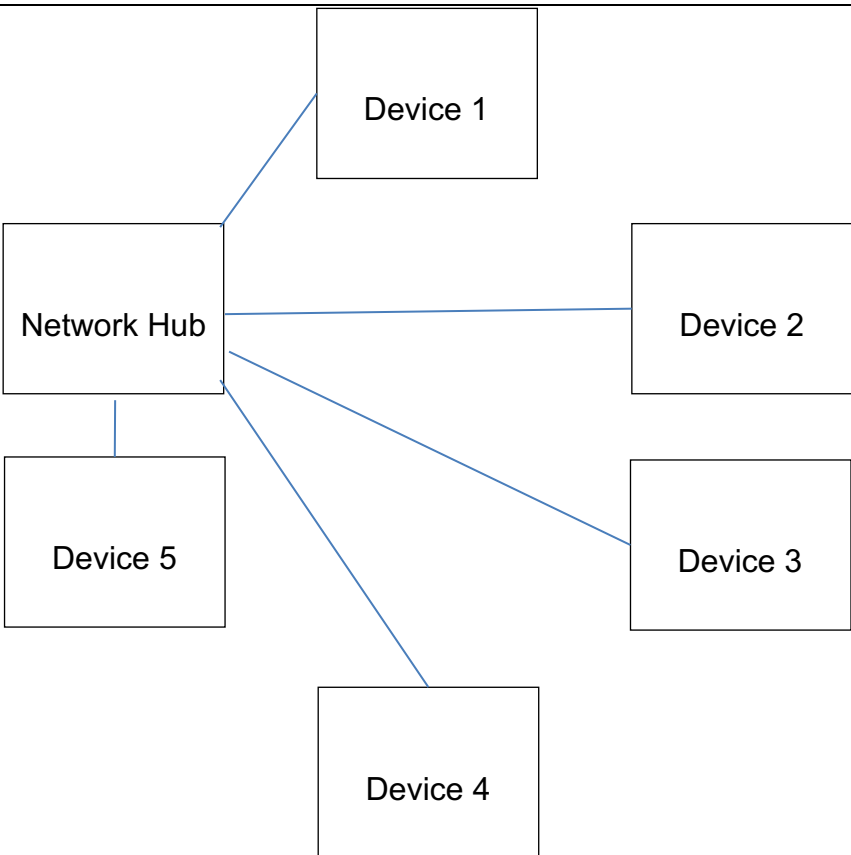


CWSS 2021 PRELIM 4E5N COMP P1 MS

Question		Answer
1	(a)	110_{10} $= 1 \times 2^6 + 1 \times 2^5 + 1 \times 2^3 + 1 \times 2^2 + 1 \times 2$ $= 1101110_2$
	(b)	$19C_{16}$ $= 1 \times 16^2 + 9 \times 16 + 12$ $= 412$
2	(a)	Control Unit
	(b)	Arithmetic Logic Unit
	(c)	Bus//Data and Address Bus [Don't Accept] Address Bus
3	(a)	<ul style="list-style-type: none"> • Programs written in programming language are easier for human to understand and also easy to debug. • Machine code is usually in a binary form and it is very lengthy. Not easy to enter the code • Able to use/define functions.
	(b)	Any two: <ul style="list-style-type: none"> • Program runs at a faster speed as translation are done beforehand. • There is no need for re-compilation to run the program once the translation process is being done. • Syntax errors are detected after the program is run
	(c)	Syntax error // incorrect arrangement in words or symbols used in programming languages OR rules in programming language not being followed. Logic error // error that does not give the output of the intended purpose
4	(a)	Any two: <ul style="list-style-type: none"> • HDD is cheaper for larger amounts of storage space • Expensive to change the technology // HDD are trusted technology • No requirement for the increased speed of SSD
	(b)	Cookies
	(c)	Any three: <ul style="list-style-type: none"> • Virus // Malware • Unauthorised access // Hacking • Interception of other user's online transactions
	(d)	Any one: <ul style="list-style-type: none"> • Check for padlock icon in the internet browser • Use of https:// protocol • Check for the correct website address to prevent phishing • Read privacy policy

