

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

2018

(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) Genetic code
- (b) Detection of mutation in *Drosophila* using Muller's CIB method
- (c) Kappa particles in *Paramecium* as an example of extranuclear inheritance
- (d) Major histocompatibility complex
- (e) Centrifugation

(Turn Over)

2. What is DNA replication? Discuss the role of different enzymes and proteins involved in the process. 2+9=11
3. What is DNA damage? What are the different sources of DNA damage? Discuss various mechanisms of DNA repair. 1+2+8=11
4. What is sex determination? Elaborate on the sex determination system in human. Explain the characteristics of X-chromosomes in human female with reference to dosage compensation. 2+5+4=11
5. What is immunity? Distinguish between humoral and cell-mediated immune response. 2+9=11
6. What is translation? Describe the process of translation in prokaryotes with the help of illustrations. 2+9=11
7. Discuss the principles involved in microscopy. Differentiate between light and electron microscopy. 5+6=11
8. Write short notes on any *two* of the following: 5½×2=11
 - (a) Colour blindness in man as an example of sex-linked inheritance
 - (b) Down's syndrome
 - (c) Genic balance theory
