

**SECOND INTERNAL ASSESSMENT**

Sem: VIII

Date: 12/04/2018

Sub: Multimedia Communication

Time: 3:00pm-4:00pm

Sub. Code: 10EC841

Max. Marks:25

*Note: Answer two full questions, draw sketches wherever necessary.*

Q. No	Description of Question	Marks	CO	RBT Level
1	a Explain the principle of operation of a PCM speech CODEC with block diagram.	7	C412A.2	L1,L2
	<b>OR</b>			
	b Describe 4:2:2 and 4:2:0 digitization formats.	7	C412A.2	L1,L2
	c With a neat block diagram explain audio/sound synthesizer.	6	C412A.3	L1,L2
	<b>OR</b>			
d Code the string "ABACADABACADABACABAB" Using Huffman coding. Derive the Huffman Code tree and find the efficiency.	6	C412A.3	L1,L2	
2	a Explain raster scan operation associated with TV/Computer monitor.	6	C412A.3	L1,L2
	<b>OR</b>			
	b Encode the string "went." Comprising characters with probabilities of e=0.3, n=0.3, t=0.2, w=0.1, . =0.1 using arithmetic coding.	6	C412A.3	L1,L2
	c Define three types of text. Explain hyper text that enable integrated set of documents.	6	C412A.2	L1,L2
	<b>OR</b>			
d Derive the time to transmit the following digitized images at both 64kbps and 1.5Mbps. i) A 640 X 480 X 8 VGA compatible image. ii) A 1024 X 768 X 24 SVGA compatible image.	6	C412A.2	L1,L2	

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SCHEME OF EVALUATION IA- I

Sem : VIII		Subject : MMC		Sub Code : 10EC 8U1		Date : 12/04/2018		
Q. No.	Bit	Description				Marks	CO's	RBT LEVEL
1)	5)	<p><u>4:2:2 format :-</u></p> <p>Fig: Sample position with 4:2:2 format</p> <ul style="list-style-type: none"> <li>Three component video signals from a source have BW's up to 6MHz for the luminance signals &amp; less than half of this for two chrominance signals.</li> <li>For standard line sampling rate of 13.5MHz for luminance &amp; 6.75MHz for the two chrominance signals was selected.</li> <li>For 525 line system &amp; 625 line system 13.5MHz will be chosen.</li> <li>For 525 line total 63.56μsec.</li> <li>For 625 line total 6μsec</li> </ul> <p><u>4:2:0 format.</u></p> <p>525 line system Y = 720 x 480 Cb = Cr = 360 x 240</p> <p>625 line system Y = 720 x 576 Cb = Cr = 360 x 288</p> <p>Total bit rate 13.5M x 8 + 2(3.375M x 8) = 162Mbps</p>				1M		
					3M	C412A2	L1 L2	
					3M			

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**SCHEME OF EVALUATION IA- II**

Sem : VIII		Subject : MMC	Sub Code : 10EC84	Date : 12/01/2018		
Q. No.	Bit	Description	Marks	CO's	RBT LEVEL	
1)	c)	<p><u>Audio sound synthesizer schematic</u></p>	3M	CH2A3	L1L2	
		<ul style="list-style-type: none"> <li>✓ The amount of memory required to store digital audio is large.</li> <li>* Three main components. Keyboard, Computer, set of sound generators.</li> <li>+ Secondary storage interface allows sequence of messages including those associated with control panel.</li> <li>* To discriminate b/w inputs from the different possible sources, a standardized set of messages have been defined for both input &amp; O/P to the corresponding set of sound generators. These are defined in a standard known as Music Instrument Digital Interface (MIDI).</li> </ul>	3M			

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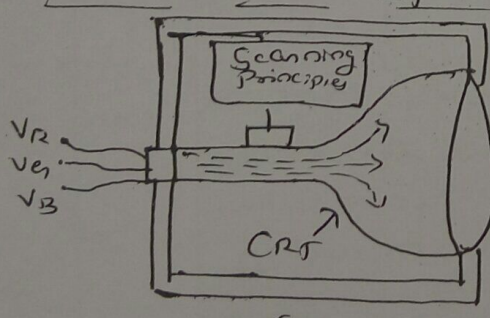
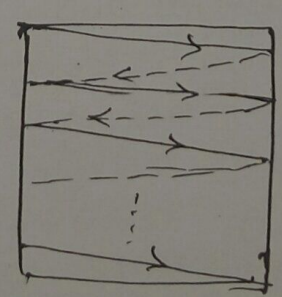
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**SCHEME OF EVALUATION IA-**

