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**Question Paper Code : 60853**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

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)

(Regulations 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Distinguish between intrinsic and extrinsic semiconductors.
2. What are the values of efficiency and ripple factor in full wave rectifier.
3. Why do we call common collector configuration as emitter follower?
4. Name a device that will exhibit negative resistance characteristics.
5. Draw the circuit diagram and truth table for a exclusive NOR gate.
6. Design a Half subtractor.
7. Write down the important flags in 8085 processor.
8. Why do we multiplex lower order address bus and data bus?
9. What are the advantages of negative feed back?
10. Distinguish between memory mapped I/O and I/O mapped I/O.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the characteristics of Zener diode and explain how this diode can be used for voltage regulation. (16)

Or

- (b) With necessary diagrams explain the operation of fullwave rectifier and derive for its efficiency. (16)

12. (a) With an aid of diagrams explain the operation of class B amplifiers. (16)

Or

(b) Explain the configuration and characteristics of N channel field effect transistor. (16)

13. (a) (i) Design a full adder using two half adders. (8)

(ii) Explain the working of Master slave JK flipflop. (8)

Or

(b) With example explain the working of R-2R Ladder type D to A converter. (16)

14. (a) With the help of block diagram explain the architecture of 8085 microprocessor. (16)

Or

(b) (i) With examples explain the addressing modes of 8085 microprocessor. (10)

(ii) Write an assemble language program to find out the given number odd or even. (6)

15. (a) With the help of circuit diagram explain the operation and microprocessor based traffic controller. (16)

Or

(b) Explain the operation of microprocessor based temperature controller. (16)