DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – September 2019

Course: B. Tech in Information Technology Sem: III

Subject Name: Switching Theory and Logic Design Subject Code: BTITC302

Max Marks: 20 Date: 04/10/2019 Duration:- 1 Hr.

Instructions to the Students:

1. Assume suitable data wherever necessary.

(Level/CO) Marks

Q. 1 Select any one option from the following questions. 6

1. The universal gate is CO1

a) NAND gate b) OR gate c) AND gate d) None of the above

2. Decimal 43 in hexadecimal and BCD number system is resp..... and CO1

a) B2 and 01000011 b) 2B and 01000011

c) 2B and 00110100 d) B2 and 01000100

3. Perform BCD addition: 2+3= _____ CO2

a) 0010 b) 0011 c) 0101 d) 1010

4. A Digital word has even parity CO2

a) if it has even number of 1s b) if it has even number of 0s

c) if the decimal value of word is even d) none of these

5. A Karnaugh map (K-map) is an abstract form of _____ diagram CO2

organized as a matrix of squares.

a) Venn Diagram b) Cycle Diagram

c) Block diagram d) Triangular Diagram

6. The prime implicant which has at least one element that is not present in any CO2

other implicant is known as

a) Essential Prime Implicant b) Implicant

c) Complement d) None of the Mentioned

Q.2 Solve Any Two of the following. 3 X 2

(A) Some 8-4-2-1 code words are transmitted in Hamming code with even parity CO1

checking. The following words are received:

a) 0011101 b) 1100100 c) 1100110

Find out correctly received words if any.

Find out the words received with single error and specify the correct decimal digit.

(B) Minimize the following expression using K-Map. CO2

f1(A,B,C,D)=Σm(0,1,2,3,5,7,8,9,11,14)

(C) Convert the following hex numbers to octal numbers CO2

a) A72E b)0.BF85

Q. 3 Solve Any One of the following. 8

(A) Simplify the logic function using Quine McCluskey minimization technique. CO2

$Y(A,B,C,D)= \Sigma m(0,1,3,7,8,9,11,15)$

(B) What do you mean by error detection and correction? CO1

Represent the decimal 396 and 4096 in binary form using

1) BCD Code
2) Excess-3 Code
3) Octal Code
4) Hexadecimal Code

*** End ***