

Con/5648-07.

(REVISED COURSE)

CD-7224

(3 Hours)

[Total Marks : 100]

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

1. (a) Compare lossy compression and lossless compression giving examples. 5
 (b) Compare μ -Law and A-Law Companding. 5
 (c) Explain different types of Cryptographic Techniques. 5
 (d) Discuss the difference between Hash and MAC codes used for authentication. 5
2. (a) Explain the Adaptive Huffman coding process for the string mnompn... 10
 Also give the encoding and decoding process for the same.
 (b) For a given probability model decode a sequence of length 10 with a tag 10
 of 0.63215699. $P(a_1) = 0.2$, $P(a_2) = 0.3$ and $P(a_3) = 0.5$.
 Use arithmetic coding.
3. (a) Given an initial dictionary consisting of letters **a, b, c, r, y**. Encode using 10
 LZW algorithm **acbarcarraycbycarray**.
 (b) Describe various approaches for image compression and discuss one of 10
 them in detail.
4. (a) Distinguish between scalar and vector quantization. Explain K-Means 10
 algorithm.
 (b) Give a suitable scheme for speech compression. Discuss the MPEG audio 10
 and decoder systems.
5. (a) Explain the working of DES with block diagrams. 10
 (b) Classify security attacks and security services. Also relate them. 10
6. (a) What are the different ways in which secret keys can be exchanged between 10
 2 entities.
 (b) Explain the RSA algorithm with the help of an example. 10
7. Write notes on any two : 20
 (a) Digital Signatures
 (b) Motion Compensation in Videocompression
 (c) JPEG
 (d) Chinese Remainder Theorem.