

**B.E. DEGREE EXAMINATIONS: NOV /DEC 2010**

Second Semester

**CHY104: CHEMISTRY FOR CIRCUIT ENGINEERING**(Electrical and Electronics Engineering, Electronics and Communications Engineering,  
Electronics and Instrumentation Engineering)**Time: Three hours****Maximum Marks: 100****Answer all Questions:-****PART A (10 x 1 = 10 Marks)**

1. A transducer is a special type of
  - a) light source
  - b) amplifier
  - c) detector
  - d) reading
2. Photomultiplier cell will convert radiation into
  - a) Energy
  - b) Electric Current
  - c) Magnetic current
  - d) Work
3. Boron fibers - epoxy resin polymer composite material is used for
  - a) Flooring
  - b) Sports material
  - c) Helicopter blades
  - d) Domestic materials
4. Nano materials possessing grains in the order of
  - a)  $10^{-9}$ mm
  - b)  $10^{-9}$ cm
  - c)  $10^{-9}$ dm
  - d)  $10^{-9}$ m
5. The main raw materials for fabrication of IC is
  - a) Copper Chips
  - b) Boron Chips
  - c) Lead chips
  - d) Silicon chips
6. The material used in VLSI is
  - a) Cl
  - b) Br
  - c) I
  - d) Al
7. A Semi permeable Membrane allows the flow of
  - a) Solvent molecule
  - b) Both solvent and solute molecules
  - c) Solute molecule.
  - d) Neither solute nor solvent molecule
8. During galvanic corrosion more noble metal acts as
  - a) Anode
  - b) Cathode
  - c) Electrolyte
  - d) Moderator
9. Write the wavelength of Visible region in electromagnetic spectrum
  - a) 1200-1600nm
  - b) 400 – 800 nm
  - c) 100 – 400nm
  - d) 1000 – 1200 nm
10. The example of electronically conducting polymer is
  - a) Teflon
  - b) Nylon
  - c) Rubber
  - d) Polypyrrole

**PART B (10 x 2 = 20 Marks)**

11. State Beer Lambert's law.
12. How polyurethane can act as conducting polymer?
13. What is nematic phase in liquid crystal polymers?
14. What are packing materials?
15. What is wafer?
16. Define PCB.
17. What is CMOS?
18. What is meant by drift current?
19. What are the requirements for boiler feed water?
20. How does Humidity Influence corrosion?

**PART C (5 x 14 = 70 Marks)**

21. a) Explain the principle involved in X-ray diffraction and the different methods of crystal analysis using X-ray diffraction.

**(OR)**

b (i) Write in detail the wavelength selectors employed in Optical spectroscopy. (7)

(ii) Discuss on the Single and double beam spectroscopic instruments. (7)

22. a) Describe the various applications of polymers in electronic and electrical Industry

**(OR)**

b) Write in detail on

(i) Lithographic material (7)

(ii) Encapsulants (7)

23. a) (i) Detail on the different solid insulating materials (7)

(ii) Write a computer programme to determine the Half life and Average life of a radioactive nucleus (7)

**(OR)**

b) (i) Write a note on dielectrics (7)

(ii) Suggest a computer programme to calculate the binding energy of a nucleus. Based on the result, comment on its stability. (7)

24. a) Discuss on the different thin film processes involved in fabrication of IC

**(OR)**

b) (i) Explain Ga – As technology (7)

(ii) Discuss on the various steps involved in the process of Photoetching in fabrication of IC. (7)

25. a) (i) What are the different internal conditioning methods used in treatment of water? (7)

(ii) Discuss on the factors influencing corrosion (7)

**(OR)**

b) (i) What is meant by desalination and with a neat sketch describe the process of reverse osmosis (7)

(ii) State Pilling bedworth rule. Discuss the sacrificial anodic method to control corrosion. (7)

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