

15. (a) Give a brief note on the uses of genetic engineering.

Or

(b) Explain the characteristics of plasmids.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).  
Each answer should not exceed 600 words.

16. (a) Describe the functions of mitochondria.

Or

(b) Explain the functions of nucleus.

17. (a) Describe the chemical structure of DNA.

Or

(b) Write an essay on cancer cells.

18. (a) Describe the significance of erythroblastosis foetalis.

Or

(b) Describe the multiple alleles in man.

19. (a) Discuss about haemophilia.

Or

(b) Explain Alkaptonuria - as an inborn error of metabolism.

20. (a) Explain the importance of biotechnology.

Or

(b) Write an essay on cloning vectors.

Reg. No. : .....

Code No. : 20567 E Sub. Code : CAZO 11

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023

First/Third Semester

Zoology — Allied

CELL BIOLOGY, GENETICS AND BIOTECHNOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- The controlling center of the cell is \_\_\_\_\_  
(a) Chromosome (b) Nucleolus  
(c) Nucleus (d) Golgi complex
- The chromosomes with the centromere in proximal end is known as  
(a) Telocentric (b) Acrocentric  
(c) Metacentric (d) Submetacentric

3. Double helix model of DNA was discovered by  
 (a) Robert Hooke (b) Robert Brown  
 (c) Pauling (d) Watson and Crick
4. Which one of the following is called as factories of protein synthesis?  
 (a) rRNA (b) DNA  
 (c) Ribosomes (d) Nucleus
5. \_\_\_\_\_ is the universal recipient blood group.  
 (a) A (b) B  
 (c) AB (d) O
6. If a person has antigen A and B in RBC, which antibody will be present in the serum?  
 (a) antibody A  
 (b) antibody B  
 (c) antibody A and B  
 (d) no antibody
7. Colour blindness gene is linked in \_\_\_\_\_ chromosome.  
 (a) X and Y (b) X  
 (c) Y (d) Autosome
8. The diagnostic test for phenyl ketouria is \_\_\_\_\_  
 (a) Guthrie's test (b) Ferrichloride test  
 (c) DNA probing (d) All the three
9. Which one of the following is the science of applied biological processor?  
 (a) Microtome (b) Biotechnology  
 (c) Bioreactors (d) Nanotechnology
10. The first sheep produced in cloning was named as  
 (a) Dolly (b) Bubby  
 (c) Darling (d) Jimmy

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).  
 Each answer should not exceed 250 words.

11. (a) Explain the functions of plasma membrane.  
 Or  
 (b) What are the different types of chromosomes?
12. (a) Describe the structure of RNA.  
 Or  
 (b) Mention the properties of cancer cells.
13. (a) Discuss the genetics of Rh blood group.  
 Or  
 (b) Explain the inheritance of skin colour in man.
14. (a) Give a brief account on dawn syndrome.  
 Or  
 (b) Write a brief note on albinism.