

TM142040A

Reg. No.....

Name.....

M. Sc. DEGREE (CSS) EXAMINATION, APRIL 2015
SECOND SEMESTER- CORE COURSE (BOTANY)
BOT2CMB - CELL AND MOLECULAR BIOLOGY

Time : Three Hours

Maximum Weight:30

PART A

I. Answer any SIX of the following in not less than 50 words (Weight 1 each)

1. Write a note on human mitochondrial genetic system.
2. What is spindle assembly check point?
3. Explain the importance of kinesin in cells.
4. What you mean by Micro RNA.
5. What are retrotransposons?
6. What is an ORF?
7. List out the variations in standard genetic code.
8. What is RNAi?

(6 x 1=6)

PART B

II. Answer any SEVEN of the following in not less than 100 words (Weight 2 each)

9. Explain G₁/S and G₂/M cell cycle.
10. Explain the endosymbiont hypothesis on chloroplast evolution.
11. Explain the molecular structure of centromere.
12. With diagram, explain the structure of mature mRNA.
13. Write notes on G protein coupled receptors
14. Explain gene silencing by heterochromatinization and DNA methylation.
15. Explain briefly the molecular mechanism in programmed cell death.
16. Differentiate rho-dependent and rho-independent termination.
17. What is the role of second messengers in signal transduction pathway?

18. Explain the replication in telomere region.

(7 x 2=14)

PART A

III. Answer any *TWO* of the following in not less than 250 words (Weight 5 each)

19. Explain the various DNA repair mechanisms.

20. Explain protein folding by self assembly and the role of chaperones in protein folding.

21. What are the post transcriptional controls on gene expression in eucaryotes?

(2 x 5=10)