

**M. SC. (BIOTECHNOLOGY) SEM-III (2012 COURSE)(CHOICE  
BASED CREDIT SYSTEM) : WINTER - 2017  
SUBJECT : HUMAN GENETICS**

Day : **Monday**

Time : **10.00 AM TO 01.00 PM**

Date : **13/11/2017**

**W-2017-0974**

Max. Marks : 60

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**N. B. :**

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Attempt **ANY TWO** questions from remaining questions in Section – I and Section – II.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Answers to both the sections should be written in **SEPARATE** answer books.
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**SECTION - I**

- Q. 1** Attempt **ANY FIVE** of the following in brief: **(10)**
- a) What is a dihybrid cross?
  - b) Explain lethal alleles giving suitable example.
  - c) Enlist any four inborn errors of lipid metabolism.
  - d) What is genomic imprinting?
  - e) State the cause and symptoms of Edward's syndrome.
  - f) What is a Barr body?
- Q. 2** a) Explain the phenomenon of epistasis giving suitable example. **(05)**  
b) Explain the role of "Y" chromosome in sex determination. **(05)**
- Q. 3** a) Describe the cell division process leading to formation of gametes. **(05)**  
b) Give an account on linkage analysis. **(05)**
- Q. 4** Write short notes on **ANY TWO** of the following: **(10)**
- a) Co-dominance
  - b) Mitochondrial genetic defects
  - c) Pedigree analysis

**SECTION - II**

- Q. 5** Attempt **ANY TWO** of the following: **(10)**
- a) Name the disease caused due to monosomy of X chromosome. State its symptoms and pattern of inheritance.
  - b) State the cause and symptoms of Down's syndrome.
  - c) What is Population Genetics? What are the assumptions of H-W principle?
- Q. 6** a) What is prenatal diagnosis? Enlist the techniques used for it. Describe any one of them. **(05)**  
b) Enlist inborn errors of carbohydrate metabolism. Describe any two of them. **(05)**
- Q. 7** Write short notes on: **ANY TWO** **(10)**
- a) Structural chromosomal abnormalities
  - b) X – linked diseases
  - c) FISH
- Q. 8** Attempt **ANY ONE** of the following: **(10)**
- a) Give an account on Mendel's experiments and conclusions for elucidation of his two laws.
  - b) Give an account on various mutational diseases and their inheritance.

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