Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 21566

14.5.13-FN

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Fourth Semester

Mechanical Engineering

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

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

(Regulation 2008/2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Distinguish between P-type and N-type semiconductors.

2.   Define Voltage regulation.

3.   In a Common-Base configuration, current gain of a transistor is 0.965. If the
     emitter current is 10 mA, what is the value of base current?

4.   Draw the circuit symbol of TRIAC.

5.   Why NAND and NOR gates is called as universal gates?

6.   Write a short note on counters.

7.   Give the instruction formats for 8085 microprocessor.

8.   What are the steps involved in programming?

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

10. What is the use of ALE signal?

PART B — (5 × 16 = 80 marks)

11. (a) Explain in detail about Intrinsic and Extrinsic semiconductors with neat diagram. (16)

Or

(b) Explain the construction and V-I characteristics of PN junction diode and Zener diode. (16)

12. (a) Explain various characteristics of BJT in Common Collector configuration with neat diagram. (16)

Or

(b) Explain the working of SCR with the help of its two transistor equivalent circuits. Draw its forward and reverse characteristics. (16)

13. (a) Design and implement the half adder and full adder using logic gates. (16)

Or

(b) Explain working principle of D/A and A/D converters. (16)

14. (a) Explain the architecture of 8085 microprocessor with a neat functional block diagram. Give the salient features of 8085 microprocessor. (16)

Or

(b) Write an 8085 assembly language program to add and subtract two 16-bit numbers. (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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