

VIRTUAL UNIVERSITY OF PAKISTAN

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CORRECT ANSWER SOLVED BY HADI
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WARNING: Team HADI is not responsible for any mistake or wrong answer. All students reading and using this document may check and confirm the answers at their own.



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Best of luck!



Question No : 1 of 26

Marks: 1 (Budgeted Time 1 Min)

The range of Excess-8 code is from _____ to _____

Answer (Please select your correct option)

+7 to -8

correct

+8 to -7

+9 to -8

-9 to +8

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Question No : 2 of 26

Marks: 1 (Budgeted Time 1 Min)

The decimal "17" in BCD will be represented as _____

Answer (Please select your correct option)

11101

11011

10111

11110

correct

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Question No : 3 of 26

Marks: 1 (Budgeted Time 1 Min)

The four outputs of two 4-input multiplexers, connected to form a 16-input multiplexer, are connected together through a 4-input _____ gate

Answer (Please select your correct option)

AND



OR



NAND



XOR



correct

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Question No : 4 of 26

Marks: 1 (Budgeted Time 1 Min)

A standard interface for programming the In-System PLD consists of _____.

Answer (Please select your correct option)

2-wire

4-wire

8-wire

16-wire

correct

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Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)

_____ Dual, 4-input multiplexer can be connected to form a 16-input multiplexer.

Answer (Please select your correct option)

2

3

4

correct

5

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Question No : 6 of 26

Marks: 1 (Budgeted Time 1 Min)

S-R latch can be implemented by using _____ gates

Answer (Please select your correct option)

AND, OR

correct

NAND, NOR

NAND, XOR

NOT, XOR

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Question No : 7 of 26

Marks: 1 (Budgeted Time 1 Min)

A product term is 0 when _____.

Answer (Please select your correct option)

Any of the literals is 1

At least two literals are 1

All the literals are 1

Any of the literal is 0

correct

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Question No : 8 of 26

Marks: 1 (Budgeted Time 1 Min)

What will be the output of a 3-input NAND gate for the input values: A=1, B=0, C=1

Answer (Please select your correct option)

- Zero
- One
- Undefined
- No output, as input is invalid

correct

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Question No : 9 of 26

Marks: 1 (Budgeted Time 1 Min)

_____ is not a valid hexadecimal number.

Answer (Please select your correct option)

1234

ABCD

1001

DEHF

correct

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Question No : 10 of 26

Marks: 1 (Budgeted Time 1 Min)

2's complement of any binary number can be calculated by

Answer (Please select your correct option)

adding 1 to 1's complement

correct

subtracting 1 from 1's complement.

calculating 1's complement and inverting Most significant bit

adding 1's complement twice

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Question No : 11 of 26

Marks: 1 (Budgeted Time 1 Min)

A BCD to 7-Segment decoder has _____ inputs and _____ outputs.

Answer (Please select your correct option)

3, 7

4, 7

correct

7, 3

7, 4

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Question No : 12 of 26

Marks: 1 (Budgeted Time 1 Min)

Which of the following simplification method is intended to be used for Boolean expressions having more than four variables?

Answer (Please select your correct option)

Boolean Algebra and rules

Karnaugh Map

Quine-McCluskey

Demorgan's Theorem

correct

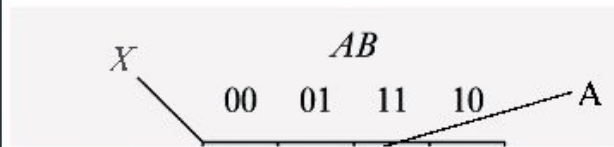
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Question No : 13 of 26

Marks: 1 (Budgeted Time 1 Min)

In the following Karnaugh map, which group has "legal grouping" ?



Answer (Please select your correct option)

A

B

C

D

correct

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Question No : 13 of 26

Marks: 1 (Budgeted Time 1 Min)

	00	1	1	1	0	
	01	1	0	0	1	
<i>CD</i>	11	0	1	1	1	

Diagram showing a 3x5 grid of cells. The first column contains labels '00', '01', and '11'. The second column contains '1', '1', and '0'. The third column contains '1', '0', and '1'. The fourth column contains '1', '0', and '1'. The fifth column contains '0', '1', and '1'. The sixth column contains '0', '1', and '1'. A blue box highlights the cells (01, 1), (01, 2), (01, 3), (01, 4), (01, 5), (11, 3), (11, 4), and (11, 5). Labels B, C, and D point to the cells (00, 4), (01, 5), and (11, 3) respectively.

Answer (Please select your correct option)

A

B

C

D

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Question No : 13 of 26

Marks: 1 (Budgeted Time 1 Min)

11	0	1	1	1
10	0	1	1	0

D

Answer (Please select your correct option)

A

B

C

D

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Question No : 14 of 26

Marks: 1 (Budgeted Time 1 Min)

What are the values of sum and carry out when two 4-bit binary numbers (1011 and 1111) are applied to a 4-bit parallel adder and carry input is 1.

