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Total No. of Printed Pages: [1]

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B. Tech. EE (Sem.-4th)
DIGITAL ELECTRONICS
Subject Code: BTEC404
Paper ID: [4111504]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. What is a Logic gate?
- b. What are basic properties of Boolean algebra?
- c. State De Morgan's theorem.
- d. Define Decoder.
- e. List out the various types of flip-flops.
- f. Mention the important characteristics of digital IC's.
- g. What do you mean by Programmable Logic Devices?
- h. Convert $(110110)_2$ to its decimal equivalent.
- i. Mention any three specifications for D/A converters.
- j. Expand VHSIC.

Section – B

(5 marks each)

- Q2. How the binary and octal number systems differ from each other?
- Q3. Show how Karnaugh map is used for minimization of Boolean functions.
- Q4. Explain the operation of D flip-flops with the help of circuit diagram, symbol and truth table.
- Q5. Classify and discuss the semiconductor memories.
- Q6. Explain successive approximation A/D converter.

Section – C

(10 marks each)

- Q7. With the help of required diagrams, explain parallel A/D converter in detail
- Q8. With the help of neat and clean circuit diagram, truth table and timing diagram, explain the ring counter in detail.
- Q9. Write short notes on:
 - (a) VHDL.
 - (b) Multiplexers.