

5/H-63 (vi) (Syllabus-2015)

2017

(October)

ZOOLOGY

(Elective/Honours)

SIXTH PAPER

(**Cell and Molecular Biology and Genetics**)

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Answer Question No. 1 and **any four** from the rest

1. Write in brief on any *three* of the following : 4×3=12

- (a) Major Histocompatibility Complex (MHC)
- (b) Genetic code
- (c) Gene mutation
- (d) Dosage compensation
- (e) Paper chromatography

(Turn Over)

(2)

2. What is an operon? Give a detailed account of the Lac operon. $2+9=11$

3. What is transcription? With the help of illustrations, describe the process of transcription in prokaryotes. What is the role of a promoter in transcription? $2+7+2=11$

4. What is a karyotype? Describe how Down's syndrome, Turner's syndrome and Klinefelter's syndrome are genetic disorders in man. $2+3+3+3=11$

5. What are immunoglobulins? Write a note on the structure and functions of the major classes of immunoglobulins found in man. $3+8=11$

6. What is centrifugation? Describe the principle involved in centrifugation and add a note on the biological applications of centrifugation. $2+7+2=11$

7. What do you mean by sex-linked inheritance? What are the main characteristics of sex-linked inheritance? With the help of illustrations, describe the pattern of inheritance of sex-linked genes taking one example each in *Drosophila* and man. $2+2+7=11$

8D/284

(Continued)

(3)

8. Write short notes on any two of the following : $5\frac{1}{2}\times 2=11$

(a) Transposons

(b) Phenylketonuria

(c) Cytokines

8D-1100/284

5/H-63 (vi) (Syllabus-2015)