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H – 6302

Reg. No. :

Name :

Fifth Semester B.Sc. Degree Examination, December 2019

First Degree Programme under CBCSS

Zoology

Core Course VI

ZO 1541 : GENETICS AND BIOTECHNOLOGY

(2015 Admission onwards)

Time : 3 Hours

Max. Marks : 80

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

1. Define pleiotropism.
2. What is a back cross?
3. What are plasmids?
4. What is bioethics?
5. Mention the role of taq polymerase.
6. What is polyploidy?
7. Name any two chemical mutagens.
8. Define epistasis.

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9. What is bioremediation?
10. Define gynandromorphism.

(10 × 1 = 10 Marks)

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

11. Mention any two applications of monoclonal antibodies.
12. Explain chromosome theory of heredity.
13. Differentiate between transition and transversion.
14. Differentiate between therapeutic and reproductive cloning.
15. What are lethal genes? Give an example of a lethal disorder in man.
16. Mention any two characteristics of cytoplasmic inheritance.
17. Define karyotype and idiogram.
18. Mention two salient features of human genome.
19. Explain tautomeric shifts.
20. Explain primary and secondary non-disjunction.
21. What is gene patent?
22. What is Lyon Hypothesis?

(8 × 2 = 16 Marks)

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

23. Explain the mechanism of crossing over.
24. Write a short account on different types of cloning vectors.

25. Explain the principle of DNA fingerprinting.
26. Explain sex chromosomal anomalies in man.
27. Explain chloroplast inheritance in four o'clock plant.
28. Write briefly on structural aberrations in chromosome.
29. Explain the production of monoclonal antibodies.
30. Explain sex linked inheritance in man with an example.
31. Comment briefly on transgenic organisms.

(6 × 4 = 24 Marks)

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

32. Write an account on different types of blotting techniques.
33. Write an essay on the practical applications of biotechnology.
34. Explain ABO and Rh group inheritance in man.
35. Write an essay on human biochemical genetics.

(2 × 15 = 30 Marks)