Question			Answer
5	(a)		<p>Positive social impact:</p> <ul style="list-style-type: none"> • Patients at remote places / with limited mobility [1] can get access to healthcare [1] <p>Negative social impact:</p> <ul style="list-style-type: none"> • Doctors may not have give an accurate diagnosis [1] which patients may not get the right treatment [1]
	(b)		<p>Is it acceptable for robots to replace humans in providing the medical procedures</p> <p>Whose responsibility for failed medical procedures/ misdiagnosis?</p>
6	(a)		<p>Any two:</p> <ul style="list-style-type: none"> • Cost for cables for a short distance is cheaper [1] than the device for wireless transmission [1] • Speed for wired transmission is faster//more reliable //higher bandwidth [1] possible interference that affects the speed for wireless [1] • Higher security for wired transmission [1] as there are possible interception of wireless signals. [1]
	(b)	(i)	Network Interface Card
		(ii)	<p>Any three:</p> <ul style="list-style-type: none"> • 48 bits or 6 bytes • First 24 bits: manufacturer serial number • Next 24 bits: device serial number • Ranges from 00:00:00:00:00:00 to FF:FF:FF:FF:FF:FF
	(c)	(i)	Transmits received packets [1] to all connected device [1]
		(ii)	Star Topology

Question			Answer												
			<div></div> <p>Deduct 1 mark for any mistake</p>												
	(d)	(i)	<table><tr><th>8-bit binary value</th><th>Even (✓)</th><th>Odd (✓)</th></tr><tr><td>11001011</td><td></td><td>✓</td></tr><tr><td>10001000</td><td>✓</td><td></td></tr><tr><td>10010101</td><td>✓</td><td></td></tr></table>	8-bit binary value	Even (✓)	Odd (✓)	11001011		✓	10001000	✓		10010101	✓	
8-bit binary value	Even (✓)	Odd (✓)													
11001011		✓													
10001000	✓														
10010101	✓														
		(ii)	<p>Any one:</p> <ul style="list-style-type: none">• Transposition error• When bits still add up to odd/even number• Even number of incorrect bits												
		(iii)	<p>Any three:</p> <ul style="list-style-type: none">• A value is calculated from the data• The value is calculated using an algorithm• The value is appended to the data to be transmitted• Value is recalculated after transmission• If the values match the data is correct // if the values do not match the data is incorrect												
7	(a)		<p>Any two:</p> <p>Data Collection</p> <p>Data Processing</p> <p>Data Analysis</p> <p>Data Distribution</p>												
	(b)		\$A6												

Question			Answer				
			B\$5 B\$2				
8	(a)			A	B	C	X
				0	0	0	0
				0	0	1	1
				0	1	0	0
				0	1	1	0
				1	0	0	0
				1	0	1	1
				1	1	0	0
				1	1	1	0
	(b)		X = ((NOT A) AND (NOT B) AND C) OR (A AND (NOT B) AND C)				
9	(a)		Any three: <ul style="list-style-type: none"> • Retrieval of past records • Input Essential Information • Measurement of data from medical devices • Matching all data with trigger values 				
	(b)	(i)	Boolean String				
		(ii)	Line 1, 3, 7 and 10 (5) Line 2, 12 Line 6, 9 (8, 11)				
		(iii)	Length Check Format Check				
10			<ul style="list-style-type: none"> • Loop • Input of 20 integers • Selection of even number • Finding Product with selection construct • Output 				
11			<pre> total = 0 INPUT numItems REPEAT subtotal = 0 FOR num = 1 to numItems INPUT qty,price subtotal = subtotal + qty*price NEXT num total = total + subtotal OUTPUT subtotal INPUT numItems UNTIL numItems = "X" OUTPUT total </pre>				