

Max.Marks:80

Duration :3hrs

- 3. (1) Question No. 1 is compulsory.
- (2) Attempt any three questions out of remaining five.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if required and mention the same in answer sheet.

Solve any four

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- (a) Explain test for unique decodability with suitable example
- (b) What are the main features of MPEG-1?
- (c) Explain Chinese Remainder theorem (CRT) with example.
- (d) What are the limitations of JPEG? How to overcome these limitations?
- (e) What are the various models used for data compression?

- (a) A Source  $K = [a, b, c, d]$  has probabilities  $[0.7, 0.05, 0.15, 0.1]$  respectively. Generate tag for the sequence  $[a c d b a]$  using Arithmetic coding. 10
- (b) What is the significance of prime numbers in public key cryptography? Explain RSA algorithm with suitable example. 10

- (a) What do you mean by secure hash algorithm (SHA) explain in detail. What are the characteristics of secure hash algorithm? 10
- (b) Explain modification detection code (MDC) and message authentication code (MAC) w.r.t. message authentication. 10

- (a) Take an alphabet string and show encoding procedure for LZ78 and LZW. Compare LZ78 and LZW 10
- (b) Explain update procedure and encoding for the adaptive Huffman coding algorithm with suitable diagram / examples. 10

- (a) Explain Triple DES with Two Keys in detail. 10
- (b) Explain Caesar Cipher and multiplicative cipher with suitable examples and diagrams. 10

Write short note on (any four)

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- (a) SSL Architecture
- (b) Intrusion detection system
- (c) PGP
- (d) JPEG LS
- (e) H.261

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