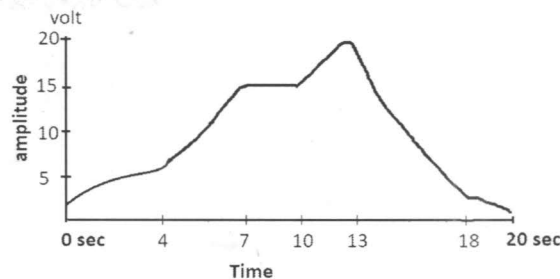Maximum Marks - 80

Duration – 3 hours

Note:

1. Question No 1 is compulsory.
2. Attempt any 3 questions from the remaining 5 questions.
3. Draw neat diagrams wherever necessary.

Q.No. 1   Explain in Brief: 20

    a.   Characteristics of sound waves and their digital representation
    b.   Different redundancies in images
    c.   Working of Digital Camera
    d.   Need for Quality of Service and the parameters associated.

Q.No. 2(a)   What are the redundancies considered in the video compression? Explain the different motion estimation techniques.   10

Q.No. 2(b)   What is steganography? What are the different methods? Discuss LSB steganographic method and its merits and demerits.   10

Q.No. 3(a)   What are the different features that make a text into a rich text? Explain how these formatted texts are encoded in RTF.   10

Q.No. 3(b)   For the following 20 sec waveform   10

    a.   Perform the sampling at every 1sec using 8 levels of quantization.
    b.   Encode using PCM.
    c.   Reconstruct the wave after decoding.

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Q.No. 4(a) Give the architecture of multimedia streaming system on the internet and explain the role of each protocol. 10

Q.No. 4(b) What kind of redundancy is removed by Huffman coding? For the following image histogram of an image of size 50x50 (2500 pixels) and 8 gray levels, perform Huffman coding to find the code for each gray level. Also find the reduction achieved. 10

Gray level	0	1	2	3	4	5	6	7
Count of pixels	89	600	35	73	267	565	770	101

Q.No. 5(a) What is an authoring system? Why it is needed? Explain the different design issued faced. 10

Q.No. 5(b) Describe the steps followed in JPEG image compression. 10

Q.No. 6 Write short notes on **any two** 20

    a. MPEG compression
    b. Digital Signatures
    c. DVD

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