Reg. No ..... Name **18P215**

MSc DEGREE END SEMESTER EXAMINATION- APRIL 2018

SEMESTER 2 : ENVIRONMENTAL SCIENCE

COURSE : **16P2EVST05 ; TECHNIQUES IN RESEARCH**

(Common for Regular - 2017 & Supplementary - 2016 admission)

Time : Three Hours Max. Marks: 75

Section A
Answer any 10 (2 marks each)

1. Why is the substage condenser lens important in microscopes?
2. What are grids in electron microscope?
3. Write the principle of chromatography in brief.
4. Write a short note on the stationary phase used in TLC.
5. Mention the types of ion exchange chromatography.
6. Describe reversed phase HPLC.
7. What is isoelectric focussing?
8. What are micro centrifuges?
9. What is fixation?
10. What are basic stains? Give example.
11. Comment on neutral stains with example.
12. What are mordants?

(2 x 10 = 20)

Section B
Answer any 5 (5 marks each)

13. Write the advantages of TLC over paper chromatography.
14. Explain the working principle of PAGE.
15. Explain the principle and procedure of disc electrophoresis.
16. Briefly explain the principle and applications of colorimetry.
17. Give an account on the principle and applications of flame emission spectroscopy.
18. Explain the principle of ionisation chambers.
19. Explain the steps involved in the preparation of permanent slides.
20. What are the applications of microphotography?

(5 x 5 = 25)

Section C
Answer any 2 (15 marks each)

21. Write an essay on confocal microscope.
22. Explain in detail the principle, procedure and applications of agarose gel electrophoresis.
23. Discuss the principle, working and applications of NMR spectroscopy.
24. What is fixation? Explain various fixatives. Elaborate the procedure involved in the preparation of permanent slide of tissues.

(15 x 2 = 30)