

**2/EH—63 (ii) (Syllabus—2015)**

**2017**

**( April )**

**ZOOLOGY**

**( Elective/Honours )**

**SECOND PAPER**

**( Cell 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. Answer any *three* of the following :  $4 \times 3 = 12$
- (a) Write down the differences between prokaryotes and eukaryotes.
  - (b) Give an account of the Tay-Sachs disease.
  - (c) Why are lysosomes called the suicidal bags of a cell?
  - (d) Explain Mendel's law of segregation.

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- (e) Differentiate between primary and secondary constrictions of chromosome.
2. (a) Give an account of the ultrastructure of Golgi complex. 6  
(b) Mention its important functions. 5
3. (a) Describe the different types of chromosomal aberrations in relation to their structures. 6  
(b) Explain the chromosomal theory of inheritance. 5
4. (a) Define immunity. Explain briefly the mechanism of cell-mediated immunity. 1+5=6  
(b) Differentiate between active and passive immunities. 5
5. (a) What is cancer? Classify the different types of cancer according to tissue types. 1+5=6  
(b) Write a note on the characteristic features of cancer cells. 5
6. (a) Differentiate between mitosis and meiosis. 6  
(b) Write a note on the significance of meiosis. 5

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7. (a) Explain the cellular activities that are likely to occur at  $G_1$ , S and  $G_2$  phases of the cell cycle. 6  
(b) Write a note on lampbrush chromosome. 5
8. Write short notes on any two of the following :  $5\frac{1}{2} \times 2 = 11$   
(a) Mitochondria  
(b) Carcinogens  
(c) Pleiotropic genes  
(d) Crossing-over

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