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Question Paper Code : 51636

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Fourth Semester

Mechanical Engineering

ME 2255/ME 46/EC 1265/080120019/10122 ME 406 — ELECTRONICS AND
MICROPROCESSORS

(Common to Automobile Engineering, Production Engineering and Third Semester
Mechanical and Automation Engineering)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Draw energy band diagram of insulator.
2. What is intrinsic semiconductor?
3. Draw input characteristic of the CE configuration transistor.
4. Draw input characteristic of triac.
5. Draw the symbol and truth table for exclusive OR gate.
6. Draw the circuit and truth table for half adder.
7. Define micro computer.
8. List various arithmetic operations used in 8085.
9. What is the basic interfacing concepts?
10. What is the need for an interfacing?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Draw and explain Zener diode characteristic. (8)
(ii) Describe energy band structure of an open circuited P-N junction. (8)

Or

- (b) (i) With circuit explain principle of operation of full wave rectifier. (10)
(ii) Describe conduction in P-type and N-type semiconductor. (6)
12. (a) (i) Explain configuration and characteristics of CB BJT. (8)
(ii) How FET can be used an amplifier. (8)

Or

- (b) With diagram describe configuration and characteristics of SCR.
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.
14. (a) With diagram explain architecture of 8085. (16)

Or

- (b) Describe various addressing modes used in 8085.
15. (a) With block diagram explain interfacing of input devices. (16)

Or

- (b) Describe microprocessor application to traffic light control.