Reg. No ..... Name .....

MSc DEGREE END SEMESTER EXAMINATION - MARCH 2020

SEMESTER 4 : BOTANY

COURSE : **16P4BOTT13 ; BIOTECHNOLOGY AND GENETIC ENGINEERING**

(For Regular - 2018 Admission and Supplementary - 2017, 2016 Admissions)

Time : Three Hours Max. Marks: 75

Section A

Answer any 8 (2 Marks each)

1. How protein contamination in nucleic acid can be removed?
2. What is polylinker?
3. What is the role of antibiotic resistance genes in selection of transformed cells?
4. What is T-DNA?
5. What is a nucleotide probe?
6. What is site-specific recombination?
7. What is “Genetic Pollution”?
8. What do you mean by DNA shuffling?
9. Explain potentiometric biosensors.
10. What is chromosome jumping?
11. What are contigs?
12. What is the use of GM yeast?

(2 x 8 = 16)

Section B

Answer any 7 (5 Marks each)

13. Explain the purification of mRNA from total cellular RNA.
14. Explain the selection of transformed cells by Lac Z system.
15. With the help of diagrams, explain cointegrate vector system.
16. Explain phospho-triester method of DNA synthesis.
17. What are inducible expression systems? Explain the recombinant inducible expression systems.
18. What is patenting? Explain your views regarding patenting of living organisms and genes.
19. Describe a method for protein mutagenesis.
20. What are biosensors? Comment on its applications.
21. Give a comparative account on genomic library and cDNA library.
22. Explain *ex-vivo* and *in-vivo* gene therapy approaches.

(5 x 7 = 35)

Section C
Answer any 2 (12 Marks each)

23. Explain the high-capacity vector systems.

OR

24. Explain naturally occurring and recombinant inducible expression systems with suitable examples.

25. Give an account on blotting techniques along with its types and applications.

OR

26. Write an essay on genetically modified organisms.

(12 x 2 = 24)