Total No. of Printed Pages: 3

SUBJECT CODE NO:- 2113
FACULTY OF SCIENCE & TECHNOLOGY
B.Sc. F.Y Sem-I
Examination March/April-2022 (To be held in June/July-2022)
Electronics Paper-II
Digital Electronics-I

[Time: 1:53 Hours]   [Max. Marks:50]

Please check whether you have got the right question paper.

N.B.   1) Attempt all questions.
                                          2) Illustrate your answer with Suitable diagram.

Q.1   Perform the following operation.   20
1) $(57 \cdot 125)_{10} = (?)_2$
2) $(8CDE)_{16} = (?)_2$
3) $(101010 \cdot 110)_2 = (?)_{10}$
4) $(1011101)_2 - (11110)_2 = (?)_2$
5) $(1101110)_2 = (?)_8$

OR

Explain the working of OR gate, AND gate & NOT gate with the help of suitable Ckt diagram & 20
truth table.

Q.2   What is NAND gate? Explain the working of two input NAND gate with help of suitable Ckt   20
diagram using DTL logic.

OR

Write Short notes any four of the following.   20
a) 3 to 8 line Decoder
b) 2 : 4 Demultiplexer
c) Half Substractor
d) Product of Sum (Pos)
e) Postulates of Boolean Algebra
f) Distributive law

Q.3   Multiple Choice question.   10

1) The two symbols _____ & _____ used in binary number.
a) 1 & 2
b) 0 & 0
c) 1 & 1
d) 0 & 1

1

2) The Decimal system uses base of _____ for Positional Values.
a) 2
b) 10
c) 16
d) 8

3) The 2's complement of 1000_2 is
a) 0111
b) 0101
c) 10000
d) 1000

4) The Binary equivalent of Hex number 'A'
a) 1100
b) 1011
c) 1010
d) 1000

5) A NOR gate is ON only when all it's inputs are
a) ON
b) Positive
c) Negative
d) OFF

6) An AND gate is
a) Implements logic addition
b) equivalent to a series switching Ckt
c) Implements logic susbtraction
d) equivalent to parallel switching Ckt

7) Boolean algebra is essentially based on
a) Logic
b) Symbols
c) Numbers
d) Truth

8) The expression $\overline{ABC}$ can be simplified to
a) $\bar{A} \cdot \bar{B} \cdot \bar{C}$
b) $\bar{A} + \bar{B} + \bar{C}$
c) $AB + BC + CA$
d) $AB + \bar{C}$

2

9) The device used to convert a binary numbers to a 7-segment display format is
a) Multiplexer
b) Encoder
c) Register
d) Decoder

10) The AND operation can be produced with
a) Two AND gates
b) TWO NAND gates
c) Three NAND gates
d) Three NOR gates