

M. Sc. (Medical Biotechnology) Sem-II (Choice Based Credit System) :

SUMMER - 2019

SUBJECT: MEDICAL GENETICS

Day: Thursday
Date: 04/04/2019

S-2019-1504

Time : 10.00 AM TO 01.00 PM
Max. Marks : 60

N. B.

- 1) Question No. 1 & Q. No. 5 are **COMPULSORY**.
- 2) Out of the remaining questions attempt **ANY TWO** from section –I and Section – II.
- 3) Figures to the **RIGHT** indicate full marks.
- 4) Attempt section I & Section II on **SAME** answer books

SECTION - I

- Q.1** Attempt **ANY FIVE** of the following in brief. (10)
- a) What is a Barr body?
 - b) Define i) Monosomy and ii) Triploidy
 - c) What is Philadelphia chromosome?
 - d) State the Hardy-Weinberg law.
 - e) Define frame shift mutations.
 - f) What are XP genes? State their role.
- Q.2** a) Why breeding of F1 generation tall plants yielded tall as well as short plants in Mendel's experiments (05)
b) Explain epistasis giving suitable example. (05)
- Q.3** a) What is X-inactivation? (05)
b) Describe the type of cell division leading to formation of gametes. (05)
- Q.4** Write short notes on **ANY TWO** of the following: (10)
- a) Extrachromosomal inheritance
 - b) Multiple alleles
 - c) Linkage analysis

SECTION - II

- Q.5** Attempt **ANY TWO** of the following: (10)
- a) What are chromosomal abnormalities? Describe any two of them.
 - b) Explain the cause, symptoms and mode of inheritance of hemophilia.
 - c) What is prenatal diagnosis? Write the methods used for sampling of fetal cells.
- Q.6** a) Explain the method and applications of karyotype analysis. (05)
b) State the principle of Fluorescence In Situ Hybridization. Give its applications. (05)
- Q.7** a) Enlist inborn errors of lipid metabolism. Describe any two of them. (05)
b) Explain the concept and advantages of genetic counseling. (05)
- Q.8** Write short notes on **ANY TWO** of the following: (10)
- a) Klinefelter's syndrome
 - b) Fragile X- syndrome
 - c) Familial hypercholesterolemia

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