



**Module-3**

- 5 a. A message comprising of a string of characters with probabilities  $e = 0.3$ ,  $n = 0.3$ ,  $t = 0.2$ ,  $w = 0.1$ ,  $\cdot = 0.1$  is to be encoded. The message is "went." Compute the arithmetic code word. (08 Marks)
- b. With the aid of diagrams, explain JPEG encoder. (08 Marks)
- c. Explain CPU management in multimedia operating system. (04 Marks)

**OR**

- 6 a. A message and its probability of occurrence of each character is as follows:  
A and B = 0.25, C and D = 0.14, E, F, G and H = 0.055.
- (i) Use Shannon's formula to derive the minimum average number of bits per character. (08 Marks)
- (ii) Construct the Huffman code tree and derive a suitable set of code word. (08 Marks)
- b. Explain the principle of LZW compression. (06 Marks)
- c. Explain the main features of distributed multimedia system. (06 Marks)

**Module-4**

- 7 a. Explain Linear Predictive coding encoder and decoder with neat schematic. (08 Marks)
- b. A digitized video is to be compressed using the MPEG-1 Standard. Assuming a frame sequence of I BBP BBP BBP BBI... and average compression ratios of 10:1 (I), 20:1 (P) and 50:1 (B), derive the average bit rate that is generated by the encoder for both NJSC and PAL formats. (08 Marks)
- c. Explain different frame types. (04 Marks)

**OR**

- 8 a. Explain DPCM encoder and decoder with a neat diagram. (10 Marks)
- b. What do you understand by the terms:
- (i) Group of pictures      (ii) Prediction span      (iii) Motion compensation
- (iv) Motion estimation      (v) Temporal masking      (10 Marks)

**Module-5**

- 9 a. Explain scalable rate control with a neat block diagram. (10 Marks)
- b. Explain video streaming architecture with a neat diagram. (10 Marks)

**OR**

- 10 a. Discuss briefly about Integrated Packet Networks. (10 Marks)
- b. Explain briefly about errors and losses in ATM. (10 Marks)

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