

C 61259

(Pages : 3)

Name.....

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2019

(CUCBCSS—UG)

Zoology

ZOL 4C 04—GENETICS AND IMMUNOLOGY

Time : Three Hours

Maximum : 64 Marks

Part A

*Answer all ten questions.
Each question carries 1 mark.*

Identify the correct answer :

1. Which among the following is caused by chromosomal aberration ?
 - (a) Haemophilia.
 - (b) Klinefelter syndrome.
 - (c) Sickle cell anaemia.
 - (d) Alzheimer's disease.
2. The amino acids are brought to the ribosome by :
 - (a) rRNA.
 - (b) mRNA.
 - (c) miRNA.
 - (d) tRNA.
3. Splicing of DNA fragments is achieved by :
 - (a) DNA Polymerases.
 - (b) Restriction enzymes.
 - (c) DNA ligases.
 - (d) Spliceosomes.
4. ICSI is a technique used to treat :
 - (a) Cervical Cancer.
 - (b) AIDS.
 - (c) Ichthyosis.
 - (d) Infertility.
5. Which among the following can be used to confirm paternity ?
 - (a) Western blotting.
 - (b) ELISA.
 - (c) DNA finger-printing.
 - (d) Blood group analysis.

Name or fill up the following :

6. The one gene one enzyme theory was put forward by _____.
7. A cancer whose origin can be traced to embryonic cells is known as _____.

Turn over

8. The antibody that is capable of crossing the placental barrier is _____.
9. The technique used to transfer DNA from gels to membranes is _____.
10. The expansion of 'DPT' is _____.

(10 × 1 = 10 marks)

Part B

*Give short answers to any seven of the following questions.
Each question carries 2 marks.*

11. Explain the cause of phenylketonuria.
12. What is trisomy? What is its consequence?
13. State the Lyon hypothesis.
14. What is a chromosomal anomaly? What does it result in?
15. What is a pseudogene?
16. Sketch and label the structure of the tRNA.
17. What role does genetic engineering play in gene therapy?
18. What is a shuttle vector? What is its advantage?
19. What are the characteristic features of a cancer cell?
20. Give a brief account of leukaemia.

(7 × 2 = 14 marks)

Part C

*Answer any four of the following questions in about a paragraph each.
Each question carries 5 marks.*

21. Explain the genic balance theory with respect to *Drosophila*.
22. Citing one example, explain the phenomenon of mosaicism.
23. What is post-transcriptional modification? Where does it occur?
24. Distinguish between direct and vector mediated transfer of genes.
25. What are the different types of carcinogens? Give one example for each.
26. What are the benefits of pre-natal diagnostic testing?

(4 × 5 = 20 marks)

Part D

*Write an essay on any **two** of the following questions.*

Each question carries 10 marks.

27. How are chromosomes characterised according to the Denver scheme ?
28. Write an essay on Griffith's experiment. What did it prove ?
29. Give an account of the procedures involved in recombinant DNA technology.
30. Describe the transmission and aetiology of HIV and AIDS.

(2 × 10 = 20 marks)