

M. Sc. (Biotechnology) Sem-III (2012 Course)(Choice Based Credit System) : WINTER - 2018
SUBJECT: HUMAN GENETICS

Day: Tuesday
Date: 30/10/2018

W-2018-1213

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

N.B:

- 1) Q.No.1 and Q.NO.5 are **COMPULSORY**. Out of remaining solve **ANY TWO** from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the sections should be written in **SEPARATE** answer books.
- 4) Draw neat labeled diagram **WHEREVER** necessary.

SECTION-I

- Q.1** Answer **ANY FIVE** of the following: **(10)**
- a) What do you mean of “allele”?
 - b) Define co-dominance and multiple alleles.
 - c) Enlist types of mutations.
 - d) What is implantation?
 - e) Enlist cellular activity during cell division at anaphase.
 - f) What is trisomy? Give two examples of it.
- Q2.** a) Give an overview of sex determination in human and describe the role of Y chromosome. **(05)**
- b) Explain epistasis and pleiotrophy. **(05)**
- Q3.** a) Define mutation. Give types and causes of mutations. Explain point mutation. **(05)**
- b) Enlist genetic causes of spontaneous abortion. Describe any one with suitable example. **(05)**
- Q4.** Answer **ANY TWO** of the following:
- a) How meiosis does important in creating variation? Give overview meiosis I and II. **(05)**
 - b) What is ABO and Rh blood group? How this system does differ from strict dominant or recessive alleles? **(05)**
 - c) Explain 45, XO syndrome. Give signs and symptoms of disorders and inheritance pattern. **(05)**

SECTION-II

- Q5** a) What is cystic fibrosis? Explain the inheritance pattern of cystic fibrosis. **(05)**
- b) What is gene therapy and explain its role in cancer treatment? **(05)**
- Q6** a) Explain with suitable example inborn error. **(05)**
- b) Enlist the cell division check points and its role in cancer. **(05)**
- c) Discuss how chromosomal abnormalities can initiate cancer? **(05)**
- Q.7** a) Write short note on Jacobe syndrome. **(05)**
- b) Enlist the characteristic of cancer cells. **(05)**
- Q.8** a) Enlist mitochondrial genetics defects and explain the inheritance pattern. **(05)**
- b) Enlist various molecular techniques and its applications in cancer diagnosis. **(05)**

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