

(TIME: 03 HOURS)

(MAX. MARKS : 80)

Note:

1. Question No. 1 is compulsory.
2. Attempt **any three** questions out of remaining **five** questions.
3. Assume suitable data wherever necessary.
4. Figures to right indicate full marks.

Q.1	Answer the following (Any four)	Marks
a.	Compare LZ77 with LZ78. What is the best case scenario in LZ77?	05
b.	What are the features of Advanced Audio Coding Standard?	05
c.	State Fermat's little theorem. Find $29^{25} \bmod 11$ using Fermat's Little theorem.	05
d.	Differentiate Public key encryption from symmetric key encryption	05
e.	What do you mean by ethical hacking?	05
Q.2	a. With neat diagram, explain JPEG. What is the use of DCT in JPEG? b. Encode the sequence " ababbabcababba" using LZW dictionary approach. What are the advantages of LZW approach?	10 10
Q.3	a. With neat diagram, explain the working of MPEG 4 encoder and decoder. b. What do you mean by substitution cipher? Encrypt the sentence ' she went to the store ' with keyword ' problems ' using playfair cipher.	10 10
Q.4	a. With necessary equations and diagram, explain single round DES. b. With suitable example, explain Diffie -Hellman Key exchange process	10 10
Q.5	a. Verify RSA encryption and decryption process for $p=5$, $q=11$, $e=3$ and Message =9. b. Explain Digital Signature Standards.	10 10
Q.6	Write short notes on any two a. Digital Immune system b. HMAC c. A-law and μ -law companding	10 10 10
