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Question Paper Code: 99910

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Elective

Electronics and Communication Engineering

19UEC910– Multimedia Compression & Communication

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The text color in a presentation should contrast with the _____ color. CO1-U
(a) CPU (b) frame (c) stack (d) background
2. Which image files are a lossy format? CO1-U
(a) GIF (b) MPEG (c) JPEG (d) PNG
3. Moving Picture Experts Group (MPEG-2), was designed for high-quality DVD with a data rate of _____. CO1-U
(a) 3 to 6 Mbps (b) 4 to 6 Mbps (c) 5 to 6 Mbps (d) 6 to 7 Mbps
4. Maximum round trip delay for telephony as per ITU Recommendation G.114 is CO1- U
(a) 100 ms (b) 200 ms (c) 300 ms (d) 400 ms
5. _____ provides information about the multimedia file to be streamed over HTTP. CO1- U
(a) Media file (b) Meta file (c) Mobile file (d) Message file

PART – B (5 x 3= 15 Marks)

6. Explain the main features of the MIDI standard and its associated messages. CO1- U
7. Define entropy. How entropy is related for the performance measure of statistical encoding? CO1- U
8. Distinguish between LPC and CELP. CO1- U

9. Apply the functions of RAS signaling in H.323 related to bandwidth. CO3- App
10. What are the factors that affect the quality of streaming multimedia contents? CO1- U

PART – C (5 x 16= 80 Marks)

11. (a) An analog signal has a dynamic range of 40dB. Determine the magnitude of the quantization noise relative to the minimum signal amplitude if the quantizer uses 6 bits and 10 bits CO2- App (16)
- Or
- (b) Assuming the bandwidth of a speech signal is from 50Hz through to 10kHz and that of a music signal is from 15Hz through to 20kHz, derive the bit rate that is generated by the digitization procedure in each case assuming the Nyquist sampling rate is used with 12 bits per sample for the speech signal and 16 bits per sample for the music signal. CO2- App (16)
12. (a) Consider a DMS with seven possible symbols x_i , $i=1,2,3$ and the corresponding probabilities are $P(x_1)=0.5$, $P(x_2)=0.3$ and $P(x_3)=0.2$. Apply Huffman coding procedure to find the codeword and compare the efficiency when second order extension is applied. CO2- App (16)
- Or
- (b) Analyze the importance of arithmetic encoding algorithms and encode the string with the probabilities of the character “went\$”. The probabilities are: e=0.3, n=0.3, t=0.2, w=0.1, \$=0.1 CO2- App (16)
13. (a) Explain in detail about different MPEG coding techniques for video compression CO1- U (16)
- Or
- (b) Write brief notes on adaptive predictive coding. CO1- U (16)
14. (a) Illustrate in detail about SS7 architecture with suitable explanation. CO4- Ana (16)
- Or
- (b) Discuss the need and features of Quality of Service. CO1- U (16)
15. (a) Apply the various scheduling and policing mechanisms in multimedia. CO5- App (16)
- Or
- (b) Analyze in detail about RSVP protocol. CO5- Ana (16)