Register No: ……

B.E. DEGREE EXAMINATIONS: APRIL / MAY 2011

Second Semester

CHY104: CHEMISTRY FOR CIRCUIT ENGINEERING

(Common to Electrical and Electronics Engineering, Electronics and Instrumentation engineering, Electronics and Communication Engineering)

Time: Three hours **Maximum Marks: 100**

Answer ALL Questions

PART A (10x1 = 10 Marks)

1. For UV – Visible regions the grating should contain

   A) 300- 2000 grooves/ mm. B) 100 – 200 grooves/ mm.

   C) 200-300 grooves/ mm. D.50-100 grooves/ mm.

2. In molecular spectroscopy transition occurs between the

   A) rotational and vibration levels B) rotational level

   C) rotational, vibration and electronic levels D) vibration level

3. The material used in VLSI is

   A) Cl B) Br. C) Al D) F

4. Nano material possessing grains in the order of

   A) 10^{-9} mm B) 10^{-9} cm. C) 10^{-9} m D) 10^{-9} dm

5. Magnetic susceptibility of Para magnetic material is

   A) Small and negative B) Small ad positive

   C) Large and negative D) Large and positive

6. Energy gap between valence and conduction band in Germanium is

   A) 1.1 V B) 0.8 V. C) 0.8 mV D) 1.1 mV

7. Cathode sputtering process performed in the pressure

   A) 10^{-12} torr B) 10^{3} torr. C) 10^{-9} torr D) 10^{-7} torr

8. In Ion implantation process the ions are accelerated between

   A) 10 – 20 KV. B) 20 – 300 KV C) 20 – 250 KV D) 10 – 100 KV

9. Caustic embrittlement is due to

   A) Na_2CO_3 B) HCl C) KCl D) Na_3PO_4

10. Scales are

   A) Hard adherent deposits B) Hard non adherent precepts

   C) Loose precipitate D) Soluble compounds

PART B (10x 2 = 20 Marks)

11. State Beer Lamberts Law.
12. What are the advantages of FT spectroscopy?
13. How the conducting property established in polymers?
14. What are lithographic materials?
15. Define semiconductors with example.
16. Define diffusion current.
17. What is electroless plating?
18. Give the example for dopants.
19. What are requirements of boiler feed water?
20. State Pilling Bedworth rule.

PART C (5x 14 = 70 Marks)

21.a) (i) Explain the various regions of electromagnetic radiation with wavelength and energy. (7)

(ii) Describe the photomultiplier tube with neat diagram. (7)

(OR)

b)(i) Write a "C" language programmed to determine the wave number of stokes lines.(7)

(ii) Explain the rotating crystal method in X ray diffraction analysis. (7)

22. a) (i) Write in detail about piezo and pyro electric polymers. (7)

(ii) Write a note on nano materials. (7)

(OR)

b) (i) Discuss the application of polymers in electrical and electronic industries. (10)

(ii) Write a note on polymer composites (4)

23. a) (i) Write in detail about magnetic materials. (10)

(ii) Explain soldering materials with examples. (4)

(OR)

b) (i) Using computer skills how the half life period of radioactive nucleus determined? (7)

(ii) Write a note on dielectric materials. (7)

24. a) (i) What are photo lithography and etching process? Explain. (7)

(ii) Write in detail about CMOS. (7)

(OR)

b) (i) Describe Printed Circuit Boards. (7)

(ii) Explain Ga-As technology (7)

25. a) (i) What is internal conditioning method? Explain the various methods. (7)

(ii) Describe ion exchange process. (7)

(OR)

b) (i) Discuss the factors influencing corrosion (7)

(ii) How the corrosion can be controlled by cathodic protection and sacrificial anodic methods? (7)

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