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**Question Paper Code : 51853**

**B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 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. What are the types of impurities ? Give examples.
2. Find the efficiency of the half wave rectifier having a resistive load of 1 k $\Omega$ , that rectifies an alternating voltage of 230 V peak value with the diode forward resistance of 50  $\Omega$ .
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. Give the instruction formats for 8085 microprocessor.
8. What are the steps involved in programming ?
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 configuration and characteristics of CB BJT. (8)  
(ii) How FET can be used as amplifier ? (8)

**OR**

- (b) With a diagram describe the configuration and characteristics of SCR.

13. (a) Construct the Johnson counter with the required corrective feedback circuit. Show the logical and timing diagrams.

**OR**

- (b) What is the problem faced in JK flip-flop ? Check out their remedies and discuss broadly.

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) (i) Compare the memory mapped I/O and peripheral I/O. (8)  
(ii) Write short notes on output interfacing. (8)

**OR**

- (b) Explain the 8085 based temperature control system. (16)