

NETTUR TECHNICAL TRAINING FOUNDATION
DIPLOMA IN ELECTRONICS ENGINEERING & EMBEDDED SYSTEM – CP04
IV SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JULY 2023

Subject: Circuit Analysis
Subject Code: CP04401T

Total Time: 2 Hr.
Total Marks: 50

PART B

1.0 ANSWER ANY EIGHT OF THE FOLLOWING **2*8=16**

- 1.1 List 4 ideal parameters of op amp
- 1.2 List the protections used for a power supply
- 1.3 Define % of load regulation & line regulation of a power supply
- 1.4 What is the role of sampling network in series voltage regulator?
- 1.5 Draw the circuit diagram of op amp based series positive voltage regulator
- 1.6 What is Comparator?
- 1.7 What is loading effect?
- 1.8 What is the significance of VCO in PLL?
- 1.9 How does the frequency variation is done in FG
- 1.10 What are the effective methods to eliminate EMI?

2.0 ANSWER ANY SIX OF THE FOLLOWING **3*6=18**

- 2.1 What is voltage divider bias and what are its advantages
- 2.2 What is clamper? Explain with neat sketch
- 2.3 Draw and explain the block diagram of an Opamp
- 2.4 Differentiate Series and Shunt voltage regulators
- 2.5 How a TSVR circuit can be protected by using fold back current limiting circuit
- 2.6 Draw the block diagram of FG
- 2.7 Explain the working of 4 diode sine shaper with neat sketch
- 2.8 Draw and explain the block diagram of PLL

3.0 ANSWER ANY FOUR OF THE FOLLOWING **4*4=16**

- 3.1 What are the building blocks of a linear power supply? Explain
- 3.2 Design a transistorized series voltage regulator for the given specification
 $V_o = 8V$, $I_L = 100mA$
- 3.3 Explain the working of triangular wave generator with neat sketch
- 3.4 Design a power supply for the given specification $V_o = 12V$, $I_L = 100mA$
- 3.5 What is the difference between a linear and switch mode power supply
- 3.6 Explain the working of crow bar protection circuit with neat sketch

