B.E. Seventh Semester (Electronics & Telecommunication /
Electronics & Communication Engineering) (C.B.S.)
Elective - I : Data Compression & Encryption

P. Pages : 2

Time : Three Hours

0103

Max. Marks : 80

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Notes :   1.   All questions carry marks as indicated.
2.   Solve Question 1 OR Questions No. 2.
3.   Solve Question 3 OR Questions No. 4.
4.   Solve Question 5 OR Questions No. 6.
5.   Solve Question 7 OR Questions No. 8.
6.   Solve Question 9 OR Questions No. 10.
7.   Solve Question 11 OR Questions No. 12.
8.   Due credit will be given to neatness and adequate dimensions.
9.   Assume suitable data whenever necessary.
10. Diagrams and chemical equations should be given whenever necessary.
11. Illustrate your answers whenever necessary with the help of neat sketches.
12. Use of non programmable calculator is permitted.

1. a)   Write down the steps involved in Huffman coding and also write its merits and demerits.   **6**

   b)   Calculate average size of the code and entropy for the following using Shannon fano,   **7**
        0.25, 0.20, 0.15, 0.15, 0.10, 0.10, 0.05.

OR

2. a)   Solve the following string "went" with mobabilities e = 0.3, n = 0.3, t = 0.2, w = 0.1,   **7**
        . = 0.1 by using artihmatic coding.

   b)   Decode the sequence   **6**
        <67> <70> <256> <258> <259> <257>
        by LZW decoding algorithm.

3. a)   What is compounding ? Write its types explain any one in brief by suitable example.   **8**

   b)   Write a short note on digital audio.   **5**

OR

4. a)   Explain MPEG encoder and decoder in detail.   **7**

   b)   Explain the format of compressed data in audio compression.   **6**

5. a)   Explain encoder & decoder of JPEG.   **8**

   b)   Explain various types of Images. List different types of compression techniques including   **6**
        lossless and lossy.

OR

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6.	a)	Write a short note on video compression.	**7**
	b)	Explain different MPEG industry standards.	**7**
7.	a)	Explain different types of attack on network security.	**7**
	b)	State and explain S-box design rules.	**6**

OR

8.	a)	What are different types of Ciphers ? Explain two with example.	**7**
	b)	Explain the process of DES.	**6**
9.	a)	Explain RSA algorithm in detail with example.	**7**
	b)	Explain the principle of public key cryptography and compare with conventional encryption.	**6**

OR

10.	a)	Write a short note on Hash function.	**6**
	b)	Give the general idea behind digital signature standard scheme.	**7**
11.		Write a short note on the following :	**14**
		i) Intruder	
		ii) Viruses	
		iii) Worms	
		iv) Firewall design	

OR

12.	a)	Explain different antivirus techniques.
	b)	Write short notes on secure electronic payment system.

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