

B.Sc. BIOTECHNOLOGY**SECOND SEMESTER****BIOCHEMISTRY-II****BBT- 203****Duration: 2 Hrs. 40 Mins.****Marks: 50**

$$\left\{ \begin{array}{l} \text{PART : A (OBJECTIVE) = 20} \\ \text{PART : B (DESCRIPTIVE) = 50} \end{array} \right\}$$
[PART-B:Descriptive]**[Answer question no. One (1) & any four (4) from the rest]**

1. Explain nitrogen cycle. Explain the different steps of urea cycle. 5+5=10
2. What is phytohormone? Briefly describe the tryptophan dependent pathway of auxin biosynthesis. Explain the functions of gibberellin. 1+5+4
=10
3. Explain the different hormones of adrenal gland. Explain the functions of hypothalamus. 7+3=10
4. What are fat soluble vitamin? Describe the functions of vitamin A, D, C and K. What is the deficiency symptom of vitamin B₁₂. 1+8+1
=10
5. What are neurotransmitter? Write a note on different types of neurotransmitter? Explain the function of neurotransmitter in transmission of nerve impulse. 1+4+5
=10
6. What are contractile protein? Briefly describe actin and myosin. Explain how actin and myosin slide along each other. 1+4+5
=10
7. What is transamination? Explain its mechanism with a suitable example. Define ketogenic, glucogenic, essential and non-essential amino acids. 1+5+4
=10
8. Briefly describe the de novo synthesis of UMP. Also explain the salvage pathway of purine synthesis. 7+3=10

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[PART-A : Objective]

Choose the correct answer from the following:

1×20=20

1. The conversion of nitrogen to ammonia or nitrogenous compounds is called
 a. Nitrogen assimilation
 b. Nitrogen fixation
 c. Denitrification
 d. Nitrification
2. Leghaemoglobin creates
 a. Anaerobic condition for optimum activity of nitrogenase
 b. Aerobic condition for optimum activity of nitrogenase
 c. Required oxygen concentration for optimum activity of nitrogenase
 d. Suitable environment for nodule formation
3. The first purine nucleotide that is fully formed in metabolism is
 a. AMP
 b. GMP
 c. IMP
 d. XMP
4. Which of the following statements about the urea cycle is correct?
 a. Arginosuccinate is lysed to urea and ornithine in the urea cycle
 b. Carbamoyl phosphate supplies both of the nitrogen atoms of urea in the urea cycle
 c. The formation of urea from the urea cycle yields energy
 d. Arginine is hydrolyzed to urea and ornithine in the urea cycle
5. Bleeding disease is due to deficiency of
 a. Vitamin A
 b. Vitamin D
 c. Vitamin E
 d. Vitamin K
6. Vitamin D deficiency is the reason for
 a. Rickets
 b. Anaemia
 c. Pellagra
 d. Goiter
7. Hormones are chemical messengers secreted by
 a. Exocrine gland
 b. Endocrine gland
 c. Both endocrine and exocrine gland
 d. kidneys
8. Hormones are substances that fall into two basic categories
 a. Stimulator hormone and receptor hormone
 b. Proteins and sugars
 c. Male hormone and female hormone
 d. Peptide hormone and steroid hormone
9. Posterior pituitary stores and secretes
 a. ADH and oxytocin
 b. Growth hormone and gonadotropin-releasing hormone
 c. Estrogen and testosterone
 d. Adrenaline and adrenocorticotrophic hormone
10. Growth hormone promotes
 a. Cell division
 b. Protein synthesis
 c. Bone growth
 d. All of the above
11. The function of oxytocin are
 a. Cause the uterus to contract
 b. Induce labor
 c. Stimulate the release of milk from the mother's mammary gland when her baby is nursing
 d. All of the above
12. Cytokinin are
 a. Adenine derivative
 b. Guanine derivative
 c. Cytidine derivative
 d. Thymine derivative
13. Translocation of cytokinin is polar and takes place through
 a. Xylem
 b. Phloem
 c. Both xylem and phloem
 d. Capillary rise
14. Precursor of indole acetic acid is
 a. Glycine
 b. Methionine
 c. Tryptophan
 d. Isopentenyl pyrophosphate

