

Lib.

BE(EXTC) VII
Data Compression & Encryption

04/06/09

11-2 p.m.

VR-4809

(3 Hours)

[Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.(2) Attempt any **four** out of remaining **six** questions.

1. (a) Distinguish between Scalar and Vector quantization. 5
 (b) What is 'motion compensation' in video compression? 5
 (c) Compare symmetric and public key cryptography. 5
 (d) Classify security attacks and discuss them. 5
2. (a) Draw the Adaptive Huffman tree for the string 'xyxwz'... Give the encoding and decoding process for the same. 10
 (b) Explain the working of DES. 10
3. (a) Encode the string 'mnop mnop ponm' using LZ78. What are the limitations of this method? How does LZW overcome these limitations? 10
 (b) What is the significance of prime numbers in cryptography? Explain RSA algorithm with a suitable example. 10
4. (a) Describe various approaches for image compression and discuss one of them in detail. 10
 (b) Explain the Diffie-Hellman Key exchange process. 10
5. (a) Explain the significance of modelling and coding with respect to data compression. Discuss the various popular models used. 10
 (b) Discuss security of HASH and MAC functions. 10
6. (a) What are the various applications for the Run Length Encoding (RLE) compression scheme? 10
 (b) What are the main features of Digital Signature? Discuss one of its algorithms. 10
7. Write notes on (any two) :- 20
 - (a) MPEG Audio
 - (b) Discrete Logarithm
 - (c) Stream Ciphers
 - (d) Arithmetic Coding.