PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2022
(Third Semester)
Branch – ELECTRONICS

DIGITAL PRINCIPLES AND APPLICATIONS

Time: Three Hours   Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 x 1 = 10)

1. The binary equivalent of the decimal number 10 is _____
   (i) 0010   (ii) 10   (iii) 1010   (iv) 010

2. The octal equivalent of 1100101.001010 is _____.
   (i) 624.12   (ii) 145.12   (iii) 154.12   (iv) 145.21

3. The inputs of a NAND gate are connected together. The resulting circuit is …………
   (i) OR gate   (ii) AND gate   (iii) NOT gate   (iv) None of the above

4. The NAND gate is AND gate followed by ………………….
   (i) NOT gate   (ii) OR gate   (iii) AND gate   (iv) None of the above

5. One multiplexer can take the place of _____
   (i) Several SSI logic gates   (ii) Combinational logic circuits
   (iii) Several Ex-NOR gates
   (iv) Several SSI logic gates or combinational logic circuits

6. According to boolean law: $A + 1 = ?$
   (i) 1   (ii) A   (iii) 0   (iv) A'

7. The flip flops are categorized into _____
   (i) One   (ii) Two   (iii) Three   (iv) Four

8. In which flip flop the present input will be the next output?
   (i) SR   (ii) J-K   (iii) D   (iv) T

9. The equivalent weight of LSB in a four bit variable resistive divider D/A converter is
   (i) ¼   (ii) 1/16   (iii) 1/15   (iv) 8/15

10. for a 5 bit resistive divider network the weight assigned to MSB is
    (i) 1/31   (ii) 1/32   (iii) 8/31   (iv) 16/31

SECTION - B (25 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks   (5 x 5 = 25)

11 a   Analyze Binary number system.
                    OR
    b   Describe short note on BCD Code.

12 a   Explain about Excess 3 code and Parity codes with truth table.
                    OR
    b   Explain about Boolean algebra.

13 a   Describe the Karnaugh Theorem.
                    OR
    b   Explain about Half adder circuit operation with neat diagram.

14 a   sketch the Hall subtractor with example.
                    OR
    b   Explain about Shift Register types.

15 a   Explain about dual slope type with examples.
                    OR
    b   Bring out on simultaneous Conversion.

SECTION - C (40 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks   (5 x 8= 40)

16 a   Discover the EBCDIC.
                    OR
    b   Enumerate the feature of the BCD Code

17 a   Examine the Demorgans Theorem.
                    OR
    b   identify Point out SOP and POS.

18 a   Summaries the Full adder with neat diagram .
                    OR
    .b   Compare Encoder and Decoder.

19 a   Classify different types Serial in Parallel out and parallel in serial out.
                    OR
    b   Enumerate the feature Up \ Down Counter.

20 a   Classify Weighted resistors with examples.
                    OR
    b   Justify the A\D Converters.

                    Z-Z-Z   END