

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2004-05 & thereafter)

SUBJECT CODE: VC/AC/AI22

B.Sc. DEGREE EXAMINATION, APRIL 2008
BRANCH IV- CHEMISTRY
BRANCH V(A) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
BRANCH VI(A) – ADVANCED ZOOLOGY & BIOTECHNOLOGY
SECOND SEMESTER

COURSE : ALLIED – CORE
PAPER : ANALYTICAL INSTRUMENTATION
TIME : 2½ HOURS **MAX. MARKS : 100**

SECTION –A

ANSWER ALL QUESTIONS: (10x3=30)

1. Define R_f value.
2. Define radioactivity.
3. What is the principle behind activity of enzyme catalase?
4. What are the merits of Gas liquid chromatography?
5. What are eluents and solutes? Give examples.
6. What are the elements that can be estimated by both Atomic absorption spectroscopy and Flame Photometry?
7. What is electrophoresis?
8. What is the difference between single and double beam instruments of Photometry?
9. Mention the types of radiation counters.
10. What are the reagents used for analyzing vitamin-A and ascorbic acid by Photometric method?

SECTION –B

ANSWER ANY FIVE QUESTIONS. (5x6=30)

11. Give the principle and explain the instrumentation of Atomic absorption Spectroscopy with block diagram.
12. Compare the characteristics of α , β , γ rays.
13. Explain the Column chromatography technique.
14. Explain the estimation of Thiamine by fluorimetric method.
15. State and explain Lambert-Beer's law.
16. Write briefly on gas and liquid scintillation counters.
17. Give a short account on fluorescence and phosphorescence.

SECTION -C

ANSWER ANY TWO QUESTIONS.

(2x20=40)

18. Give the principle, instrumentation and estimation of fluorescein by fluorimetric method.
19. a) Explain the principle, instrumentation of HPLC with the diagram.
b) How phosphorus is estimated by colourimetric method? Explain. (10+10)
20. a) Write short note on the following.
(i) Geiger Muller counter (ii) Paper electrophoresis
b) Explain the estimation of sodium using flame photometry. (10+10)
21. a) Explain the instrumentation and working of single beam spectrophotometer with block diagram.
b) How are components separated by column chromatography? (12+8)

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