

B.Sc. CBCS Pattern Semester-III  
**USELT05 - Electronics Paper-I**  
**Power Amplifier, Oscillators and Power Supplies**

P. Pages : 2

Time : Three Hours



**GUG/W/23/11604**

Max. Marks : 50

- Notes :
1. All the questions are compulsory and carry equal marks.
  2. Draw the neat and labelled diagrams wherever necessary.
  3. Use of log table/calculator is allowed.

**Either:**

1. a) What is power amplifier? Differentiate between voltage and power amplifier. Explain the working of class A power amplifier with resistive load and derive an expression for its efficiency. **10**

**OR**

- b) Explain the working of class B push-pull amplifier. What is the efficiency of class B push pull amplifier? Explain the cross over distortion occur in class B push pull amplifier. **10**

**Either:**

2. a) What is oscillator? Explain the Barkhausen criterion for oscillator? Explain the working of phase shift oscillator. **10**

**OR**

- b) Explain with suitable diagram working of Wein bridge oscillator? State its advantages and disadvantages. **10**

**Either:**

3. a) What is regulated power supply? Define load and line regulation. Explain the working of Zener diode shunt voltage regulator. **10**

**OR**

- b) Explain the working of transistor series voltage regulator/ What is short circuit protection. **10**

**Either:**

4. a) What are the advantages of three terminal voltage regulator. Draw the block diagram of IC LM317 voltage regulator and explain its working. **10**

**OR**

- b) Explain IC 78XX and 79XX three terminal regulator. Explain the working of dual power supply using 78xx and 79xx. **10**

5. Attempt **any ten** of the followings:

**1x10**  
**=10**

- a) What is power transistor?
- b) State the advantages of complimentary symmetry power amplifier.
- c) What is the efficiency of class A amplifier?
- d) State the advantages of phase shift oscillator.
- e) What is the frequency of Hartley oscillator?
- f) What is L-C oscillator?
- g) State the limitations of unregulated power supply.
- h) State the disadvantages of Zener diode voltage regulator.
- i) Draw circuit diagram of transistor shunt type regulator.
- j) State features of IC 78XX voltage regulator.
- k) State the application of IC LM 317.
- l) State the advantages of three terminal voltage regulator over unregulated power supply.

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