

M.Sc. Zoology Semester – II Examination

April 2017

CODE: 20592

Paper Zoo: 05

[Genetics and Radiation Biology]

Time: 2.5 Hours

Total Marks – 70

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- Instruction: 1) Attempt all questions.
2) Figures on right indicate the marks.
3) Draw labeled diagram wherever required.

- Que. 1 Describe: a. Topological property of double stranded DNA. 07
b. Describe mechanism of type –I topoisomerases in bacteria. 07
OR
- Que. 1 Describe: a. Mechanism for the alteration of linking number by eukaryotic 07
type IIA topoisomerases
b. Role of SMC protein in DNA packaging during cell division. 07
- Que. 2 Describe human chromosome in detail. 14
OR
- Que. 2 Explain chromosomal aberrations. 14
- Que. 3 Explain replication of DNA. 14
OR
- Que. 3 Explain dominant and recessive Epistasis gene inter action. 14
- Que. 4 Describe *Lac* operon system. 14
OR
- Que. 4 Explain: a. Base excision repair mechanism. 07
b. Several key properties of the genetic code. 07
- Que. 5 a. What is radiation? Describe kinds of radiation with examples. 07
b. Explain the effect of radiation of any three bio molecules. 07
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- OR
- Que. 5 a. Explain with diagram radiation effect on hemopoietic organs. 07
b. Describe the characteristics of cancer cells. 07