

**Model Paper “Digital Electronics”**  
**For Diploma in Computer Hardware & Network Engineering**  
**(Semester-I) Annual Examination 2015 & Onwards**

**Objective**  
**Part-A**

Roll No. \_\_\_\_\_

Time: 15 Mins

Marks 10

**Note: This Part is compulsory. It should be attempted on question paper and returned to the supervisory staff after the prescribed time. Cutting, overwriting and use of lead pencil is not allowed. Supervisory staff is required to attach it with the answer book.**

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**Q. 1: Choose the Correct answer and encircle it.**

1: Number of digits in octal system is?

- |      |       |
|------|-------|
| A. 4 | B. 6  |
| C. 8 | D. 16 |

2: What is the output state of an or gate if the input are 0 and 1

- |      |      |
|------|------|
| A. 0 | B. 1 |
| C. 2 | D. 3 |

3: NOT gate has

- |                             |                             |
|-----------------------------|-----------------------------|
| A. Two input and one output | B. One input and one output |
| C. One input and two output | D. Two input and two output |

4: The decimal number 127 may be represented by

- |               |               |
|---------------|---------------|
| A. 1111 1111B | B. 1000 0000B |
| C. EEH        | D. 0111 1111  |

5: A megabyte represents

- |                    |                   |
|--------------------|-------------------|
| A. 1 million bytes | B. 1000 kilobytes |
| C. 210 bytes       | D. 200 bytes      |

6: The number of inputs and outputs in a full adder are

- |            |            |
|------------|------------|
| A. 2 and 1 | B. 2 and 2 |
| C. 1 and 2 | D. 1 and 1 |

7: A flip-flop is a

- |                          |                                  |
|--------------------------|----------------------------------|
| A. Combinational circuit | B. Memory element                |
| C. Arithmetic element    | D. Memory and arithmetic element |

8: In J-K flip flop toggle means

- |   |                        |
|---|------------------------|
| A. Set Q=1 and Q=0                        | B. Set Q=0 and Q=1     |
| B. Change the output to the opposite side | D. No change in output |

9: The simplest register is

- |                            |                           |
|----------------------------|---------------------------|
| A. Buffer                  | B. Shift                  |
| C. Control buffer register | D. Bidirectional register |

10: A counter is

- |                                      |                      |
|--------------------------------------|----------------------|
| A. Sequential cct                    | B. Combinational cct |
| C. Both combinational and sequential | D. None of these     |

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**Subjective**  
**Part-B**

**Time: 2:15 Hours**

**Marks: 40**

**SECTION-I**

**Q. 1 Write the short answer to any Twelve (12) from the following questions. 12 x 2 = 24**

- 1- Define digital system?
- 2- What is meant by bit?
- 3- List the number system
- 4- What is logic gate?
- 5- Write down the advantages of universal gates
- 6- State De Morgan's theorem
- 7- State advantages and disadvantages of TTL
- 8- Define half adder
- 9- Define flip-flop
- 10- Write down the operation of D-flip flop
- 11- What is master slave flip-flop?
- 12- Define register
- 13- Write down the types of counters
- 14- What is the difference between T and D flip flop
- 15- Convert hexadecimal value of 16 into decimal
- 16- Define QUIP
- 17- Define CMOS
- 18- What is pin grid array

**SECTION-II**

**Note: attempt any two (2) questions**

2x8=16

Q. 2: a) Convert 1010 into decimal and hexadecimal

b) Convert EF into binary and decimal

Q. 3: Explain J-K and master slave J-K flip flop

Q. 4: Explain the types and working of any register circuits

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