SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF

ELECTRONICS AND COMMUNICATION ENGINEERING

QUESTION BANK

VIII SEMESTER

1906604 - MULTIMEDIA COMPRESSION AND COMMUNICATION

Regulation – 2019

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Prepared by

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UNIT I - MULTIMEDIA COMPONENTS

Introduction - Multimedia skills - Multimedia Components and their characteristics - Text, Sound, Images, Graphics, Animation, Video, Hardware.

PART - A

Q.No	Questions	BT Level	Competence
1.	What is meant by multimedia.	BTL 1	Remembering
2.	List the types of multimedia components.	BTL 1	Remembering
3.	Write the components of multimedia system.	BTL 1	Remembering
4.	Identify communication networks available for multimedia.	BTL 1	Remembering
5.	What are the applications of multimedia.	BTL 1	Remembering
6.	Define the term hypertext and hypermedia.	BTL 1	Remembering
7.	Distinguish between formatted text and unformatted text.	BTL 2	Understanding
8.	Summarize about three types of text that are used to produce pages of documents.	BTL 2	Understanding
9.	Interpret the pixel depth and aspect ratio.	BTL 2	Understanding
10.	Discuss raster scan principle.	BTL 2	Understanding
11.	Differentiate between Bitmap and Vector Images.	BTL 2	Understanding
12.	Examine the types of audio signal.	BTL 2	Understanding
13.	Illustrate digitized documents.	BTL 3	Applying
14.	Show how the quantization interval influences the accuracy of the sampling process of an analog signal.	BTL 3	Applying
15.	Demonstrate the meaning of composite video signal.	BTL 3	Applying
16.	Discriminate the additive color mixing and subtractive color mixing.	BTL 3	Applying
17.	Classify the video standards.	BTL 3	Applying
18.	Examine animation and list their types.	BTL 3	Applying
19.	Infer the three main properties of a color source.	BTL 4	Analyzing
20.	Classify the important digitization formats.	BTL 4	Analyzing
21.	Differentiate between a bitonal image and a continuous-tone image.	BTL 4	Analyzing
22.	Explain synthesized audio.	BTL 4	Analyzing
23.	Point out the advantages of MIDI over Digital Audio.	BTL 4	Analyzing
24.	Mention any four methods for word searching in hypermedia systems.	BTL 4	Analyzing

PART – B

1.	Explain the concept behind multimedia components and their characteristics. (13)	BTL 1	Remembering
2.	(i) List the basic types of communication network that are used to provide multimedia communication services. (6) (ii) Give a short note on Multimedia and its applications. (7)	BTL 1	Remembering

3.	(i) Identify the aim of all broadcast television networks. (3) (ii) Write some of the multimedia components. Explain some of the real time applications where these components can be used. (10)	BTL 1	Remembering
4.	Examine the interpersonal communications may involve speech, image, text, or video for multimedia applications. (13)	BTL 1	Remembering
5.	Explain the types of Animation used in Multimedia Projects. (13) Name the three main categories of multimedia applications. (3)	BTL 1	Remembering
6.	Discuss the interactive applications over the internet and entertainment applications of multimedia. (13)	BTL 2	Understanding
7.	Describe the digitization principles with neat diagram. (13)	BTL 2	Understanding
8.	(i) Express the meaning of unformatted text, and formatted text. (7) (ii) Interpret about the pages/documents, hypertext, and hypermedia. (6)	BTL 2	Understanding
9.	Discuss the various Audio and Video techniques used in multimedia. (13)	BTL 2	Understanding
10.	Show the digitization format for digitized documents through an example. (13)	BTL 3	Applying
11.	Discover the raster scan operation associated with TV/computer monitors (13)	BTL 3	Applying
12.	(i) Compare and contrast MIDI and digital audio. (3) (ii) Discuss the skill set needed to develop a multimedia project. Also describe how this is different from the other skill sets? (10)	BTL 3	Applying
13.	(i) Illustrate MIDI and write its attributes and applications in multimedia. (7) (ii) Compare the capabilities and limitations of bitmap and vector images. (6)	BTL 3	Applying
14.	Analyze with the aid of a diagram, how a color image is captured within a camera or scanner and explain the working principle of digital camera & scanner. (13)	BTL 4	Analyzing
15.	(i) Differentiate between 4:2:2 and 4:2:0 formats. (3) (ii) Classify the CD-quality audio and synthesized audio. (10)	BTL 4	Analyzing
16.	Explain the principle of operation of a PCM speech codec. Include in your diagram the operation of the compressor in the encoder and the expander in the decoder. (13)	BTL 4	Analyzing
17.	(i) Pointout the advantages of digital video over analog video. (7) (ii) Describe the capability and limitations of bitmap and vector images. (6)	BTL 4	Analyzing
PART-C			

