(Pages : 2) **K – 4850**

Reg. No. : .....

Name : .....

Third Semester M.Sc. Degree Examination, February 2021

Environmental Sciences

ES 232 — ENVIRONMENTAL GENETICS MICROBIOLOGY AND BIOTECHNOLOGY

(2018 Admission onwards)

Time : 3 Hours Max. Marks : 75

I. Answer **any ten** of the following :

1. Biomining
2. Point mutation
3. Recalcitrant pollutant
4. Biochips
5. Oncogenes
6. Proto-cooperation
7. Triplet code
8. Aneuploidy
9. Extremophiles
10. Photoautotroph
11. In-situ bioremediation
12. Nitrification

(10 × 2 = 20 Marks)

P.T.O.

II. Answer **any five** of the following :

13. Comment on the applications of polyploidy in agriculture

14. What are phenotypic effects of mutation?

15. Discuss the fate of GMO's in the environment.

16. Differentiate between culture dependent and culture independent methods to enumerate microbial diversity.

17. Write notes on nutritional diversity among prokaryotes.

18. What is a molecular probe? Comment on its utility.

19. Write notes on biofertilizers.

(5 × 5 = 25 Marks)

III. Answer **any three** of the following :

20. Write an essay on applications of genetic engineering in agriculture.

21. What is meant by emerging and re-emerging infectious diseases? Discuss emerging microbial diseases in Kerala.

22. Write an essay on bioremediation with special reference role of microorganisms in the degradation of natural and manmade compounds.

23. Explain the role of microbes in Biogeochemical cycles.

(3 × 10 = 30 Marks)