17P222 (Pages: 2) Name…….

Reg. No……..……..

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, MAY 2018

(CUCSS - PG)

(Zoology)

CC17P ZO2 C05 - MOLECULAR BIOLOGY AND CYTOGENETICS

(2017 Admission: Regular)

Time: Three Hours Maximum: 36 Weightage

I. Answer ***all*** questions. Each question carries 1 weightage.

1. Name a translational inhibitor. Specify its mode of action.
2. Write the mechanism of mismatch repair of DNA.
3. What is a repressible operon? Give one example.
4. Write the role of modification system as a safeguard system of DNA.
5. Comment on gRNA.
6. What are molecular chaperones?
7. What is a developmentally controlled complex multigene family? Give an example.
8. What are IS elements?
9. Differentiate between benign and malignant tumour.
10. Type II restriction enzymes.
11. Give the details of any one new therapeutic intervention of cancer.
12. Write notes on *Drosophila P* elements.
13. Give the karyotypes of Edwards syndrome and Klinefelter syndrome.
14. Write the significance of tumour suppressor genes.

(14 x 1 = 14 Weightage)

II. Answer any ***seven*** questions. Each question carries 2 weightage.

15. Explain the role of telomerase in eukaryotic replication.
16. Write the mode of action of any four DNA replication inhibitors.
17. Give a brief account of the characteristics of genetic code.
18. Compare translation in prokaryotes and eukaryotes.
19. Comment on the special features of interrupted genes.
20. Write a brief outline of the biogenesis of ribosome in eukaryotes.
21. Explain evolutionary clock.
22. Write the role of Rec A protein in genetic recombination.
23. Summarize the different methods of genetic transfer in bacteria.
24. Describe the ultrastructural properties of cancer cells.

(7 x 2 = 14 Weightage)

III. Answer any ***two*** questions. Each question carries 4 weightage.

25. Describe transcription and RNA polymerase in prokaryotes.
26. Write an essay on the special features of eukaryotic genome.
27. Explain the various types of regulation of gene expression in eukaryotes.
28. Describe the structure of a typical eukaryotic chromosome. Add a note on the structural aberrations of the chromosomes.

(2 x 4 = 8 Weightage)

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