REV-00 BBT/70/76

#### 2017/06

## B.Sc. BIOTECHNOLOGY SECOND SEMESTER BIOCHEMISTRY-II BBT- 203

Duration: 2 Hrs. 40 Mins.

Marks: 50

PART : A (OBJECTIVE) = 20 PART : B (DESCRIPTIVE) = 50

[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<br>pathway of auxin biosynthesis. Explain the functions of gibberellin.                          | 1+5+4<br>=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 $B_{12}$ .                              | 1+8+1<br>=10 |
| 5. | What are neurotransmitter? Write a note on different types of<br>neurotransmitter? Explain the function of neurotransmitter in<br>transmission of nerve impulse. | 1+4+5<br>=10 |
| 6. | What are contractile protein? Briefly describe actin and myosin. Explain how actin and myosin slide along each other.  | 1+4+5<br>=10 |
| 7. | What is transamination? Explain its mechanism with a suitable example.<br>Define ketogenic, glucogenic, essential and non-essential amino acids.                 | 1+5+4<br>=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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# B.Sc. BIOTECHNOLOGY SECOND SEMESTER BIOCHEMISTRY-II BBT- 203

Duration: 20Mins.

## [ 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 creats

- 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 secrets
  - a. ADH and oxytocin
  - b. Growth hormone and gonadotropin-releasing hormone
  - c. Estrogen and testosterone
  - d. Adrenaline and adrenocorticotropic 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

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Marks: 20

- 15. All are functions of gibberellin except
  - a. Promote cell elongation
  - **b.** Promote dormancy
  - c. Promote elongation of internodes
  - d. Promote parthenocarpic fruit formation
- **16.** Each time an action potential reaches the presynaptic terminal, a few vesicles at a time release the neurotransmitter into the
  - a. Postsynaptic membrane
  - **b.** Presynaptic membrane
  - c. Synaptic cleft
  - d. Synaptic junction
- 17. The contractile protein of skeletal muscle involving ATPase activity is
  - a. Actin
  - b. Myosin
  - c. Troponin
  - d. Tropomyosin
- 18. Urea is synthesized in
  - a. Cytoplasm
  - b. Mitochondria
  - c. Both cytoplasm and mitochondria
  - d. Lysosome
- 19. Example of ketogenic amino acid is
  - a. Alanine
  - b. Proline
  - c. Lysine
  - d. Glycine
- **20.** The end product pyrimidine synthesis is
  - a. Adenine 5' -monophosphate
  - b. Inosine 5'-monophosphate
  - c. Uridine 5'-monophosphate
  - d. Guanine 5'-monophosphate

**UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGHALAYA** 

| Unverting Excedence   | Question Paper  | A) : OBJECTIVE]   | Serial no. of the mai<br>Answer sheet |
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| Course :  |   |   | L                                     |
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| Full Marks | Marks Obtained | Remarks |
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Scrutinizer's Signature