

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

P. Pages : 2

Time : Three Hours



**GUG/W/24/11604**

Max. Marks : 50

- Notes :
1. All questions are compulsory and carry equal marks.
  2. Draw the neat and labelled diagram 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. **10**

**OR**

- b) What is Cross over distortion in Class B Push Pull amplifier? Explain the working of complementary-symmetry power amplifier. **10**

**Either:**

2. a) What is Oscillator? Explain the working of Wein bridge Oscillator? **10**

**OR**

- b) What is tank circuit? With labelled diagram, explain the working of Colpitts Oscillator? **10**

**Either:**

3. a) What is unregulated power supply? State its drawback. Explain the working of Zener diode shunt regulator. **10**

**OR**

- b) Draw the circuit diagram of transistor series voltage regulator and explain its working. What is short circuit protection? **10**

**Either:**

4. a) What are the advantages of three terminal voltage regulator? Explain the working of LM317 three terminal voltage regulator? **10**

**OR**

- b) Explain IC 78XX and 79XX series three terminal regulator? With suitable circuit diagram, explain the working of dual power supply using 78XX and 79XX? **10**

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

- |   |   |
|---|---|
| a) What is the efficiency of Class B push pull amplifier?         | 1 |
| b) What is power transistor?                                      | 1 |
| c) State the advantage of complimentary symmetry power amplifier. | 1 |
| d) State the Barkhuizen criterion for Oscillation.                | 1 |
| e) State output frequency formula for phase shift oscillator.     | 1 |
| f) State the draw back of Wein bridge Oscillator.                 | 1 |
| g) Define regulated power supply.                                 | 1 |
| h) State the draw back of Zener diode voltage regulator.          | 1 |
| i) State the advantage of series pass regulator.                  | 1 |
| j) Draw the pin diagram of 78XX series regulator.                 | 1 |
| k) State the advantages of LM317 regulator.                       | 1 |
| l) What is dual power supply?                                     | 1 |

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