

**2/EH-63 (ii) (Syllabus-2015)**

**2 0 1 8**

( 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 questions : 4×3=12

- (a) Write briefly about different types of ribosomes and mention their functions.
- (b) What are the important features of polytene chromosomes?
- (c) Explain cell cycle and its regulation with a suitable diagram.

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- (d) What is incomplete dominance? Give an example.
- (e) Explain pleiotropic genes with example.
2. (a) Write a note on the fluid mosaic model of plasma membrane with a proper diagram. 5
- (b) Explain active and passive transports with suitable examples. 6
3. (a) What is chromatin? Write a note on chemical composition of chromatin. 6
- (b) In human female, one of the X-chromosome is inactivated. Explain. 5
4. (a) Give a brief account of the meiotic prophase-I with proper diagram. 6
- (b) What are T-lymphocytes and B-lymphocytes? Write a note on their functions. 5
5. (a) Explain multiple alleles with reference to ABO type blood groups in man. 6
- (b) Deduce Mendel's principle of independent assortment with suitable cross. 5

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6. (a) Write a note on different types of structural chromosomal aberrations. 6
- (b) Explain linkage with a suitable example. 5
7. (a) What is centromere? How are chromosomes classified on the basis of position of centromere? 6
- (b) Explain lethal gene interaction with reference to sickle cell anemia. 5
8. Write short notes on any *two* of the following :  $5\frac{1}{2} \times 2 = 11$
- (a) Mitochondria
- (b) Innate and acquired immunity
- (c) Genic balance theory

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