ……. a. Low birth weight  ……. b. PEM  ……. c. Obesity  ...…. d. Rickets  ……. e. Nyctalopia |