Sem : VIII		Subject : MMC		Sub Code : 18EC 801	Date : 12/4/2018														
Q. No.	Bit	Description			Marks	CO's	RBT LEVEL												
1)	d)	<p> <math>A \rightarrow 10/20 \xrightarrow{0} 0.5 \xrightarrow{0} 0.5 \xrightarrow{0} 0.50</math>  <math>B \rightarrow 5/20 \xrightarrow{10} 0.25 \xrightarrow{10} 0.25 \xrightarrow{10} 0.251</math>  <math>C \rightarrow 3/20 \xrightarrow{110} 0.15 \xrightarrow{110} 0.15 \xrightarrow{11} 0.1511</math>  <math>D \rightarrow 2/20 \xrightarrow{111} 0.1 \xrightarrow{111} 0.1 \xrightarrow{111} 0.1111</math> </p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Line code</td> <td>is</td> <td>0</td> <td>10</td> <td>110</td> <td>111</td> </tr> <tr> <td></td> <td>N</td> <td>1</td> <td>2</td> <td>2</td> <td>3</td> </tr> </table> <p> <math>L = \sum_{i=1}^4 N_i P_i = 1.75 \text{ bits/symbol} \rightarrow 1</math>  <math>HCS = - \sum_{i=1}^4 P_i \log_2 P_i = 1.742 \text{ bits/symbol} \rightarrow 2</math>  <math>\text{Efficiency} = \frac{HCS}{L} = 99.5\% \Rightarrow 1</math> </p>			Line code	is	0	10	110	111		N	1	2	2	3	2	CU12A, B, CU12A, B	L1, L2
Line code	is	0	10	110	111														
	N	1	2	2	3														
2)	a)	<p><u>Raster scan operation associated with TV/Computer monitor.</u></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>(a)</p> </div> <div style="text-align: center;">  <p>N = 525 or 625 (b)</p> </div> </div> <p style="text-align: center;"> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">R</span>   <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">G'</span>   <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">B'</span>  <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">G</span>   <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">B</span>   <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">R'</span> </p> <p>(a) Schematic (b) Raster scan principle (c) Pixel format on each scan line</p>			3M														

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**SCHEME OF EVALUATION IA-**

Sem : VIII		Subject : MMC	Sub Code : 10EC801	Date : 12/04/2018		
Q. No.	Bit	Description	Marks	CO's	RBT LEVEL	
2)	a)	<p><u>Continuation:-</u></p> <ul style="list-style-type: none"> <li>* The picture tubes used in most television sets operate using raster scan.</li> <li>* It comprises discrete horizontal lines the first of which starts at the top left corner of the screen. The last which ends in bottom right corner.</li> <li>* This is known as Progressive Scanning.</li> </ul>	3M	C41203	L1, L2	
2)	b)	<p>Range is  <math>0.81812 \leq \text{code word} \leq 0.8162</math></p>	6M	C41203	L1, L2	

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**SCHEME OF EVALUATION IA-**

Sem : VIII		Subject : MMC		Sub Code : 18EC801	Date : 12/04/2018		
Q.No.	Bit	Description			Marks	CO's	RBT LEVEL
2)	c)	<p>Three types of text.</p> <p>i) unformatted    ii) formatted</p> <p>iii) Hypertext. → 1M</p> <p><u>Hypertext</u>:-</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>Back Find Home Stop</p> <p>X UNIVERSITY OF WONDERSLAND</p> <ul style="list-style-type: none"> <li>• The University</li> <li>• Departments</li> <li>• Research</li> <li>• Admissions</li> </ul> </div> <p>→ 1M</p> <p>• It is a type of formatted text that enables related set of documents i.e. pages, hyperlinks.</p> <p>• It can be used to create an electronic version of such documents with index, departments etc. → 4M</p> <p>• Associated with unique Resource Locator</p>					
2)	d)	<p> <math>V_{ENA} = 640 \times 480 \times 8 = 2.457 \times 10^6 \text{ bits}</math>  <math>S_{ENA} = 1024 \times 768 \times 24 = 18.87 \times 10^6 \text{ bits}</math>                      At 64 kbps  <math>V_{ENA} = \frac{2.457 \times 10^6}{64 \times 10^3} = 38.38 \text{ sec}</math> → 3M  <math>S_{ENA} = 294.90 \text{ sec}</math>                      At 1.5 Mbps  <math>V_{ENA} = \frac{2.457 \times 10^6}{1.5 \times 10^6} = 1.63 \text{ sec}</math>  <math>S_{ENA} = 12.58 \text{ sec}</math> → 3M                 </p>					

CU12A2 L1, L2

CU12A2 L1, L2

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