

B.Sc. 2nd Semester New Scheme Examination,

May-2017

BIOTECHNOLOGY

Paper-BT-203

Genetics

Time allowed : 3 hours]

[Maximum marks : 40

Note : There are nine questions in all. Question No. 1 is compulsory. Attempt four more questions selecting at least one question from each unit.

1. (a) What is dihybrid cross ? 1
- (b) Pleiotropy 1
- (c) What are lethal genes ? 1
- (d) Define expressivity. 1
- (e) What is satellite DNA ? 1
- (f) What are VNTRs ? 1
- (g) What do you understand by LINEs and SINEs ? 1
- (h) What is karyotype ? 1

Unit-I

2. What are the various stages of cell cycle ? Explain the different stages along with control points that regulate the cell cycle. 8

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3. Write short notes on :
- (a) Law of segregation 4
 - (b) Co-dominance 4

Unit-II

4. Write short note on :
- (a) Epistaxis 4
 - (b) Satellite DNA 4
5. What are various characteristics of Eukaryotic nuclear genome ? Discuss morphology and organisation. 8

Unit-III

6. What are different types of chromosomes and gene mutations ? Explain. 8
7. Write short note on :
- (a) Mechanism of sex determination 4
 - (b) Dosage compensation 4

Unit-IV

8. (a) What do you understand by genetic mapping ? Explain. 4
- (b) What is the molecular mechanism of crossing over? 4
9. Write short note on :
- (a) Inbreeding and Out breeding 4
 - (b) Natural selection 4