



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION - ZOOLOGY

THIRD SEMESTER – NOVEMBER 2013

ZO 3950 - GENOMICS, METAGENOMICS & EPIGENETICS

Date : 12/11/2013
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

SECTION-A

Answer **ALL** the questions.

(10 x 2=20)

1. Comment on Pluripotent stem cell.
2. Differentiate orthologs from paralogs.
3. State the significance of bioinformatics.
4. Write the function of 16s rDNA.
5. What is functional genomics?
6. List down the application of 5-Azacytosine.
7. What is Phytostabilization?
8. Comment on Introns and Exons.
9. Mention the importance of *de novo* sequence.
10. Define Mutagenesis.

SECTION –B

Answer **any FOUR** questions.

(4 x 10=40)

11. Elaborate the types of mutagenesis and their applications.
12. How does DNA Methylation results in transcriptional repression in mammals?
13. Explain the principle, procedure and application of DNA Microarray.
14. Write notes on different types of phyto-remediation process.
15. Explore the analysis of transposable elements in biological research.
16. What is epigenetics? How do epigenetics affect genes and causing cancer?

SECTION-C

Answer **any TWO** questions.

(2 x 20=40)

17. Explain how fluorescent *in situ* hybridization technique is used to eukaryotic genomes.
18. Write an essay on Human Genome Project.
19. Explain the types of bioinformatics tools and application of programmes in Bioinformatics.
20. Discuss the origin, types, *in vitro* and *in vivo* applications of pluripotent stem cells.
