M. Sc DEGREE END SEMESTER EXAMINATION APRIL 2016
SEMESTER -**2: BOTANY**
COURSE: P2BOTT06- CELL AND MOLECULAR BIOLOGY
(Common for Regular- 2015 Admission /Supplementary-2014 Admission)

Time: Three Hours   Maximum Marks : 75

PART-A
Answer ***any eight*** questions. Each question carries two marks

1. What is 'origin of replication'? What is its significance?

2. Draw the clover leaf model for the structure of tRNA, illustrating major features.

3. What is 'C-value paradox'?

4. What is RNA interference?

5. What were the major proposals in Chargaff rule?

6. Describe the molecular composition of procaryotic ribosomes.

7. What is the role of peroxisomes in plants?

8. What are ribozymes? Give examples.

9. What is attenuation?

10. What is Wobble hypothesis?

11. What is the significance of meiosis?

12. What is the importance of 5' cap and 3' tail in eukaryotic Mrna?

(2 x 8 = 16)

PART-B
Answer ***any seven*** questions. Each question carries five marks

13. What is end-replication problem? How is it resolved?

14. What is protein targeting?

15. Write a brief note on the different classes of transposable genetic elements.

16. What are DNA polymerases? Describe the different classes of DNA polymerases present in

   prokaryotes, their structure and activities.

17. Drawing a suitable diagram, explain the detailed structure of mitochondria.

18. What is cytoskeleton? What is its function?

19. What is apoptosis? Describe the process

20. What is tRNA charging? Describe the process of tRNA charging.

21. What is TATA box?

22. What is genetic code? What are the important features of the genetic code?

<div align="right">(5 x 7 = 35)</div>

PART-C
Answer *any two* questions. Each question carries twelve marks

23. Write an account on the different types of mutation repair mechanisms.

OR

24. Describe the processes involved in the maturation of pre-mRNA in eukaryotes.

25. What is cell cycle? How is cell cycle regulated?

OR

26. Write an essay on the various methods of control of gene expression in eucaryotes.

<div align="right">(12 x 2 = 24)</div>