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**M – 1523**

Reg. No. : .....

Name : .....

**Fifth Semester B.Sc. Degree Examination, December 2021**

**First Degree Programme under CBCSS**

**Zoology**

**Core Course VI**

**ZO 1543 : GENETICS AND BIOTECHNOLOGY**

**(2014 Admission)**

Time : 3 Hours

Max. Marks : 80

I. Answer the following questions. (In **one** or **two** sentences. **1** mark each)

1. Test cross.
2. Holandric genes.
3. Pleiotropism.
4. Intersex.
5. Significance of crossing over.
6. Edwards syndrome.
7. Southern blotting.
8. Gene dobing.
9. Monoclonal antibodies.
10. Biopiracy.

**(10 × 1 = 10 Marks)**

P.T.O.

II. Answer **any eight** of the following. (Not to exceed **one** paragraph. Each carries **2** marks.)

11. What is epistasis? Give examples.
12. Explain co-dominance citing one example.
13. Define linkage and crossing over.
14. What are barrbodies?
15. Comment on the cause and symptoms of Down syndrome.
16. Explain gynandromorphism.
17. Write notes an DNA vaccine.
18. Comment of therapeutic cloning.
19. Mention the applications of PCR.
20. What are transgenic organisms? Give an example.
21. What are franne shift mutations?
22. Distinguish between cosmids and plasmids.

**(8 × 2 = 16 Marks)**

III. Answer **any six** of the following. (Not to exceed 120 words. Each carries **4** marks)

23. Explain polygenic inheritance with reference to human skin colour.
24. What are Kappa particles? Explain its inheritance.
25. Describe criss-cross inheritance with a suitable example.
26. Describe any two sex chromosomal anomalies.
27. Distinguish between euploidy and aneuploidy.

28. What is DNA fingerprinting. Mention its applications.
29. Explain different types of gene therapy.
30. Write an account on gene transfer techniques.
31. Explain metabolic blocks with reference to Phenyl alanine-tyrosine metabolism in man.

**(6 × 4 = 24 Marks)**

IV. Answer **any two** of the following (Each carries **15** marks)

32. Explain various mechanisms of sex determination in animals.
33. What are multiple alleles? Explain with reference to ABO blood group inheritance in man.
34. Describe the various steps involved in recombinant DNA technology.
35. Write an account on practical applications of biotechnology in various branches of sciences.

**(2 × 15 = 30 Marks)**

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