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Question Paper Code: 59410

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Elective

Electronics and Communication Engineering

15UEC910 - MULTIMEDIA COMPRESSION AND COMMUNICATION

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. A video consists of a sequence of CO1- R
(a) Frames (b) Signals (c) Packets (d) Slots
2. Which of the following is an example of a lossy image format? CO2- R
(a) TIFF using LZW compression (b) JPEG of medium quality
(c) GIF without dithering (d) All of the above
3. Most common compression technique that is used to create CD-quality audio is based on perceptual encoding technique is called CO3- R
(a) Perceptual Encoding (b) MPEG
(c) JPEG (d) Predictive Encoding
4. H.323 uses G.71 or G.723.1 for CO4-R
(a) Compression (b) Communication (c) Controlling (d) Conferencing
5. Real time streaming is most useful for CO5- R
(a) long video clips (b) short video clips
(c) extremely short and low quality videos (d) None of the above

PART – B (5 x 3= 15Marks)

6. Write the skill set requirements of multimedia designer and multimedia programmer. CO1- U
7. Summarize the significance and applications of GIF and TIFF image file formats. CO2- U

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|-----|----------------------------------------------|--------|--|
| 8. | Differentiate MPEG-1 and MPEG-2 standards. | CO3- U | |
| 9. | Justify how QOS is measured in VOIP. | CO4 -U | |
| 10. | Outline the features of best effort service. | CO5- U | |

PART – C (5 x 16= 80Marks)

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|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|
| 11. | (a) Explain why most data networks operate in a packet mode. Hence explain why services involving audio and video are supported. | CO1- U | (16) |
| | Or | | |
| | (b) List out the various multimedia components and explain their features and applications. | CO1 -U | (16) |
| 12. | (a) The following character string is to be transmitted using Huffman coding A B A C A D A B A C A D A B A C A B A B. Compute and draw the Huffman code tree. | CO2- App | (16) |
| | Or | | |
| | (b) (i) Describe the step by step process of JPEG Encoding. | CO2- U | (10) |
| | (ii) Write the differences between lossless and lossy compression. | CO2- U | (6) |
| 13. | (a) Analyze the H.261 video encoder and infer the relation to the macroblock and frame formats. | CO3 -Ana | (16) |
| | Or | | |
| | (b) Describe the Differential Pulse Code modulation encoder and decoder with schematic diagram. | CO3- U | (16) |
| 14. | (a) Explain the H.323 network architecture along with protocol stack with neat diagram. | CO4- U | (16) |
| | Or | | |
| | (b) (i) Discuss the VoIP challenges. | CO4 -U | (8) |
| | (ii) How SIGTRAN is related with IP & SS7? Explain. | CO4 -U | (8) |
| 15. | (a) (i) Give a brief note on integrated and differential service. | CO5 -U | (8) |
| | (ii) Explain the principle and applications of RSVP. | CO5 -U | (8) |
| | Or | | |
| | (b) Give a detail notes on Multimedia protocols for real time interactive application with an example. | CO5 -U | (16) |