

19/12/2022

N.B.: (1) Question No 1 is Compulsory.

(2) Attempt any three questions out of the remaining five.

(3) All questions carry equal marks.

(4) Assume suitable data, if required and state it clearly.

1 Attempt any FOUR

[20]

a Compare between SCR and DIAC

b Draw and Explain low pass filter

c What is an operational amplifier? Explain its characteristics

d Differentiate between microprocessor and microcontroller

e State and prove De-Morgan's theorems

2 a. Explain 180 degree mode of operation of inverter

[10]

b. Explain the architecture of MSP 430 microcontroller

[10]

3 a. Draw the circuit diagram of astable multivibrator and explain its operation.

[10]

b. Define and Explain specification parameter of digital logic family.

[10]

4 a. Explain the working principle of single phase bridge inverter circuit.

[10]

b. List various speed control methods of induction motor. Explain voltage control method with a suitable diagram.

[10]

5 a. What is a 555 timer? Write its applications and explain astable multivibrator with associated circuit diagram and waveforms.

[10]

b. Write difference between assembly programming and C programming also write the applications of microcontroller as Speed Measurement using Proximity Sensor.

[10]

6 a. Write a note on a) BLDC Motor b) Servo Motor

[10]

b. Draw and explain the working of multiplexer and de-multiplexer.

[10]