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Question Paper Code : X 60847

B.E./B.Tech. DEGREE EXAMINATIONS, NOV./DEC. 2020

Fourth Semester

Mechanical Engineering

ME 2255/EC 1265/ME 46/10122 ME 406/080120019 – ELECTRONICS AND

MICROPROCESSORS

(Common to Automobile Engineering/Mechanical and Automation Engineering
and Production Engineering)

(Regulations 2008/2010)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. Compare extrinsic and intrinsic semiconductors.
2. Define Voltage regulation.
3. Draw input characteristic of the CE configuration transistor.
4. Draw input characteristic of triac.
5. Why NAND and NOR gates is called as universal gates ?
6. Write a short note on counters.
7. What is the primary function of ALE sign ?
8. Shortly comment on the operation of DAA instruction with an example.
9. What are the criterion to be considered for interfacing a microprocessor ?
10. List the fundamental I/O techniques.

**PART – B****(5×16= 80 Marks)**

11. a) i) Explain the characteristics of zener diode. **(8)**
ii) Explain the operation of a PN Junction with a neat diagram. **(8)**
(OR)
- b) i) Explain in detail about the working of a full wave rectifier. **(10)**
ii) Compare the full wave and half wave rectifier. **(6)**
12. a) i) Explain about the operation of a CE amplifier. **(8)**
ii) Explain about the operation of a Class A amplifier. **(8)**
(OR)
- b) i) Explain about the operation and characteristics of SCR. **(8)**
ii) Explain about the operation and characteristics of TRIAC. **(8)**
13. a) i) Draw and describe Logic diagram and truth table of full adder. **(10)**
ii) With truth table explain the functions of logic gates. **(6)**
(OR)
- b) With circuit and waveform explain the principle of operation of S-R flip-flop. **(16)**
14. a) With a neat block diagram, discuss the architecture of 8085 CPu. **(16)**
(OR)
- b) Write an ALP in 8085, to find the factorial of the given integer. Give out the flow chart. **(16)**
15. a) Explain in detail about the Input and Output Interfacing techniques of 8085 microprocessor. **(16)**
(OR)
- b) Draw and explain in detail about stepper motor interface. **(16)**
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