Question Paper Code : X 60418

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020

Seventh Semester

Electronics and Communication Engineering

EC 2037/EC 706/10144 ECE 35 – MULTIMEDIA COMPRESSION AND COMMUNICATION

(Regulations 2008/2010)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions

PART – A   (10×2=20 Marks)

1. What are the responsibilities of interface and information designers in the development of a multimedia project ?

2. Write any two advantages of MIDI over digital audio.

3. Describe briefly about delta modulation.

4. What are the profiles in MPEG-2 Video standards ?

5. Create a dynamic Huffman tree for the text "This is Anna University".

6. Derive the binary form of the following run length encoded AC coefficients :

   (0, 6) (0, 7) (3, 3) (0, –1) (0, 0).

7. What is a VoIP ?

8. Why are H.323 protocols designed ?

9. What are the limitations of best effort service ?

10. What is meant by steaming ?

PART – B   **(5×16=80 Marks)**

11. a) i) You are assigned to create an interface that looks good across platforms. What is the difference between images as shown on different machines like Mac, PCs, etc. How would you deal with those problems ? **(8)**

     ii) Describe the various output devices available for personal computers and explain how they may be used in multimedia production and delivery ? **(8)**

(OR)

   b) i) Compare and contrast MIDI and digital audio. **(8)**

     ii) Discuss the skill set needed to develop a multimedia project. Also describe how this is different from the other skill sets ? **(8)**

12. a) i) Draw and explain the DPCM encoder and decoder and explain the basics of predictive DPCM. **(10)**

     ii) Give a detailed note on linear predictive coding. **(6)**

(OR)

   b) i) Describe the H.261 video encoder principle and its implementation. **(8)**

     ii) Discuss the MPEG-4 encoder and decoder with necessary diagrams. **(8)**

13. a) i) Design a Huffman code and find average length for a source that puts out Letters from an alphabet A = {a1, a2, a3, a4, a5} with P(a1) = P(a3) = P(a4) = 0.1, P(a2) = 0.3 and P(a5) = 0.4. **(8)**

     ii) Describe dynamic Huffman code for the same output source with the above probabilities. **(8)**

(OR)

   b) i) Generate arithmetic code for the sequence 1233 with cdf $F_x(1) = 0.8$, $F_x(2) = 0.82$ and $F_x(3) = 1$. **(8)**

     ii) Explain in detail about LZW algorithm. **(8)**

14. a) i) Explain the H.323 architecture and protocol in detail and write its applications. **(10)**

     ii) Write a brief note on the challenges arid applications of VoIP. **(6)**

(OR)

   b) i) Describe the principle and architecture of SS7 and discuss the need for SS7 signaling in VoIP. **(8)**

     ii) Give a brief note on CODEC methods. **(8)**

15. a) Bring out the significance of multimedia networking and comment on the various classes of service offered by these networks. **(16)**

(OR)

   b) In detail, explain the role played by RSVP in multimedia networks with illustrations. **(16)**

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