

LIB
22/11/16 FN

Reg. No. :

Question Paper Code : 35612

M.Sc. (5 Years) DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Second Semester

Information Technology

XCS 123 — CHEMISTRY

(Common to 5 Year M.Sc. – Computer Technology)

(Regulations 2003)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is a transducer?
2. What is the function of the monochromator?
3. Write a note on electronic shielding.
4. What are synthetic fibers?
5. What are soldering materials?
6. Distinguish between p and n- type semiconductors with any two points.
7. Mention any two chemical compounds that are used as impurities in silicon chips.
8. What are the advantages of Ion implantation technique?
9. What are photovoltaic cells?
10. What are primary batteries?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the sources of UV-Visible and IR spectroscopy? (2)
(ii) What is finger print region in IR spectroscopy? (8)
(iii) Mention the applications of FT-IR spectroscopy. (6)

Or

- (b) (i) Briefly explain the principle and applications of UV-visible spectroscopy. (8)
- (ii) Write a note on photo multiplier tube detector and silicon photodiodes. (4 + 4)
12. (a) (i) Discuss the use of negative photoresists in the construction of printed circuit boards. (8)
- (ii) Give an account of liquid crystalline polymers and their uses. (8)
- Or
- (b) (i) Discuss the use of packing materials and encapsulants in electric and electronic industries. (8)
- (ii) Give an account of polymer composites and their uses. (8)
13. (a) (i) Explain the p-type and n-type semiconductors. (8)
- (ii) What are soldering materials? What are their characteristics? Discuss. (8)
- Or
- (b) (i) What are the types of magnetic materials? Mention their characteristics and applications. (8)
- (ii) What are insulating materials? Give their characteristics and applications. (8)
14. (a) (i) Explain with the neat diagram the fabrication of NMOS. (8)
- (ii) With a neat diagram explain the fabrication of printed circuit board by photolithographic process. (8)
- Or
- (b) (i) Sketch and explain the theory of Gallium-Arsenide semiconductor. (8)
- (ii) What are the various steps involved in the fabrication of PMOS. Explain in detail. (8)
15. (a) (i) Construct and explain lead acid battery. (8)
- (ii) Discuss the important characteristics of a good battery. (8)
- Or
- (b) (i) Construct and explain fuel cell. (8)
- (ii) Explain photo voltaic cell in detail. (8)