UNIVERSITY DEPARTMENT OF PHYSICS DR. SHYAMA PRASAD MUKHERJEE UNIVERSITY, RANCHI B.SC. PHYSICS (HONS.) SEMESTER - II PAPER – CC IV: CURRENT ELECTRICITY

MODEL QUESTIONS

GROUP A

Short Answer Type Questions

- **1.** What is time –constant in a C-R circuit in the case when current is growing in it?
- 2. What is Ampere's circuital law?
- 3. What is Toroid?
- 4. What is Biot-Savart's law?
- 5. What are resistance, reactance and impedance in an A.C. circuit?
- 6. Explain maximum power transfer theorem.
- 7. What is Power Factor of an a.c. circuit?

GROUP B

Long Answer Type Questions

- 1. Draw the circuit of Anderson Bridge. Give its balance condition and its uses.
- **2.** Discuss the growth and decay of current in a LR circuit containing a d. c. battery. What is its time constant?
- **3.** What is the power of an a.c. circuit? Find the power factor of an LCR series a.c. circuit?
- **4.** Give the theory of ballistic galvanometer. How does logarithmic decrement is calculated?
- **5.** Calculate the magnetic field B at a point due to a straight long electrical conductor carrying current.
- **6.** What is resonance in a series LCR ac circuit. Find the resonance frequency. Define sharpness of resonance.
- 7. Write short note on any two of the followings:
 - (a) Owen's Bridge
 - (b) Schering bridge
 - (c) h-parameters
 - (d) Thevenin's Theorem