

Reg. No.....Name.....**P419**

MSc DEGREE END SEMESTER EXAMINATION MARCH 2016

SEMESTER – 4 : BOTANY

COURSE: P4BOTT14EL - GENETIC ENGINEERING

Time: Three Hours

Max. Marks: 75

PART-A

I. Answer any **eight** questions briefly; each question carries 2 marks

1. What is site directed mutagenesis?
2. What are DNA biosensors?
3. Brief note on antisense therapy for cancer.
4. What are the features of expression vectors?
5. What is a genomic library?
6. Write a short note on reverse transcriptase PCR.
7. Describe a method for 'in planta' *Agrobacterium* transformation.
8. Add a note on applications of M13 vector.
9. What is plaque hybridization probing?
10. Comment on GM microbes.
11. What are the applications of protein engineering?
12. Enumerate the applications of biosensors in medicine.

(2 x 8 = 16)

PART-B

II. Answer any **seven** questions; each question carries 5 marks

13. Explain the role of homologous recombination in gene targeting.
14. Write a note on chromosome walking.
15. Briefly explain the isolation and purification of RNA.
16. Explain *invitro* synthesis of DNA using PCR.
17. Critically comment on Flavr Savr tomato and its global implications.
18. Distinguish between YAC and BAC. What are its applications?
19. Write a note on hybridoma technology.
20. Explain the design and operation of biosensors.
21. Describe retroviral gene therapy of SCID
22. Write an account on combinatorial methods in protein engineering.

(5 x 7 = 35)

PART-C

III. Answer any **Two** questions; each question carries 12 marks

23. Explain vectorless methods of DNA transfer in plants.

OR

24. Brief note on construction of genomic and cDNA library. What are its applications?

25. Describe the types and functions of antibodies.

OR

26. Discuss the applications and achievements of transgenic plants in agriculture.

(12 x 2 = 24)