[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 Diffile-Hellman key exchange algorithm for g=7, n=17 select x=6 & y=4 find key k1 & k2 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

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