

[Time: 3 Hrs]

[Marks: 80]

Please check whether you have got the right question paper.

- N.B:
1. Question No 1 is compulsory.
 2. Attempt any three questions from remaining five questions.
 3. Assume suitable data where necessary.

- Q. 1** Answer **any four:** (20)
- a) What are different types of redundancies to be considered for text & image & video compression?
 - b) Solve using fermat's theorem $6^{10} \bmod 11$
 - c) What is Denial of service (DOS) attack? Explain with suitable examples.
 - d) Consider a direct memoryless source with $p(x_1) = 0.2$, $p(x_2) = 0.4$, $p(x_3) = 0.1$, $p(x_4) = 0.2$, $p(x_5) = 0.1$. Find the code using minimum variance Huffman code.
 - e) Compare A law & μ Law companding.
- Q. 2**
- a) Explain JPEG compression technique. (10)
 - b) Explain update procedure for Adaptive Huffman code. (10)
- Q. 3**
- a) Apply Diffie-Hellman key exchange algorithm for $g=7$, $n=17$ select $x=6$ & $y=4$ find key k_1 & k_2 for diffie-Hellman Algorithm. (10)
 - b) Encode and decode using LZW algorithm- 'RINKYPINKY'. (10)
- Q. 4**
- a) Explain Arithmetic modes of Block Transfer. (10)
 - b) Explain Frequency & Temporal masking. (10)
- Q. 5**
- a) Explain H-264 encoder & decoder. (10)
 - b) What are different types of fire wall explain them. (10)
- Q. 6** Write short note on **any two:** (10)
- 1) Biometric Authentication
 - 2) Hash & MAC functions
 - 3) Security Principles
