

Reg. No. : .....

Code No. : 30404 E      Sub. Code : CAZO 11

B.Sc. (CBCS) DEGREE EXAMINATION,  
APRIL 2025.

First/Third Semester

Zoology — Allied

CELL BIOLOGY, GENETICS AND  
BIOTECHNOLOGY

(For those who joined in July 2021 and 2022 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The nucleus is discovered by  
(a) Lamark                      (b) Robert Brown  
(c) Pasteur                      (d) De Vries
  
2. Giant chromosome was discovered by  
(a) Dommer                      (b) Ruckerts  
(c) Balbiani                      (d) Brown

3. The most accepted method of DNA replication is  
 (a) Dispersive (b) Conservative  
 (c) Semi conservative (d) Non conservative
4. The treatment of cancer cells with drugs is  
 (a) Surgery (b) Chemotherapy  
 (c) Proto oncogenes (d) Radiotherapy
5. Select the name given to multiple gene inheritance.  
 (a) Polygenes (b) Multiple alleles  
 (c) Pleiotropic genes (d) Epistatic genes
6. Select the blood group which is called as universal recipient.  
 (a) B group (b) O group  
 (c) A group (d) AB group
7. Select the person who cannot differentiate the green colour.  
 (a) Dueteropia (b) Protonopia  
 (c) Albinism (d) Sickle cell anemia
8. Select the name given to the presence of hair in Pinna.  
 (a) Ichthyosis (b) Hypertrichosis  
 (c) Ctenophora (d) Haemophilia
9. Select the another name of the Lamda phage.  
 (a) Temperate phage (b) Lytic  
 (c) Lysogenic (d) Conjugants

10. Show the disease in which transgenic mice are used as a human disease models.  
 (a) Cancer (b) AIDS  
 (c) Diabetes (d) All of them

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Examine the functions of nucleus.  
 Or  
 (b) Illustrate the different types of chromosomes.
12. (a) Illustrate the properties of Cancer cells.  
 Or  
 (b) Sketch the structure of mRNA and explain.
13. (a) Illustrate the Rh factors in human.  
 Or  
 (b) Explain the simple mendelian traits in man.
14. (a) Explain the Sex determination in Man.  
 Or  
 (b) Illustrate the Turner's syndrome.
15. (a) Summarize the scope of Biotechnology.  
 Or  
 (b) Judge the merits and demerits of Transgenic animals.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the structure of mitochondria with diagram.  
Or  
(b) Illustrate the functions of the plasma membrane.
17. (a) Explain in detail about the structure and functions of tRNA with sketch.  
Or  
(b) Summarizes the mechanism of protein synthesis.
18. (a) Summarizes the Multiple alleles with suitable example.  
Or  
(b) Illustrate the erytheroblastosis foetalis.
19. (a) Assess the causes and inheritance of Colour blind ness.  
Or  
(b) Defend the inborn error metabolism.
20. (a) Evaluate the basic concept of Genetic engineering.  
Or  
(b) Summarise the gene transfer through Particle Bombardment method.