

USELT05 - Electronics Paper-I - Power Amplifier, Oscillators and Power Supplies

P. Pages : 2

Time : Three Hours



GUG/S/25/11604

Max. Marks : 50

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

1. a) Differentiate between power amplifier and voltage amplifier. **4**
- b) Explain the transformer coupled class A power amplifier with suitable circuit diagram. Derive the expression for its efficiency. **6**

OR

- c) Draw the circuit diagram of Class B push pull amplifier and explain its working. State the advantages of push pull amplifier. **6**
- d) Explain the working of complementary symmetry amplifier. **4**
2. a) Explain the working of phase shift oscillator with suitable diagram. **5**
- b) Explain the construction and working of Wein Bridge oscillator. **5**

OR

- c) Draw the circuit diagram of Colpitts Oscillator and explain its working. **5**
- d) Explain the working of Hartley Oscillator circuit with suitable circuit diagram. **5**
3. a) Draw the block diagram of unregulated DC power supply and explain each blocks. **5**
- b) Explain Zener diode as a voltage regulator with suitable circuit diagram. **5**

OR

- c) Explain the working of series pass regulator with suitable circuit diagram state its advantages. **5**
- d) Differentiate between series and shunt type regulator. **5**
4. a) Draw the functional block diagram of ICLM 317 and explain the function of each blocks. **7**
- b) State the advantages of three terminal voltage regulator. **3**

OR

- c) Draw the circuit diagram of regulated +5V power supply using IC 78XX and explain its working. **5**
- d) Draw the circuit diagram of dual power supply of 12V using IC 78XX & IC79XX and explain it. **5**

5. Solve **any ten** of the followings- **1x10**

- a) What is power transistor?
- b) What is efficiency of amplifier?
- c) State disadvantages of class A amplifier with resistive load.
- d) What is oscillator?
- e) State Barkhausen Criterion for oscillation.
- f) State the application of oscillator.
- g) State the disadvantages of DC unregulated power supply.
- h) What is DC regulated power supply?
- i) Define line regulation.
- j) State the specification of ICUM317.
- k) What is dual power supply?
- l) Draw the pin configuration of IC79XX?
