E 7546 (Pages : 2) Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2017

Third Semester

Core Course 10 – GENETICS

(For B.Sc. Biotechnology)

[2013 Admission onwards]

Time : Three Hours Maximum Marks : 80

Part A (Short Answer Questions)

Answer **all** *questions.*

Each question carries 1 *mark.*

1. What is nucleosome?
2. What is a recessive character?
3. What are lethal genes?
4. Give an example for sex linked inheritance in man.
5. What is linkage?
6. Define Semidominance.
7. What is Satellite DNA?
8. What is a genotype?
9. Write about Lyon hypothesis.
10. Write F2 dihybrid genotypic ratio.

(10 × 1 = 10)

Part B (Brief Answer Questions)

Answer any **eight** *questions.*

Each question carries 2 *marks.*

11. Differentiate Heterochromatin and Euchromatin.
12. What is genetic equilibrium?
13. Differentiate Homologus and Heterologous chromosomes.
14. Explain dosage compensation.
15. What is pleiotropy?
16. What is synaptonemal complex? Mention its significance.

Turn over

17. Explain Chromosome theory.
18. Explain test cross and back cross.
19. Write about types of chromosomes based on shape.
20. Write about characters of pea plants selected by Mendel for his experiments.
21. Give an account of giant chromosomes.
22. Explain Crossing over.

(8 × 2 = 16)

Part C (Short Essays)

Answer any **six** *questions.*

Each question carries 4 *marks.*

23. Give an account of inborn errors of metabolism.
24. Explain Mendelian laws of Inheritance.
25. Write a note on Aneuploidy.
26. Explain mapping of genes.
27. What is polyploidy? Explain its significance.
28. Explain polygenic inheritance.
29. Write a note on structure of chromosomes.
30. Give an account of epistasis.
31. Explain chromosome banding and its uses.

(6 × 4 = 24)

Part D (Essays)

Answer any **two** *questions.*

Each question carries 15 *marks.*

32. Describe extrachromosomal inheritance with examples.
33. Explain multiple alleles and ABO blood typing.
34. Explain the following :
    (a) Hardy Weinberg equilibrium.
    (b) Allelic frequency.
    (c) Assertive and Random mating.
35. Explain various sex determination mechanism.

(2 × 15 = 30)