

B.E. DEGREE EXAMINATIONS: JUNE 2010

Second Semester

CHY104: CHEMISTRY FOR CIRCUIT ENGINEERING

(Common to B.E-Electrical and Electronics Engineering, Electronics & Instrumentation Engineering, Electronics & Communication Engineering)

Time: Three hours

Maximum Marks: 100

Answer ALL Questions

PART A (10 x 1 = 10 Marks)

1. Write the 'wave length' of 'visible region' in an electromagnetic spectrum.
A. 100- 400 nm B. 400-800 nm C. 800-1200 nm D. 1200-1600 nm
2. Photomultiplier will convert radiation into
A. Magnetic current B. Electrical current C. Energy D. Flame
3. The example of electronically conductive polymers is
A. Polypyrrole B. Rubber C. PVC D. TEFLON
4. The typical example of polymer composite is
A. Fiberglas B. Nylon C. Polyethylene D. Thermocol
5. The value of 10 amu is equal to
A. 931 mev B. 9310 mev C. 93 mev D. 9300 mev
6. An example of soldering process involves
A. Tin, lead and their alloy. B. Tin C. Lead D. Tin and its alloy
7. The main raw material for fabrication of IC is
A. Silicon chips B. Copper chips C. Boron chips D. Lead chips
8. The leading semiconductor manufacturer is
A. Microsoft B. Intel C. Nokia D. Infosys
9. Sea water contains about_____ of dissolved salts.
A. 100 mg/lt B. 1000 mg/lt C. 35000 mg/lt D. 50000 mg/lt
10. In a sacrificial anodic protections, the following metal is used.
A. Fe B. Mg C. Ag D. Au

PART B (10 x 2 = 20 Marks)

11. Define Lambert's Law.
12. Explain x-ray diffraction?

13. How polyurethane could act as conducting polymers?
14. What is encapsulation in polymer technology? Give example.
15. What is dielectric? Give example.
16. Define binding energy.
17. What is wafer?
18. What is lithography?
19. What is reverse osmosis?
20. What is calgon conditioning?

PART C (5 x 14 = 70 Marks)

21. (a) (i) What is electromagnetic radiations? Write note on the various regions of electromagnetic radiation with corresponding wavelength and energy. (7)
- (ii) What is the principle of radiation detectors? Write brief note on silicon photodiode. (7)

(OR)

- (b) (i) Using C language how do you programme to find wave number of stokes? Explain briefly. (7)
- (ii) Write a note on sources and Monochromators employed for optical spectrometry. Explain working on gratings. (7)

22. (a) (i) Distinguish piezo and pyro electric polymers. (5)
- (ii) Discuss any three applications of polymer in Computer Science and Information Technology. Give examples. (9)

(OR)

- (b) Write in detail
- (i) Nanomaterial (7)
- (ii) Lithographic Materials (7)

23. (a) (i) Explain in details the application of magnetic materials in micro electronics. (7)
- (ii) Using computer language skills, how do you determine the Half-life of a radio active nucleus. (7)

(OR)

(b) (i) Write a programme for the following:-

For a change of 1 amu, calculate the corresponding energy charge in Mev. (5)

(ii) Suggest a computer programme to calculate the binding energy of a nucleus. Based on the result, comment on its stability. (9)

24. (a) (i) What is implantation in fabrication of IC. Explain with example. (7)

(ii) Write note on Photolithography including etching. (7)

(OR)

(b) (i) Discuss NMOS and CMOS in fabrication of IC. (7)

(ii) Explain Ga – As technology. (7)

25. (a) (i) Explain the disadvantages of hard water in industries. (7)

(ii) With diagram explain the ion exchange method of removing hardness of water. (7)

(OR)

(b) (i) What are the types of corrosion? Explain electrochemical corrosion. (7)

(ii) Explain any five factors that influence the corrosion. (7)
