Roll No. [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (EE) (Sem.–4) (2011 Batch)

DIGITAL ELECTRONICS

Subject Code : BTEC-404

Paper ID : [A1207]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. **Write briefly :**

   a) Discuss one application of Gray code.

   b) What is the significance of a truth table? Discuss.

   c) Differentiate between multiplexer and an encoder.

   d) List the advantages and disadvantages of K - map method.

   e) Write down the advantages and disadvantages of successive approximation type A/D converter.

   f) Differentiate between RAM and ROM.

   g) What is a parity bit? Discuss its need.

   h) Differentiate between Boolean algebra and ordinary algebra.

   i) Define Fan-in, Fan-out and unit load with respect to the logic families.

   j) Comment upon the accuracy and resolution of digital to analog converter.

CT

SECTION-

2. Use the laws of Boolean algebra, to re
their simplest form. Name the laws used

$$F = \overline{(B \oplus \overline{C}) + (\overline{AB})(\overline{\overline{A} + C})}$$

3. Draw the logic diagram and explain t
down counter.

4. Explain the working of a SR flip-flop.
SR flip flop are taken care by JK flip fl

5. Compare TTL, ECL, MOS and RTL log

6. What is ROM? Discuss its organization

SECTION-

7. a) Draw the logic/circuit diagram of Bi
and explain its working.

   b) Draw and explain the working of a

8. Discuss the following :

   a) Hamming code for error detection a

   b) Decision control structure using VHI

9. Reduce the expression

$\sum m(0, 2, 3, 10, 11, 12, 13, 16, 17,$
simplest possible form using Quine-Mc