Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 07

B.Sc.(IT)   (Sem.–2)
DIGITAL ELECTRONICS FUNDAMENTALS
Subject Code : BS-102
Paper ID : [B0405]

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 SIX questions carrying TEN marks each and a student has to attempt any FOUR questions.**

SECTION-A

Q1. Write briefly :

  a) Convert $(1046.25)_{10}$ into $(?)_{16}$

  b) Perform binary subtraction using 2's complement : 36 - 47

  c) Explain Minterms and Maxterms.

  d) What do you mean by Universal Gate?

  e) Explain the LATCH by drawing the logical diagram.

  f) What do you mean by Shift Register?

  g) Differentiate between bit, byte and word.

  h) What is Access Time?

  i) What is Bipolar RAM cell?

  j) What is Unicode?

SECTION-B

Q2) Write short note on :

   a) Weighted codes

   b) Self complementary codes

   c) Cyclic codes

Q3) Simplify the Boolean expression $F(A, B, C, D) = \Sigma(0, 1, 2, 5, 8, 9, 10)$ in

   a) Sum of Product form

   b) Product of Sum form

Q4) Implement the following Boolean functions using OR-AND-INVERT Gate

     $F = (\bar{A} + \bar{B})(A+C)(A+D)$

Q5) Design a 6*32 Decoder with the help of 3*8 decoders.

Q6) Explain 4-bit synchronous counter by drawing logical diagram.

Q7) Discuss in detail classification and characteristics of memories.