

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

Winter Semester Examination - 2019 *SX*

Branch: B. Tech

Sem:-I

Subject:- Digital Electronics & Microprocessor (BTCOC305)

Marks: 60

Date:-19/12/2019

Time:- 3 Hrs

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

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- Q.No.1** a) Explain the working of following gates with their truth table and logic symbol 6
- a. AND
 - b. EX-OR
 - c. NAND
- b) Perform the following Conversions 6
- I. $(49.25)_{10} = ()_2$
 - II. $(4F7.A8)_{16} = ()_8$
 - III. $(111011)_2 = ()_{\text{gray}}$
- Q.No.2** a) Minimize the following equation using k-map. 6
- I. $Y = \sum m(0, 1, 2, 4, 5, 6)$
 - II. $Y = \pi m(0, 2, 4, 5).$
- b) Explain the working of Full Subtractor with Truth table. Implement it with half subtractors. 6

- 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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