1.1.2 Hexadecimal

Wednesday, 17 February 2021 7:48 PM



1.1.2

Hexadeci...

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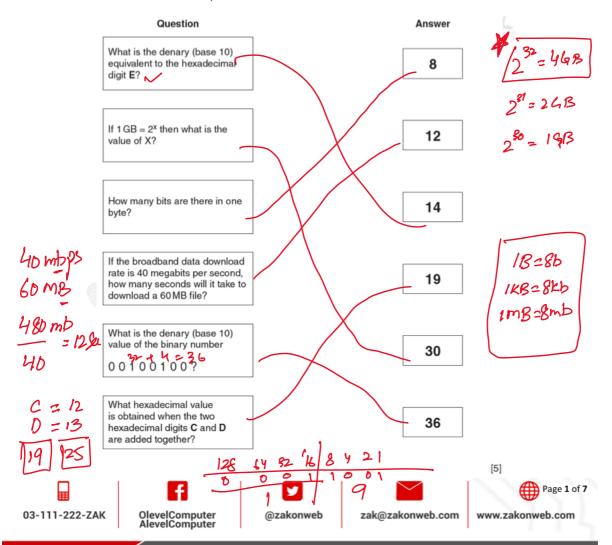


Topic: 1.1.2 Hexadecimal

- 1. Express the denary value 109 as a hexadecimal number.
- 2. Express the denary number 78 as a hexadecimal number,
- 3. Convert the following Hexadecimal numbers into denary system and binary system:
 - (i) A1 (ii) 37 (iii) FF (iv) OD (v) ABC

May/June 2015 P11 (2210)

9 Draw a line to connect each question to the correct answer.



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Topic: 1.1.2 Hexadecimal

May/June 2015 P12 (2210)

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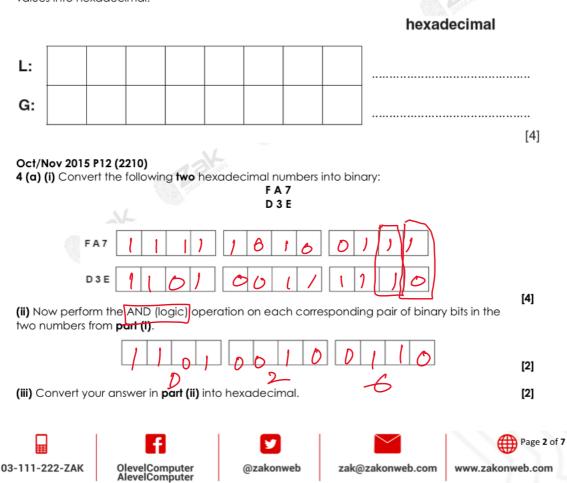
(b) An encryption system works by shifting the binary value for a letter one place to the left then becomes:



This binary value is then converted to hexadecimal; the hexadecimal value for "A" will be:

C 2

For the two letters "L" and "G", shift the binary values one place to the left and convert these values into hexadecimal:



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(b) (i) The following code shows HTML 'tag' pairs on either side of the text stating the colour



Yellow is a combination of red and green, magenta a combination of red and blue and cyan a combination of green and blue.

(ii) Describ	e how ot	ner colour						
May/June			hovadocir	nal number into	12 bit bingn			
3 (a) Con	ven me	ollowing	4 A F	nai nomber inio	12-bit birtary.			
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	, ,				() ([3]		
					eiro. A timer that controlled display.			
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0 0	0 1	0 1	0 0	20 seconds			-10	
The timer	will coun	it down in	seconds.	oit register 20 see	onds after the tim	o shown a	boyo: / a	
(1)	3110W 111	e values i	•		hours	le snown a	100 e. 60	
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			1101	$0 \mid 1 \mid 0$	CCCCTIGC			[3]
		4		y			(1)	Page 3 of
-111-222-7	ZAK	OlevelCo	mputer	@zakonweb	zak@zakonv	veb.com	www.zakonv	
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pical Pa pical Pa pic: 1.1. (ii) Write the Oct/Nov 2 11 A seculdeactivat (a) The alo	2 Hexa he hexace rity systems to the alcomoder.	ciencers adecimal value (2210) m is installarm. e is set to	al led in a ho hexadecii	O e minutes registe use. A hexadeci mal number 2 A	r from part (b)(i) . mal number is ent		ZAFARAL	veb.com
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State what 6-digit hexadecimal values should replace X, Y and Z in the above code.

[3]

Oct/Nov 2017 P12 (2210)

UP DOWN 0 0 1 0 0 1 LEFT RIGHT 0 0 1 1 OPEN 0 0 1 CLOSE 0 0 1 1 Page **4** of **7** OlevelComputer AlevelComputer 03-111-222-ZAK @zakonweb zak@zakonweb.com www.zakonweb.com **Computer Science 2210 Topical Past Papers** Topic: 1.1.2 Hexadecimal The instructions are entered as hexadecimal values. An operator enters the values: 3 Convert the values and write down the operation (e.g. RIGHT) carried out by the robot arm. 1 C 3 [5] Oct/Nov 2017 P13(2210) 1 (b) The display screen shows a hexadecimal error code: E04 This error code means that the water will not empty out of the washing machine. Convert this error code to binary. [3] [1] (c) State why hexadecimal is used to display the error code. May/June 2018 P11 (2210) 2 Dheeraj identifies three hexadecimal numbers. Write the **denary** number for each of the three hexadecimal numbers: 2A 101 21E [3] 10 RockICT is a music business that has a website to allow customers to view and buy the products it sells. The website consists of web pages. (a) Describe what is meant by HTML structure and presentation for a web page. [4]

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1 A robot arm in a factory is programmed to move products.

The binary instructions to operate the robot arm are:

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Topic: 1.1.2 Hexadecimal

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4 Jafar is using the Internet when he gets the message:

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"D03, page is not available"

Jafar remembers that hexadecimal is often used to represent binary values in error codes. Convert the hexadecimal number in the error message into 12-bit binary.



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(b) Each letter in ASCII can also be represented as a hexadecimal value.

The word KEY has the 8-bit binary values:

К	E	Υ	
01001011	01000101	01011001	

(i) Convert the three 8-bit binary values into hexadecimal.

0100	1011	 48
0100	0101	 45
0101		59
0.0.		

[3]



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Topic: 1.1.2 Hexadecimal

(ii) Give three other uses of hexadecimal notation in computer science.



	2	MAC A	lbens		
	3	Assembly 1	low level lay	vge	
		Debugging		8	[3]
	(iii) State two ber	nefits of using hexad	ecimal notation to	o represent binary v	alues.
	Benefit 1	c fasy to un	despud/re	d/write	
		- Taken len			
	Benefit 2	less error	prone.		
					[2]
Oct/N	Nov 2018 P13 (2210)		1/-		
4 The	MAC address of a	davias is vanvasautā	d vaina havadaa		
rne	WAC address of a c	device is represente	d using nexadeci	mai.	
A se	ection of a MAC add	ress is shown. Each	pair of hexadeci	mal digits is stored	using 8-bit binary.
(a)		to show the 8-bit bi ready been converte		for the section of N	IAC address. The
	6A	FF	08	93	
	01101010	Million	060 0400	/201001	
					[3]
(b)	Explain why data is	stored as binary in	computers.		
					[2]
		Fi	7		Page 7 of 7
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