DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE-RAIGAD-402 103

Winter Semester Examination - 2019 $S\!\!\times$

Branch: B. Tech   Sem:-I

Subject:- Digital Electronics & Microprocessor (BTCOC305)   Marks: 60
Date:-19/12/2019   Time:- 3 Hrs

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Instructions:-

1) Each Question carries 12 marks.
2) Attempt any 5 questions of the following.
3) Illustrate your answers with neat sketches, diagram etc, wherever necessary
4) Assume suitable data if necessary and mention it clearly

Q.No.1 a) Explain the working of following gates with their truth table and logic   6
               symbol

   a. AND

   b. EX-OR

   c. NAND

   b) Perform the following Conversions   6

   I. $(49.25)_{10} = ( )_2$

   II. $(4F7.A8)_{16} = ( )_8$

   III. $(111011)_2 = ( )_{gray}$

Q.No.2 a) Minimize the following equation using k-map.   6

   I. $Y = \Sigma\, m(0, 1, 2, 4, 5, 6)$

   II. $Y = \pi\, m\,(0, 2, 4, 5)$.

   b) Explain the working of Full Subtractor with Truth table. Implement it   6
       with half subtractors.

Q.No.3 **a)** What are the differences between combinational and sequential circuits? Explain gated S-R flip flop with logic diagram and truth table.   6

       b) Draw and explain a 4 bit ring counter using D flip flops. Draw its state diagram and sequence table   6

Q.No.4 **a)** Explain FLAG register of 8086   6

       b) Compare features of 8085 with 8086   6

Q.No.5 **a)** Draw and explain memory read timing diagram in Minimum Mode configuration of 8086   6

       b) Explain hardware and software interrupts of 8086.   6

Q.No.6 **a)** With instruction example explain addressing modes of 8086   6

       b) Write a program for addition of two 16 bit numbers using 8086   6

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