

Reg. No .....

Name .....

**18P234**

**M Sc DEGREE END SEMESTER EXAMINATION - APRIL 2018**  
**SEMESTER 2 : BOTANY**  
**COURSE : 16P2BOT07 ; MOLECULAR BIOLOGY AND IMMUNOLOGY**  
**(Common for Regular - 2017 Admission & Supplementary - 2016 Admission)**

Time : Three Hours

Max. Marks: 75

**Section A**  
**Answer any 8 (2 marks each)**

1. Differentiate between circular and linear DNA.
2. How triplex DNA is differentiated from quadruplex DNA.
3. What is meant by Cot curve?
4. What are the peculiarities of replication origin and fork in prokaryotes?
5. What is meant by ORC (origin recognition complex) and mention its function in DNA replication?
6. What is Kozak sequence? Mention its importance.
7. Give an account on the structure of SRP receptor.
8. Explain the various types of promoters with which RNA polymerase II interacts.
9. Explain the process of translation termination in eukaryotes.
10. What is si RNA?
11. What is an antigen?
12. Differentiate between humoral and cell mediated immunity.

**(2 x 8 = 16)**

**Section B**  
**Answer any 7 (5 marks each)**

13. Compare the repetitive and unique DNA sequences.
14. Explain the mechanism of replication in telomeres.
15. Explain the significance of telomeres in the process of ageing.
16. How retrotransposons are unique in their mechanism?
17. Explain capping. Give an account on various types of caps.
18. Give an account on RNA polymerase II along with its structure.
19. With the help of a diagram, explain the structure of eukaryotic ribosome with special reference to their activity sites.
20. Briefly explain how transcriptional activators and repressors involved in chromatin remodelling.
21. Discuss the various methods of antibody engineering.
22. Discuss the development of subunit vaccines.

**(5 x 7 = 35)**

**Section C**  
**Answer any 2 (12 marks each)**

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23. Explain DNA replication in eucaryotes.

OR

24. Briefly explain the process of translation in eukaryotes.

25. Briefly explain the various mechanisms by which translation is regulated?

OR

26. Discuss the processes and events leading to antibody diversity. Write a note on RAG proteins.

**(12 x 2 = 24)**