

6. (a) What do you understand by Prenatal Testing? Why is it important? Explain the different non-invasive methods for prenatal diagnosis. (9)

(b) Write short notes on (Any two)

- (i) Achondroplasia
- (ii) Colorblindness
- (iii) Cystic fibrosis (4.5×2=9)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5809

H

Unique Paper Code : 3184002005

Name of the Paper : Understanding Genetic Basis of Disease (GE)

Name of the Course : B.Sc. (H) Biomedical Science (NEP)

Semester : IV

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **all** the questions.
3. Choices are given within every question.
4. Give illustrations and examples wherever required.

5809

2

1. (a) Define the following (Any six) (6×2=12)

- (i) Homologous chromosome
- (ii) Allele
- (iii) Translocation
- (iv) Non Disjunction
- (v) Chiasmata
- (vi) Mutation
- (vii) Polyploidy
- (vii) Dominant

(b) Differentiate between the following (Any two)
(3×2=6)

- (i) B-DNA and Z-DNA
- (ii) Somatic and germline mutation
- (iii) Paracentric and pericentric inversion

2. (a) Explain the structure of DNA as explained by Watson and crick. (9)

5809

3

(b) What are structural chromosomal abnormalities?
Explain any two with the help of examples. (9)

3. (a) What is aneuploidy? What are the potential causes of aneuploidy? (9)

(b) Who discovered sex-linked inheritance? With the help of an example explain the concept of sex-linked inheritance (9)

4. (a) What are the symptoms, risk factors and genetic basis of Alzheimer's disease? (9)

(b) 'Cancer is not a single disease, but rather a group of diseases'. Justify this statement in detail. How cigarette smoke may be a potential cause for lung cancer? (9)

5. Elaborate (any three) (6×3=18)

- (a) Genome imprinting
- (b) Sickle cell anaemia
- (c) Pea plant as a model organism
- (d) Heterochromatin

P.T.O.