

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

**2 0 1 9**

**( April )**

**ZOOLOGY**

**( Elective/Honours )**

**( 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) Distinguish between prokaryotic and eukaryotic cells.
- (b) What are constitutive and facultative heterochromatins?
- (c) Classify cancer on the basis of types of tissues.
- (d) Explain backcross and testcross.
- (e) Explain the method of sex determination in man.

( 2 )

2. Give an account of ultrastructure of a mitochondrion with suitable diagram. Write a note on four respiratory complexes found in inner mitochondrial membrane. 7+4=11
3. Write an account of the characteristic features of polytene and lampbrush chromosomes. What are the major points of differences between these two chromosomes? 8+3=11
4. Give an account of various phases of mitosis in animal cells with proper labelled diagrams. Write a note on the significance of mitotic cell division. 8+3=11
5. Explain the terms 'innate' and 'acquired immunity'. Give an account of different types of acquired immunity. 5+6=11
6. (a) A man with blood group A marries a woman of having blood group B. What are the possible genotypes and phenotypes with reference to homozygotes and heterozygotes? 5
- (b) Discuss the gene interaction with reference to complementary and supplementary types. 6

D9/1610

( Continued )

( 3 )

7. (a) What is linkage? Explain complete and incomplete linkages with suitable examples. 6
- (b) Discuss about different types of aneuploidy. 5
8. Write short notes on any two of the following : 5½×2=11
- (a) Crossing over and its significance
- (b) Ribosome
- (c) Mendel's principles of inheritance

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