US – 345

IV Semester B.Sc. Examination, May 2017
(CBCS) (F + R)
(2015-16 and Onwards)
BIOCHEMISTRY (Paper – IV)

Time : 3 Hours Max. Marks : 70

Instructions : *i) The question paper has **two** parts. Part – **A** and Part – **B**.*
*ii) Answer **any eight** questions from Part – **A** and **nine** questions from Part – **B**.*

PART – A

Answer **any eight** of the following questions. **Each** question carries **2** marks : **(8×2=16)**

1. What is cartilage ?
2. Give any two functions of plasma proteins.
3. What is Bohr's effect ?
4. Give the functions of gastric juice.
5. Mention the role of ADH.
6. Give the biological action of PGE_2.
7. What is cardiac output ?
8. Give two examples of amino acid neurotransmitters.
9. Differentiate skeletal and smooth muscle.
10. What is RDA ? Mention two factors that influence RDA.
11. Define Protein Efficiency Ratio.
12. Mention the deficiency symptoms of pellagra.

P.T.O.

PART – B

Answer **any nine** of the following questions. **Each** question carries **six** marks : **(9×6=54)**

13. a) Explain the structure and functions of collagen.
    b) Mention the role of osteoblast and osteoclast cells. **(4+2)**

14. a) Outline the various steps in blood coagulation pathway.
    b) Give the composition of cerebrospinal fluid. **(4+2)**

15. a) How is oxygen transported from lungs to tissues ?
    b) Differentiate inspiration and expiration. **(4+2)**

16. a) Explain the process of digestion of proteins.
    b) Give the functions of bile. **(4+2)**

17. a) Describe the various steps involved in urine formation.
    b) What is nephritis ? **(4+2)**

18. a) Describe the mechanism of action of steroid hormones.
    b) Mention any two roles of adrenal cortex hormone. **(4+2)**

19. a) Draw a neat labelled diagram of normal ECG and explain the letter designations.
    b) Mention the features of cardiac muscles. **(4+2)**

20. a) Discuss the mechanism of transmission of action potential.
    b) What are motor and sensory neurons ? **(4+2)**

21. a) Explain the structure of skeletal muscle with a neat labelled diagram.
    b) Mention the role of calcium in muscle contraction. **(4+2)**

22. a) Describe the determination of calorific value of food by Bomb calorimeter.
    b) Give the method for the proximate analysis of proteins. **(4+2)**

23. a) Write the differences between kwashiorkor and Marasmus.
    b) What is nitrogen balance ? **(4+2)**

24. a) Give the source and functions of
        i) Vitamin A ii) Vitamin D.
    b) Give any two functions of potassium. **(4+2)**

25. a) What is BMR ? Explain the factors affecting BMR.
    b) Mention the role of parathyroid hormone. **(4+2)**

US – 349

IV Semester B.Sc. Examination, May 2017
(Semester Scheme) (Repeaters)
(2012-13 and Onwards) (Prior to 2015-16)
BIOCHEMISTRY – IV

Time : 3 Hours Max. Marks : 70

Instructions : *This paper has **two** Parts – Part – **A** and Part – **B**.*
*Answer **any eight** questions from Part – **A**.*
*Answer **any nine** questions from Part – **B**.*

PART – A

Answer **any eight** of the following questions. **Each** question carries **two** marks. **(8×2=16)**

1. Define Calorific value of food.
2. What is the role of maltose and sucrose in digestion ?
3. Mention any two functions of pancreatic juice.
4. Name any two fat soluble vitamins and give their functions.
5. What is Nitrogen balance ? Give its significance.
6. What is Resting membrane potential ?
7. Name any two pituitary hormones and give their functions.
8. Mention the coenzyme functions of PLP and FMN.
9. What is protein sparing action of carbohydrates ?
10. Mention any one biological function of :
    i) Zinc
    ii) Potassium.
11. What is RQ of foods ?
12. Write any two factors affecting bone growth.

PART – B

Answer **any nine** of the following questions. **Each** question carries **six** marks. **(9×6=54)**

13. a) How are lipids digested and transported in body ?
    b) Define BMR. **(4+2)**

P.T.O.

14. a) Explain the proximate analysis of foods.
    b) Mention the role of sodium in glucose transport. (4+2)

15. a) How do you determine the calorific value of foods by Bomb calorimeter ?
    b) Give the source and biological importance of vitamin-A. (4+2)

16. a) Explain the mechanism of blood coagulation.
    b) Give the functions of hormones produced by Thyroid glands. (4+2)

17. a) Explain the concept of mutual supplementation and fortification of foods.
    b) Mention the important storage forms of carbohydrates. (4+2)

18. a) Give the sources and functions of :
        i) Folic acid
        ii) Cyanocobalamin.
    b) What are the symptoms of Kwashiorkor ? (4+2)

19. a) Write the synthetic functions of Liver.
    b) Give the characteristics of CSF. (4+2)

20. a) Describe the process of glomerular filtration in urine formation.
    b) What is peritoneal dialysis ? (4+2)

21. a) Explain the mechanism of nerve conduction across the synapse by a neurotransmitter.
    b) Mention any two hormones secreted by anterior pituitary. (4+2)

22. a) How is CO_2 transported from tissues to lungs ?
    b) What is chloride shift ? (4+2)

23. a) Discuss the structure and biological functions of collagen.
    b) Name any two hormones secreted by adrenal medulla. (4+2)

24. a) Discuss the dietary requirements during pregnancy and lactation.
    b) Mention any two factors affecting BMR. (4+2)

25. a) Explain with examples the characteristics of dense and loose connective tissue.
    b) What is renal failure ? (4+2)