REV-01
BPT/62/31/36

2023/06

SET A

BACHELOR OF PHYSIOTHERAPY
SECOND SEMESTER
BIOCHEMISTRY
BPT – 205
[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. Full Marks: 70

(Objective)

Time: 30 min. Marks: 20

Choose the correct answer from the following: ***1×20=20***

1. The example of buffer is/are:
   a. Bicarbonate
   b. Phosphate
   c. Protein
   d. All of the above

2. Maltose is a disaccharide of
   a. Fructose and lactose
   b. Glucose and glucose
   c. Glucose and galactose
   d. Glucose and lactose

3. Which sugars are present in Sucrose?
   a. Glucose and glucose
   b. Fructose and galactose
   c. Fructose and glucose
   d. Glucose and galatose

4. Rancidity of lipids of lipid-rich foodstuff is because of
   a. Reduction of fatty acids
   b. Hydrogenation fatty acids
   c. Dehydrogenation of saturated fatty acids
   d. Oxidation of fatty acids

5. Purine base found in RNA is
   a. Cytosine
   b. Thymine
   c. Uracil
   d. Guanine

6. Nucleoside contains
   a. Base-sugar
   b. Base-phosphate
   c. Base-sugar-phosphate
   d. Sugar-phosphate

7. Which of the following amino acids has to be supplemented in the diet?
   a. Phenylalanine
   b. Cysteine
   c. Glutamine
   d. Asparagine

8. This enzyme catalyzes the first step of glycolysis or the EMP pathway
   a. Glucokinase
   b. Pyruvate kinase
   c. Phosphofructokinase-1
   d. Hexokinase

9. Which of the following is not formed during the Krebs cycle?
   a. Lactate
   b. Isocitrate
   c. Succinate
   d. Both (a) and (b)

10. What is the enzyme that breaks down lactose?
    a. Lipase
    b. Lactase
    c. Pepsin
    d. Amylase

11. Which of the following is the most essential nutrient for a woman during her initial stages of pregnancy to prevent birth defects?
    a. Thiamin
    b. Folic acid
    c. Vitamin C
    d. Vitamin E

12. Which of the following vitamin helps in blood clotting?
    a. Vitamin A
    b. Vitamin D
    c. Vitamin C
    d. Vitamin K

13. Which of the following vitamin functions as both, hormone and visual pigment?
    a. Thiamine
    b. Riboflavin
    c. Retinal
    d. Folic acid

14. The nature of an enzyme is
    a. Lipid
    b. Vitamin
    c. Carbohydrate
    d. Protein

15. This enzyme was first isolated and purified in the form of crystals
    a. Urease
    b. Pepsin
    c. Amylase
    d. Ribonuclease

16. This statement about enzymes is true
    a. Enzymes accelerate reactions by lowering the activation energy
    b. Enzymes are proteins whose three-dimensional form is key to their function
    c. Enzymes do not alter the overall change in free energy for a reaction
    d. All of these

17. The everyday dietary requirement of an average adult active moderately is approximately
    a. 1000 kcal
    b. 2500 kcal
    c. 4000 kcal
    d. 8000 kcal

18. This provides the greatest energy value per gram of nutrient
    a. protein
    b. carbohydrate
    c. fat
    d. water

19. Which of the following minerals controls growth and body weight?
    a. Iodine
    b. Calcium
    c. Phosphorous
    d. All of the above

20. Which of the following vitamins is called a water-soluble vitamin?
    a. Vitamin A
    b. Vitamin D
    c. Vitamin C
    d. Vitamin K

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Descriptive

Time : 2 hrs. 30 min. Marks:50

[Answer question no.1 & any four (4) from the rest]

1. Describe the TCA cycle in detail. How many ATP are produced in the cycle? **10**

2. Explain lipoproteins with a diagram. How are lipoproteins classified? **5+5=10**

3. What is buffering capacity? Explain the 3 types of buffer systems. **2+8=10**

4. Explain the process of digestion and absorption of lipids. **10**

5. Explain the role of activation energy in enzyme catalysed reaction **10**

6. Define vitamins and classify them according to their solubility **4+6=10**

7. Define BMR? Explain the factors affecting BMR **2+8=10**

8. What are cofactors explain their role in enzyme catalysed reaction **2+8=10**

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