

SE Sem IV C-Scheme May-June 2020

Duration: 3 Hours

Maximum marks: 80

- 1) Question 1 is compulsory
- 2) Attempt any three from the remaining questions
- 3) All questions carry equal marks.
- 4) Assume suitable data if necessary.

- Q.1. Attempt the following questions
- a Draw high frequency equivalent circuit of FET amplifier and explain each term associated with this equivalent circuit. 5
 - b Draw the functional block diagram of IC 555 and explain function of each block. 5
 - c Design non inverting amplifier using OPAMP for voltage gain of 3.3 5
 - d Draw circuit diagram of Unity gain amplifier using OPAMP and explain its operation? 5
- Q.2.a Explain purpose of plotting frequency response of the amplifier. Sketch frequency response of RC coupled amplifier and Define Low, mid and high frequency regions and Bandwidth 10
- b Compare positive and negative feedback used in amplifier? Draw the block diagram of voltage series and voltage shunt feedback amplifier? 10
- Q.3.a Explain non inverting comparator with neat wave forms when +2 Reference voltage is present. 10
- b Draw circuit diagram of Zero crossing detector and explain its operation? 10
- Q.4.a Draw the circuit diagram and explain operation of three input adder using OPAMP? 10
- b Draw the circuit diagram of subtractor using OPAMP and derive the expression of output voltage. State its applications. 10
- Q.5 a Draw the circuit diagram of differentiator using OPAMP and derive the expression of output voltage. State its applications. 10
- b Explain the working of Inverting Schmitt Trigger (regenerative comparator) and explain the working with proper transfer characteristics 10
- Q.6 a Draw block diagram of IC 555 and explain in brief function of each block. 10
- b Explain the circuit for triangular wave generator using OPAMP? Derive the expression for frequency? 10
