Total No. of Questions – [03]   Total No. of Printed Pages: 01

G.R. No.	

OCTOBER 2019/ INSEM (T1)
S. Y. B.TECH. (COMPUTER ENGINEERING/INFORMATION TECHNOLOGY)
(SEMESTER – III)
COURSE NAME: ANALOG AND DIGITAL ELECTRONICS
COURSE CODE: CSUA21181/ITUA21181
(PATTERN 2018)

Time: [1 Hour]   [Max. Marks: 20]

Instructions to candidates:
1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed.
4) Assume suitable data where ever required.

Q 1) Attempt any **one**

a) Explain 1's complement and 2's complement representation with suitable example.   [8]
   Simplify the Boolean algebraic Expression for designing digital circuits using K-Map:
   $$f(A,B,C,D)=\sum m(0, 1, 2, 3, 5, 7, 8, 9, 11, 14)$$

b) Define standard SOP and POS forms. Simplify the Boolean algebraic expression   [8]
   for designing digital circuits using Quine-McCluskey Method:
   $$f(A,B,C,D) = \sum m (0, 1, 2, 3, 5, 7, 8, 10, 12, 13, 15)$$

Q 2) Attempt any **one**

a) Design 4-bit Binary to Gray code converter using K-Map and draw logic   [8]
   circuit diagram.

b) Draw and explain 4-bit BCD adder using binary adder IC 7483. Also explain   [8]
   three cases of BCD addition using one example each.

Q 3) Attempt any **one**.

a) Draw the block diagram, truth table and excitation table of JK-Flip Flop.   [4]

b) Convert an S-R Flip-Flop to a J-K Flip-Flop   [4]

Page 1/1