18P427 (Pages: 2) Name: ……..…….

Reg. No……..……

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2020

(CUCSS - PG)

(Regular/Improvement/Supplementary)

CC15P BO4 E14 / CC18P BO4 E14 – GENETIC ENGINEERING

(Botany)

(2015 Admission onwards)

Time: Three Hours Maximum: 36 Weightage

I. Answer ***all*** questions briefly:

1. What is a disarmed vector? Give an example.
2. Mention the different forms of DNA and which is the most stable form?
3. Write a short note on pUC19.
4. What is a Klenow fragment?
5. What is DNS vaccine?
6. Define a genetic code.
7. Comment on the interest of *sfa*-8 and *crtl* genes in genetic engineering.
8. Explain Golden rise.
9. What are EST markers?
10. Explain Realtime PCR.
11. Comment on SSR.
12. Write a note on automated DNA sequencing.
13. What are shuttle vectors? Give an example.
14. What are split genes?

(14 x 1 = 14 Weightage)

II. Answer any ***seven*** questions not exceeding 100 words each:

15. Explain the mechanism of T-DNA transfer in to the plant cell genome.
16. Discuss transgenic approach for disease resistance with reference to bacterial and viral pathogens using suitable examples.
17. Briefly discuss genetic engineering for bioremediation of xenobiotic compounds.
18. Explain inverse PCR technique and applications.
19. Explain the preparations of RAPD map and its significance.
20. Discuss SDS-PAGE and its applications.
21. Explain chain termination technique of DNA sequencing.
22. Discus restriction mapping and its significance.

23. Explain Seigel classification of nanostructured materials with suitable examples.
24. Discuss the applications of DNA fingerprinting.

(7 x 2 = 14 Weightage)

III. Answer any ***two*** questions not exceeding 300 words each:

25. Explain the contributions of genetic engineering in the field of disease prevention and treatments. Give appropriate examples.
26. Describe the applications of nanoparticles and nanodevices in genetic engineering.
27. What are the different approaches by which transgenes are introduced into patients during gene therapy? Discuss their advantages and limitations.
28. Describe different blotting techniques and their applications employed in recombinant DNA technology.

(2 x 4 = 8 Weightage)

****