

2024

COMPUTER SCIENCE — GENERAL

Paper : SEC-B-1 and SEC-B-2

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

SEC-B-1

(Multimedia and Its Applications)

Full Marks : 80

Answer *question nos. 1 & 2* and *any four* questions from the rest.

1. Answer *any ten* questions :

2×10

- (a) What do you mean by multimedia?
- (b) What is JPEG?
- (c) What is kerning?
- (d) What do you mean by ASCII?
- (e) What is HTML?
- (f) What is aspect ratio?
- (g) List at least two attributes of a font.
- (h) What is MP3?
- (i) What is morphing?
- (j) What is virtual reality?
- (k) What is codec?
- (l) Name two multimedia components.
- (m) What is clipping?
- (n) What is CCD?

2. Write short notes on (*any four*) :

5×4

- (a) Audio Compression
- (b) Hypermedia
- (c) MPEG
- (d) NTSC
- (e) QoS parameter
- (f) Different multimedia software tools.

Please Turn Over

3. (a) What are the uses of multimedia in health care and entertainment?  
(b) What is multimedia server? 5+5
4. What are additive color, color palettes, dithering and subtractive color? 2½×4
5. (a) What is MIDI?  
(b) Discuss the features of Multimedia Image Processing.  
(c) What do you mean by Gray scale image? 2+2+6
6. (a) What are the key differences between analog and digital video?  
(b) Why is video compression essential? 5+5
7. (a) Compare between Bitmaps and Vector Drawn Objects.  
(b) Briefly describe the basic sound editing operation in multimedia.  
(c) What is color depth? 4+4+2
8. (a) Describe in detail about the memory storage of a computer system.  
(b) Briefly describe the steps involved in developing a Multimedia Application. 5+5

## SEC-B-2

## (Information Security)

Full Marks : 80

## Group - A

1. Answer *any ten* questions :

2×10

- (a) How is Encryption different from Hashing?
- (b) How does 'denial of service' prevent the management of communication facilities?
- (c) Explain in brief about Caesar's Cipher with suitable example.
- (d) Define Rail fence technique with a suitable example.
- (e) Distinguish between stream and block cipher.
- (f) Highlight the main differences between active and passive attack.
- (g) What is firewall?
- (h) What is Encapsulating Security Payload?
- (i) What is Ring?
- (j) Find  $2^{15} \text{ mod } 5$  using Fermat's theorem.
- (k) Write the main differences between worms and viruses.
- (l) What is Trojan horse?
- (m) What do you understand by Brute-force-attack?

## Group - B

2. Answer *any four* questions :

5×4

- (a) Explain Euler's theorem with suitable example.
- (b) What is IP Sniffing and Spoofing?
- (c) Write short note on Steganography.
- (d) Discuss briefly about SSL attacks.
- (e) Briefly describe how the security is provided in email.
- (f) What are the goals of security?

Please Turn Over

Group - C

Answer *any four* questions.

3. (a) Write RSA algorithm with a suitable example. 6+4  
(b) What is Message digest? Why is it used?
4. (a) Explain the Diffie-Hellman key exchange algorithm with an example. 6+4  
(b) What is the purpose of x-boxes in DES? 5×2
5. Write short notes on (*any two*):
- (a) S/MIME
  - (b) CIA triad
  - (c) Differential cryptanalysis
  - (d) Public-Key Cryptosystem.
6. (a) What do you mean by Galois field? 8+2  
(b) What is digital certificate?
7. (a) Explain Chinese-Remainder theorem. 6+4  
(b) What are the limitations of firewall?
8. (a) What is masquerade? Which principle of security is breached because of that?  
(b) Differentiate between SSL and SET.  
(c) What are the two modes of IP Sec? Draw proper diagram to explain each mode. 2+4+4
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