Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80845

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Third/Fourth Semester

Mechanical Engineering

ME 2255/EC 1265/10122 ME 406/080120019/ME46 — ELECTRONICS AND MICROPROCESSORS

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

(Regulations 2008 / 2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. What are the types of impurities? Give examples.

2. Find the efficiency of the Half wave rectifier having a resistive load of $1k\Omega$, that rectifies an alternating voltage of 230v peak value with the diode forward resistance of 50Ω.

3. Define biasing.

4. List any two applications of SCR.

5. Draw the symbol and truth table for exclusive OR gate.

6. Draw the circuit and truth table for half adder.

7. List the various addressing modes of 8085.

8. Differentiate RAM and ROM.

9. What is meant by I/O data transfer?

10. What is the use of ALE signal?

PART B — ($5 \times 16 = 80$ marks)

11. (a) Discuss the construction, V-I characteristics, breakdown mechanisms and applications of zener diode. (16)

Or

(b) With an energy band structure, explain the operation of open circuited PN junction. Derive the contact difference potential. (16)

12. (a) (i) Explain in detail about working of a CE amplifier. (12)

(ii) Explain about the concept of feed back. (4)

Or

(b) (i) Explain in detail about working and characteristics of a FFT. (10)

(ii) Explain in detail about working MOSFET. (6)

13. (a) Design a full adder and a full subtractor. (16)

Or

(b) (i) Explain the operation of a 3-bit binary counter circuit. (8)

(ii) Explain the basic concept of Analog to Digital conversion. (8)

14. (a) With diagram explain architecture of 8085. (16)

Or

(b) Describe various addressing modes used in 8085. (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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