Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 09

B.Sc.(BT) (2013 to 2017)   (Sem.–2)
GENETICS
Subject Code : BSBT-110
Paper ID : [F0234]

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Q1.   Answer briefly :

a) Define a mutation.

b) What is gene therapy?

c) Define non-sense codons.

d) Define sex linked inheritance.

e) What is operon?

f) Who proposed one gene one enzyme hypothesis?

g) What is splicing? Where it is present?

h) What is SCID disease?

i) What is dosage compensation?

j) Define t-RNA.

SECTION-B

Q2. Explain the methodology involved in analysing a mutation in biochemical pathway of prokaryotes.

Q3. In a population with two alleles for certain locus, B and b, the allele frequency of B is 0.7.What is the frequency of heterozygotes if the population is in Hardy Weinberg Equilibrium?

Q4. Discuss about different genetic factors that affect immunity of an individual.

Q5. Explain replica plating method for isolation of auxotrophs.

Q6. Discuss gene organisation in prokaryotes.

SECTION-C

Q7. Explain any two :

a) Cytoplasmic inheritance

b) Gene prediction

c) Human genome sequencing project

d) Trp operon

Q8. Explain the initiation step of eukaryotic transcription.

Q9. Discuss about different types of genetic diseases related to chromosomal aberrations.