**Bhavan's Tripura Vidyamandir**

1st Quarterly Test : (2025-26)

**Class:-11** **Subject:- Computer Science**

Time:- 1 Hours Total :- 25 Marks

Name of the Student : Roll : Stream: Section:

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**General instructions:**

- *This question paper contains 16 questions having four sections, Section A, B, C and D.*
- *All questions are compulsory.*
- *Section A has 11 questions carrying 01 mark each.*
- *Section B has 03 Very Short Answer type questions carrying 02 marks each.*
- *Section C has 01 Short Answer type question carrying 03 marks each.*
- *Section D has 01 Long Answer type question carrying 05 marks each.*
- *Use of calculator & smart watch are strictly prohibited.*
- *Internal Choices have been made for some questions*

## SECTION-A [1X11=11]

1) Component of CPU which is responsible for comparing the contents of two pieces of data is-

a) ALU b) CU c) Memory d) Regisater

2) ASCII is a _____ bit code while extended ASCII is a _____ bit code.

3) How many bytes are there in 1111 1101 1001 1011

a)1 b) 2 c) 4 d) 8

4) NAND cannot implement _____ gate.

a) AND b) OR c) NOT d) none of these

5) If a Boolean expression is True, its complement is also True. State **True/False**

6) The _____ memory is a special high speed memory storing the most recently accessed data

7) The binary equivalent of the octal number 13.54 is _____

a) 1011.1011 b) 1001.1110 c) 1101.1110 d) none of these

8) The expression for the Absorption law is given by _____

a) A + AB = A b) A + AB = B c) AB + AA' = A d) A + B = B + A

9) Each hexadecimal number is replaced with _____ bits in Hex to binary conversion.

10) Write the full form of ISCII and EEPROM.

**Directions:** In the following questions, a statement of Assertion (A) is followed by a statements of Reason (R). Mark the correct choice as

(a) Both A and R are true R is the correct explanation of A

(b) Both A and R are true but R is not the correct explanation of A

(c) A is true but R is false

(d) A is false but R is true.

11) **Assertion:** The primary memory is volatile memory as all its contents get erased as soon as the power goes off.

**Reason:** The cache memory is also a primary memory.

## SECTION-B [2X3=6]

12) What is the need of RAM? How does it differ from ROM? (1+1)

13) Convert i) $(1010110.01011)_2$ to octal ii) $(A13B)_{16}$ to octal (1+1)

14) State distributive law and verify it using Truth table.

**OR**

Verify the following expression algebraically using Boolean laws.

u′ + v = u′v′ + u′v + uv

## SECTION-C [3X1=3]

15) i) Find the complement of: (AB)′+A′+AB (2+1)

ii) Encode the word "PYTHON" using ASCII and convert the encoded value into binary.

**OR**

Draw Logic Circuit diagram for the following expression. (1.5+1.5)

i) Q=((A+BC)′+(AB′)′)′ ii) (PQ′+(Q′+R))P′

## SECTION-D [5X1=5]

16) Simran is trying to make a note on conversion of number system. She has written following lines:

*The number system is a form of expressing the numbers. Broadly, in number system conversion, a number of one base is converted to a number of another base. There are a variety of number systems such as binary numbers, decimal numbers, hexadecimal numbers, octal numbers which can be exercised.*

*Number system conversions deal with the operations to change the base of the numbers. For example to change a decimal number with base 10 to binary number with base 2. We can also perform the arithmetic operations like addition, subtraction, multiplication on the number system.*

***In order to convert decimal to binary, divide the decimal number by 2.***
***In order to convert decimal to octal number we have to divide the given original number by 8 such that base 10 changes to base 8.***
***In order to convert decimal to bexadecimal, divide the decimal number by 16.***
***Mahesh, Simran's friend after reading the article has some queries on his mind. Help him in answering the questions***

I) What will be the result if we will convert 25 into binary number system?

a) 11001 b) 101000 c) 10001 d) 11001

II) What will he the result if we will convert 128 into octal number system?

a) 120 b) 200 c) 1001 d) 12

III) What will be the result if we will convert 128 hexadecimal number system?

a) 180 b) 20 c) 80 d) 8

IV) What will be the output of binary number 1010.011 in octal number system?

a) 8.24 b) 12.3 c) 101.25 d) 13.2

V) What will be the output of decimal 10.25 in octal number system?

a) 12.2 b) 12.0 c) 2.00 d) None of the above

Or,

16) a) Define Tautology and Truth table. 2

b) Find the dual for the given expression: (A+0).(A.1.A') 1

c) Prepare a truth table for A(BC'+B'C) 2