

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

**P1037**

**[5317] - 101**

**S.Y.B.Sc.**

**BIOTECHNOLOGY**

**Bb-211 : Genetics & Immunology**

**(2013 Pattern) (Semester - I)**

*Time : 3 Hours]*

*[Max. Marks : 80*

*Instructions to the candidates:*

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*
- 3) Draw neat and labelled diagrams wherever necessary.*

**Q1)** Answer the following:

**[10×2=20]**

- a) Define co-dominance with example.
- b) What is autosomal recessive disease?
- c) What is allopolyploidy?
- d) What are hot spot mutation?
- e) Enlist any four types of bacterial plasmid.
- f) What is sex linked inheritance? Give one example.
- g) Give genes and their products in arabinose operon.
- h) Write cause and characters of Edward Syndrome.
- i) What is competence?
- j) State Hardy-Weinberg principle.

**Q2)** Answer the following:

**[5×2=10]**

- a) What are MHC?
- b) Enlist any two factors responsible for antigenicity.
- c) Give the role of Fc region.
- d) Give application of agglutination reaction.
- e) Justify Vaccine also called as artificial active immunity.

**P.T.O.**

**Q3)** Attempt any three of the following: **[3×5=15]**

- a) Write a note on pleiotropism.
- b) What is linkage? Describe Incomplete linkage with example.
- c) Discuss the process of bacterial conjugation.
- d) What is dosage compensation? Explain the Mechanism of dosage compensation.

**Q4)** Attempt any three of the following: **[3×5=15]**

- a) Enlist chemical mutagenic agent. Explain mechanism of action of alkylating agent.
- b) With the help of neat labelled diagram explain the mechanism of generalised transduction.
- c) What is epistasis? Explain dominant epistasis with example.
- d) Describe transposable element in maize and drosophilla.

**Q5)** Attempt any one of the following: **[1×10=10]**

- a) Describe in detail catabolite repression in lac operon.
- b) What are chromosomal aberration? Explain any two types of structural aberration with reference to their types mechanism and biological significance.

**Q6)** Attempt any two of the following: **[2×5=10]**

- a) Explain the role of GALT, BALT & MALT in immune system.
- b) Justify: The principal of ELISA and Western blot are one and same.
- c) Describe the structure of antibody molecule. Add a note on its function.
- d) Discuss type II hypersensitivity with example.

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