

Paper Code: BT13

Roll No.

M.Tech.
(SEM I) ODD SEMESTER EXAMINATION 2015-16
GENETICS, MOLECULAR BIOLOGY AND IMMUNOLOGY

[Time: 3 hrs.]

[Max. Marks: 100]

Note- Attempt All Questions. All Questions carry equal marks:-

1. Answer any *Two* parts of the following questions. (10x2 = 20)
 - (a) Describe the types of mistakes that occur in DNA
 - (b) Explain structure of a DNA molecule with suitable diagram
 - (c) Give an overview on genetic code
2. Attempt any *Two* parts of the following questions. (10x2 = 20)
 - (a) Differentiate between genome organization of prokaryotes and eukaryotes
 - (b) Describe various phase of transcription
 - (c) What is polyploidy? Is it adventitious to organisms?
3. Attempt any *Two* parts of the following questions. (10x2 = 20)
 - (a) Give an account of Mendelian laws with suitable punnet square.
 - (b) What are the characteristics of a DNA molecule that makes it an ideal hereditary molecule?
 - (c) Innate and adaptive immunity act in cooperative and interdependent ways to protect the host. Discuss the collaboration of these two forms of immunity.
4. Attempt any *Two* parts of the following questions. (10x2 = 20)
 - (a) State the central dogma. In case of certain viruses RNA is the genetic material. Explain the mechanism as to how RNA will be used to multiply itself.
 - (b) Give a detailed account on immunoglobulins with their structure and functions.
 - (c) Explain the three types of purified molecules that are currently used as vaccines.
5. Write short note on any *Four* of the following. (5x4 = 20)
 - (a) Humoral immunity
 - (b) Replication
 - (c) Mutation
 - (d) Translation
 - (e) DNA vaccines
 - (f) mRNA processing