C 3976 **(Pages : 2)** **Name**

Reg. No. . . . . .

FOU..TH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2016

(CUCBCSS–UG)

Core Course – 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. **Explain Mendel's law of segregation and independent assortment with suitable examples**
2. **Describe structure and organisation of chromosome**
3. **Discuss the natural gene transfer mechanisms in bacteria**
4. **Explain various factors that influence Hardy-Weinberg equilibrium.**

(2 x 10 = 20 marks)

Section B

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

5. **What are the characters of multiple alleles? Explain with example.**
6. **Explain replica plating technique and its advantage.**
7. **Illustrate maternal effect with example.**
8. **Discuss the significance of linkage and crossing over.**
9. **Explain the features of euchromatin and heterochromatin.**
10. **Discuss the genetics of blood grouping.**
11. **Give an account on sex linked inheritance.**
12. **Discuss the characteristics of quantitative inheritance and how it differ from qualitative inheritance.**
13. **Discuss about different kind of syndrome occur due to sex chromosomal abnormalities.**
14. **Explain replication of RNA viruses.**
15. **Explain molecular evolution with suitable examples.**
16. **What is auxotroph? Describe replica plating technique.**
17. **What is euploidy? Explain different types of euploidy.**
18. **What is pedi gree analysis? Explain with suitable example.**

(7 x 5 = 35 marks)

Turn over

Section C

Answer **all** *questions in about* **300** *words.*
Each question carries **3** *marks.*

19. **Structure and organisation of nucleosome.**
20. **Give an account on different types of plasmids.**
21. **Explain chrome theory of inheritance.**
22. **What is complementation? Explain with example.**
23. **What is karyotyping? Explain different types of chromosome banding.**

(5 x 3 = **15** marks)

Section D

Answer **all** *questions in about* **200** *words.*
Each question carries 2 *marks.*

24. Epistasis.
25. Genetic Drift.
26. Natural selection.
27. Pleiotropism.
28. Sexduction.

(5 x 2 = 10 mar