Reg. No.										

MANIPAL UNIVERSITY

FIRST SEMESTER MSc. TECH (EMBEDDED SYSTEMS) DEGREE EXAMINATION – MAY 2015

SUBJECT: MST 503 – ANALOG & DIGITAL ELECTRONICS

Monday, May 04, 2015

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

1. Explain v-I characteristics of PN Junction with respect to Forward bias and Reverse bias.

(10 marks)

2. Briefly explain working of diode as Clippers and Clampers.

(10 marks)

3. Briefly explain about operating point and load line analyzer.

(10 marks)

4. What is Biasing? What is the need for Biasing? Write a short note on Stability.

(10 marks)

5. Answer the following:

5A. Briefly explain the working of Transistor as an Inverter

5B. Briefly explain the working of Transistor as a Switch

(5+5 = 10 marks)

6. Explain about AC analysis of Common Emitter Voltage divider Bias Configuration using Re model and determine the following values:

i) re ii) Zi iii) Zo iv) Av v) Ai

(2 marks × 5 = 10 marks)

7. **Write a short note on:**

7A. Serial in parallel out

7B. Parallel in serial out

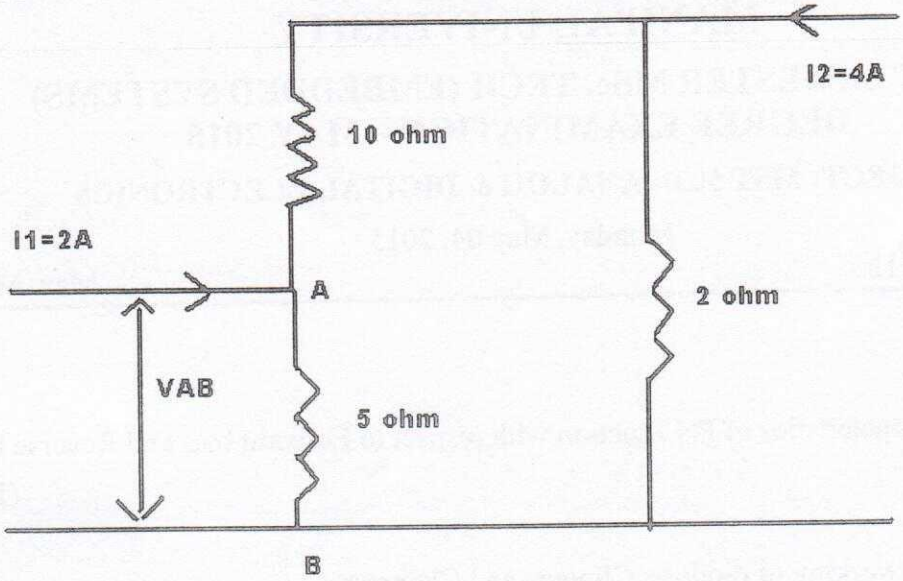
(5+5 = 10 marks)

8. Write a short note on priority encoder with relevant circuit diagram and truth table.

(10 marks)

9A. Briefly state about Super position Theorem.

9B. Apply Super position Theorem on following circuit and find voltage V_{AB}



(5+5 = 10 marks)

10. Briefly explain about evaluation of initial condition for following circuits for AC and DC Excitations:

10A. R-L circuit

10B. R-C circuit

10C. R-L-C circuit

(3+3+4 = 10 marks)