Q. P. Code: 39075

Max. Marks: 80 **Duration: 3 Hours**

Instructions:

(1) Question no 1 is Compulsory
(2) Write any Three from Remaining
(3) Assume suitable data if necessary

Q 1 (a)	Explain Lossy and Lossless compression techniques with example	04
Q 1 (b)	State Source coding theorem and write equation.	04
Q 1 (c)	Define following terms 1.Code Efficiency 2.Hamming Distance 3.Minium Distance (d_{min}) 4.Hamming Weight	04
Q 1 (d)	What is coding efficiency and coding redundancy	04
Q 1 (e)	State and explain Fermat's Little theorem with suitable example.	04
Q2 (a)	Describe broad level DES and Triple- DES in detail	10
Q2 (b)	Explain JPEG Encoder and Decoder in detail. Compare JPEG with GIF	10
Q3 (a)	Define information and Information rate. Find Information rate of the source given below An analog signal is band limited to B Hz sampled at the nyquist rate and samples are quantized into 4 levels, these quantization levels assumed independent and occur with probability $P_1=P_4=1/8$, $P_2=P_3=3/8$.	10
Q3 (b)	Explain Symmetric and Asymmetric Algorithms in detail Differentiate between block cipher and stream cipher	10
Q4(a)	Explain in detail Convolution code by taking example. Draw code tree, code trellis, state diagram	10
Q4 (b)	Explain Chinese Remainder Theorem and Digital Signature	10
Q5 (a)	Encode the string using LZW Technique abracadaba	10
Q5 (b)	Explain Diffie –Hellman key agreement protocol. It is vulnerable to which attack?	10
	Write short notes	
Q6 (a)	Security Attacks	05
Q6 (b)	cyclic codes and BCH codes	05
Q6 (c)	Explain RLE in detail	05
Q6 (d)	Speech Compression	05

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