



**BRAINWARE UNIVERSITY**

**Term End Examination 2023**  
**Programme – B.Tech.(ECE)-2019**

**Course Name – Biology**  
**Course Code - BSC(ECE)401**  
**( Semester IV )**

**LIBRARY**  
**Brainware University**  
**Barasat, Kolkata -700125**

Library  
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Kolkata

**Full Marks : 60**

**Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

**Group-A**

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) The tendency of an offspring to resemble its parent is known as \_\_\_\_
- a) Variation                                                 b) Heredity  
c) Resemblance                                                 d) Inheritance
- (ii) The tendency of an offspring to resemble its parent is known as \_\_\_\_
- a) Variation                                                 b) Heredity  
c) Resemblance                                                 d) Inheritance
- (iii) which of the following cell organelle is known as powerhouse of the cell?
- a) mitochondria                                                 b) nucleus  
c) endoplasmic reticulum                                                 d) lysosomes
- (iv) Enzymes are
- a) Proteins                                                 b) Carbohydrates  
c) Lipids                                                 d) None of these
- (v) The process of protein synthesis takes place in which of the following cell organelles?
- a) Nucleus                                                 b) Cytoplasm  
c) Vacuoles                                                 d) mitochondria
- (vi) Name the simplest amino acid
- a) Asparagine                                                 b) Alanine  
c) Tyrosine                                                 d) Glycine
- (vii) Cell membrane is a
- a) carbohydrate bilayer structure                                                 b) lipid bilayer structure  
c) protein bilayer structure                                                 d) nucleic acid bilayer structure
- (viii) The tendency of an offspring to resemble its parent is known as
- a) Variation                                                 b) Heredity  
c) Resemblance                                                 d) Inheritance
- (ix) Which of these bacterial components is least likely to contain useful antigens?

- a) flagella
- b) capsule
- c) ribosomes
- d) cell wall
- (x) Chromosomes are seperated during
  - a) Telophase
  - b) Prophase
  - c) Anaphase
  - d) Metaphase
- (xi) The alternate form of a gene is
  - a) Alternate type
  - b) Recessive character
  - c) Dominant character
  - d) Allele
- (xii) Which of the following statements is true about chromosomes?
  - a) It is present within the nucleus
  - b) It carries genes and helps in inheritance
  - c) It is composed of DNA in the form of Chromatin and protein
  - d) all of these
- (xiii) Which of the following is not a double membrane-bound organelle?
  - a) Chloroplast
  - b) Mitochondria
  - c) Endoplasmic Reticulum
  - d) all of these
- (xiv) Which of the following statements is true about proteins?
  - a) Proteins are made up of amino acids.
  - b) Proteins are essential for the development of skin, teeth and bones.
  - c) Protein is the only nutrient that can build, repair and maintain body tissues.
  - d) all of these
- (xv) Chromosome structure can be observed best during \_\_\_\_
  - a) Metaphase
  - b) Anaphase
  - c) Prophase
  - d) None of these

**Group-B**

(Short Answer Type Questions)  
(Answer any Five from the following)

3 x 5=15

- 2. What is meant by complementary base pairing? (3)
- 3. Define gene. (3)
- 4. What are Thylakoids? Where are they found? (3)
- 5. What is meant by phenotype? (3)
- 6. How do RNA and DNA differ chemically? (3)

OR

Define promoter. Mention its function in transcription. (3)

**Group-C**

(Long Answer Type Questions)  
(Answer any Six from the following)

5 x 6=30

- 7. Mention the differences between prokaryotic and eukaryotic cells. (5)
- 8. Describe the structural organisation of proteins. (5)
- 9. Explain the steps of DNA replication. (5)
- 10. Explain the structure and functions of different type of RNAs. (5)
- 11. Explain the process of protein biosynthesis (translation). (5)
- 12. What are the three types of asexual reproduction? Explain with examples. (5)

OR

Describe the process of pollination. (5)