

B. TECH FOOD TECHNOLOGY
Semester II Examination (2019)
Course Code- BFTC-206
Course Title - Introductory Biology

ROLL NO- _____

B.Tech
2019
2nd Sem.

TIME: 3 hours

Max. Marks: 70

Note: 1. It is compulsory to answer all the questions of Section-A.

2. Answer any four questions in Section- B.

Section-A (30 marks)

- Q1. (2M)
- (a) What are carbohydrates? Classify them with examples. (2M)
 - (b) What is the difference between prokaryotes and eukaryotes? (2M)
 - (c) Why are amino acids amphoteric in nature? (2M)
- Q2. (3M)
- (a) Mention key role of: mitochondria, endoplasmic reticulum, golgi bodies, in a cell. (3M)
 - (b) State Mendel's laws of genetics. (3M)
 - (c) State postulates of Lamarck's theory. (2M)
- Q3. (2M)
- (a) Mention factors which result in departure from Hardy-Weinberg equilibrium? (2M)
 - (b) What is the role of plasmid DNA in genetic engineering? (3M)
- Q4. (2M)
- (a) Differentiate between mitosis and meiosis (2M)
 - (b) Enlist and define essential amino acids. (6M)
- Q5. Answer the following multiple choice questions:
- A. Humoral immunity is a type of adaptive immunity that results in the circulation of which of the following throughout the blood?
a. Antigens b. Macrophages c. NK cells d. Antibodies
 - B. After consuming a banana shake, which hormones would be expected to increase?
a. Prolactin b. Glucagon c. Insulin d. Parathyroid hormone
 - C. Which of the following hormones would bind to receptors located on the inside of a cell?
a. Testosterone b. Growth hormone c. Prolactin d. Insulin
 - D. Enzyme peptidyl transferase helps in:
a. Catalyzing bonding between adjacent amino acids
b. Shifting ribosomes on mRNA
c. Transferring amino group from one amino acid to the other
d. Removal of tRNA after formation of peptide bond between amino acids.
 - E. Which of the following hormones would be expected to increase if you were studying all day for a test and skipped breakfast and lunch?
a. Insulin b. Glucagon c. Prolactin d. Adrenocorticoids
 - F. Which of the following glands is both an endocrine and exocrine gland?
a. Thyroid b. Adrenal c. Parathyroid d. Liver

Section- B (4*10=40 marks)

- Q1. Illustrate the structural changes that take place in a cell during various phases of meiotic prophase I. (10M)
- Q2. Who gave the double helical structure of DNA? Draw a well labeled diagram. (10M)
- Q3. Explain the process of DNA replication. (10M)
- Q4. Write short notes on the following (any 4): (10M)
- (a) RNA editing
 - (b) Ecological pyramid
 - (c) Phospholipids
 - (d) Mutations
 - (e) Bacterial cell structure
- Q5. Enlist various structural & functional components of nervous system. Define neuron and draw structure. Elaborate process of generation as well as conduction of nerve impulses. (10M)
- Q6. Define the following: Allele, Homologous chromosomes, Antibody, Passive immunity, Pyrimidine dimer, Codon, Chiasmata, TATA box, Evolution, Enhancer (10M)