Answer (Please select your correct option)

$\Sigma_4 \Sigma_3 \Sigma_2 \Sigma_1 = 0111, C_{out} = 0$

$\Sigma_4 \Sigma_3 \Sigma_2 \Sigma_1 = 1111, C_{out} = 1$

$\Sigma_4 \Sigma_3 \Sigma_2 \Sigma_1 = 1011, C_{out} = 1$

$\Sigma_4 \Sigma_3 \Sigma_2 \Sigma_1 = 1100, C_{out} = 1$

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Question No : 15 of 26

Marks: 1 (Budgeted Time 1 Min)

A particular half-adder has _____ inputs and _____ output(s).

Answer (Please select your correct option)

3, 1

3, 2

2, 1

2, 2

correct

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Question No : 16 of 26

Marks: 1 (Budgeted Time 1 Min)

TTL based devices work with a DC supply of ____ Volts

Answer (Please select your correct option)

+10



+5



correct

+3



3.3



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Question No : 17 of 26

Marks: 1 (Budgeted Time 1 Min)

In CMOS 5 Volt series, Input voltage for Logic high signal (V_{IH}) is in the range of _____ volts.

Answer (Please select your correct option)

3.5 to 5

correct



4.5 to 5

0 to 5

0 to 3.5

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Question No : 18 of 26

Marks: 1 (Budgeted Time 1 Min)

A multiplexer circuit has _____ input(s) and _____ output(s).

Answer (Please select your correct option)

Single, single

Single, multiple

Multiple, single

Multiple, multiple



correct

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Question No : 19 of 26

Marks: 1 (Budgeted Time 1 Min)

The binary values for the standard SOP expression, $ABC\bar{D} + \bar{A}BC\bar{D} + \bar{A}\bar{B}C\bar{D}$ are _____

Answer (Please select your correct option)

1110 + 0110 + 0001

correct



1011 + 1111 + 1011

0001 + 1001 + 1110

1010 + 1110 + 0101

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Question No : 20 of 26

Marks: 1 (Budgeted Time 1 Min)

Determine the binary values of the variables for the following standard POS expression.
 $(A + \bar{B} + C)(\bar{A} + B + \bar{C})$

Answer (Please select your correct option)

$(1 + 0 + 1)(0 + 1 + 0)$

correct



$(0 + 1 + 0)(1 + 0 + 1)$

$(1 + 0 + 0)(0 + 0 + 1)$

$(0 + 1 + 0)(1 + 1 + 0)$

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Question No : 21 of 26

Marks: 2 (Budgeted Time 4 Min)

How many possible outputs does a decoder of 3 inputs contain?

Answer ([Please click here to Add Answer](#))



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Question No : 22 of 26

Marks: 2 (Budgeted Time 4 Min)

How can we use 3-to-8 decoder to implement SOP expressions?

Answer ([Please click here to Add Answer](#))



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Question No : 23 of 26

Marks: 3 (Budgeted Time 6 Min)

For a two bit comparator circuit, specify all the inputs for which $A > B$ is set to 1.

Answer ([Please click here to Add Answer](#))



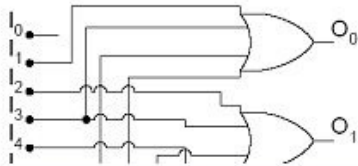
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Question No : 24 of 26

Marks: 3 (Budgeted Time 6 Min)

Identify the following circuit that is which combinational circuit is being represented by this diagram?



Answer (Please [click here](#) to Add Answer)

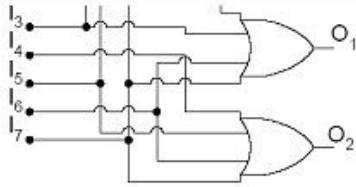
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Question No : 24 of 26

Marks: 3 (Budgeted Time 6 Min)



Answer ([Please click here to Add Answer](#))

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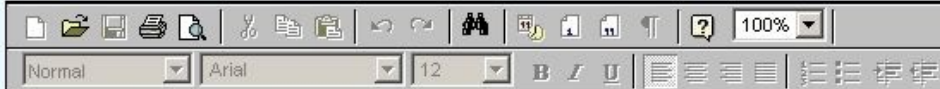
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Question No : 25 of 26

Marks: 5 (Budgeted Time 10 Min)

Consider a logical circuit for 4-bit binary number. The circuit gives output 0 for adjacent 0s in a binary number. Draw the karnaugh map of such circuit and derive simplified POS expression.

Answer ([Please click here to Add Answer](#))



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Question No : 26 of 26

Marks: 5 (Budgeted Time 10 Min)

Multiplexers can be used as a "Logic Function Generator". Draw only circuit diagram and function table based on three variables.

Answer ([Please click here to Add Answer](#))



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