

FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, APRIL 2020**Biotechnology****BTY 4B 05—GENETICS**

Time : Three Hours

Maximum : 80 Marks

Section A*Answer any two out of four questions in about 1,500 words.**Each question carries 10 marks.*

1. What are the factors affecting Hardy- Weinberg equilibrium ?
2. What are the different methods of bacterial gene transfers ?
3. Narrate the inheritance pattern of haemophilia ? Why is it called criss cross inheritance ?
4. What are the different numerical aberrations in chromosome ?

(2 × 10 = 20 marks)

Section B*Answer any seven out of fourteen questions in about 750 words.**Each question carries 5 marks.*

5. Write a note on inheritance of Shell coilage in Apple snail.
6. Briefly explain epistasis with different epistatic interactions.
7. What are the steps involved in gene mapping ?
8. Narrate the Mendel's Laws of inheritance with suitable examples.
9. Briefly explain the organisation of eukaryotic chromosomes.
10. What are the different human aneuploidy disorders involving sex chromosomes ?
11. Briefly explain the different mechanisms of sex determination in animals.
12. What is pleiotropism ? Explain with a suitable example.
13. What are the characteristics of polygenic inheritance ?
14. What are the different modes of speciation ?
15. Briefly explain the human genome project.
16. What is meant by genomic imprinting ? Explain with a suitable example.

Turn over

17. What are autopolyploidy and allopolyploidy ? Explain with examples.
18. What are the different types of plasmids ?

(7 × 5 = 35 marks)

Section C

Answer all questions in about 300 words.

Each question carries 3 marks.

19. What are phylogenetic trees ?
20. What is meant by genetic drift ?
21. What are the different chromosome banding techniques ?
22. What is multiple allelism ?
23. What is pedigree analysis ?

(5 × 3 = 15 marks)

Section D

Answer all questions in about 200 words as brief notes.

Each question carries 2 marks.

24. Auxotrophs.
25. RNA viruses.
26. Molecular clock.
27. Replica plating.
28. Down's syndrome.

(5 × 2 = 10 marks)