C 24024 (Pages : 2) Name...

Reg. No......................................

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2017

(CUCSS—PG)

Botany

BO 02 CT 05—CELL BIOLOGY, MOLECULAR BIOLOGY AND BIOPHYSICS

Time : Three Hours   Maximum : 36 Weightage

Part A

I. Answer all *fourteen* questions. Each answer should be brief. Each question carries 1 weightage :

 1 Write notes on meiotic defects and human diseases.

 2 What are signaling molecules ?

 3 What is metastasis ?

 4 Explain the opposite polarity of the double stranded DNA.

 5 Distinguish between repetitive DNA and unique DNA.

 6 What is footprinting ?

 7 What do you mean by a mutator gene ?

 8 Give structure of spindle apparatus.

 9 What is Renner complex ?

 10 What is diakinesis ?

 11 Write notes on fragile sites in chromosomes.

 12 Differentiate between Colorimetry and Spectrophotometry.

 13 Write the principle of autoradiography.

 14 What is PAGE ?

                                                                      $(14 \times 1 = 14$ weightage)

Part B

II. Answer any *seven* questions. Each answer not exceeding 100 words. Each question carries 2 weightage :

 15 Describe the molecular structure of the centromere and telomere.

 16 Briefly describe cell surface receptors.

 17 Describe special types of chromosomes.

 18 Briefly explain the RNA polymerases seen in eukaryotes.

                                                                      Turn over

19 How do you distinguish heterochromatin from euchromatin ?

20 What do you understand by programmed cell death ?

21 Comment on different models of DNA replication.

22 What are mitotic inducers and inhibitors ? Give examples.

23 What are cell-cylce check points ? Describe the principal check points in the cell cycle.

24 Explain the principle and application of ELISA.

(7 × 2 = 14 weightage)

Part C

III. Answer any *two* questions. Each answer not exceeding 300 words. Each question carries 4 weightage :

25 Write an essay on giant chromosomes. Mention their significance.

26 Give a detailed account of the different stages involved in the cell cycle.

27 Explain the mechanism of DNA replication in Eukaryotes.

28 Explain the principle, methods and application of HPLC

(2 × 4 = 8 weightage)