1.	Write a short note on: (15) 1) Unformatted text. 2) Formatted text. 3) Hypertext. 4) Hypermedia.	BTL 1	Remembering
2.	Formulate the following digitization formats: 4:2:2, 4:2:0, SIF, CIF, QCIF, and S-QCIF. (15)	BTL 2	Understanding
3.	(i) With a neat diagram explain the working of Audio Synthesizer (8) (ii) Write a brief note on ASCII character set (7)	BTL 3	Applying
4.	Interpret the color gamut, additive color mixing, and subtractive color mixing. Give an application of both color mixing methods. (15)	BTL 4	Analyzing
5.	(i) Explain the technique of computer animation and compare it with the traditional cell animation. (8) (ii) Explain the modern storage and communication system facilities and their contribution to the development of multimedia systems. (7)	BTL 4	Analyzing

UNIT II - AUDIO AND VIDEO COMPRESSION

Audio compression–DPCM-Adaptive PCM –adaptive predictive coding-linear Predictive coding-code excited LPC-perpetual coding Video compression –principles-H.261-H.263-MPEG 1, 2, and 4.

PART - A

Q.No	Questions	BT	Competence
1.	What is the need for compression and principle of adaptive predictive coding?	BTL 1	Remembering
2.	Define pitch, period, and loudness.	BTL 1	Remembering
3.	List the audio compression techniques.	BTL 1	Remembering
4.	Write the principles of code excited LPC.	BTL 1	Remembering
5.	Identify the frame types in video compression.	BTL 1	Remembering
6.	Describe adaptive differential pulse code modulation encoder and decoder with a neat diagram.	BTL 1	Remembering
7.	Distinguish between LPC and CELPC.	BTL 2	Understanding
8.	Summarize the CELP based standards.	BTL 2	Understanding
9.	Interpret the frequency and temporal masking.	BTL 2	Understanding
10.	Discuss the need for compression and list the types.	BTL 2	Understanding
11.	How does DPCM differ from PCM?	BTL 2	Understanding
12.	Compare voiced sound and unvoiced sound.	BTL 2	Understanding
13.	Illustrate the I, P and B-frames and define & working of GOP with an example.	BTL 3	Applying
14.	If the sampling frequency is 1.5 times the true frequency then what is the alias frequency?	BTL 3	Applying
15.	Demonstrate the H.261 encoding formats.	BTL 3	Applying
16.	How the errors are reduced in GOPs?	BTL 3	Applying

17.	Discover motion vector and prediction error.	BTL 3	Applying
18.	Illustrate perpetual coding.	BTL 3	Applying
19.	Infer the ways of errors detected in H.263 video compression standard.	BTL 4	Analyzing
20.	Classify the MPEG standards.	BTL 4	Analyzing
21.	Differentiate MPEG-1 and MPEG-2 standards.	BTL 4	Analyzing
22.	Explain adaptive predictive coding.	BTL 4	Analyzing
23.	Pointout the major features of H.263 standard.	BTL 4	Analyzing
24.	Differentiate H.261 and H.263 video compression standard.	BTL 4	Analyzing
	PART - B		
1.	Describe with the aid of a schematic diagram, the operation of a basic DPCM signal encoder and decoder. Include in your explanation the source of errors that can arise. (13)	BTL 1	Remembering
2.	Define adaptive PCM and explain ADPCM subband encoder & decoder with neat schematic. (13)	BTL 1	Remembering
3.	(i) Examine the third order predictive DPCM signal encoder and decoder schematic. (10) (ii) Write short notes on adaptive predictive coding. (3)	BTL 1	Remembering
4.	(i) Identify the perception parameters and associated vocal tract excitation parameters that are used. (7) (ii) List the terms relating to speech coders and explain the meaning. (6)	BTL 1	Remembering
5.	Describe the H.261 video encoder principle and its implementation. (13)	BTL 1	Remembering
6.	Discuss the code excited linear predictive coding with appropriate diagrams. (13)	BTL 2	Understanding
7.	(i) Describe the LPC encoder and decoder with schematic diagram. (10) (ii) Summarize the principles on which perceptual coders are based and how they differ from an LPC and CELP coder. (3)	BTL 2	Understanding
8.	(i) Express the sensitivity of ear and frequency masking. (10) (ii) Interpret about the temporal masking with the support of a graph. (3)	BTL 2	Understanding
9.	Discuss the MPEG-4 encoder and decoder with necessary diagrams. (13)	BTL 2	Understanding
10.	Illustrate a brief outline about the MPEG perceptual encoder and decoder. (13)	BTL 3	Applying
11.	Illustrate the encoder and decoder schematic of linear predictive coding with its vocal tract excitation parameters. (13)	BTL 3	Applying
12.	(i) Develop how the content-based video coding principle is done in video's and MPEG-4 coding. (10) (ii) Invent the compression algorithm used with MPEG-1 differs from that used in the H.261 standard. (3)	BTL 3	Applying

13.	Relate the Code Excited Linear Predictive coding with respect to bit rate, total coder delay. Also discuss the applications of various CELP based standards. (13)	BTL 3	Applying
14.	(i) Compare the H.261 & H.263 video compression standards. (3) (ii) Analyze the H.261 video encoder and infer the relation to the macroblock and frame formats. (10)	BTL 4	Analyzing
15.	(i) Differentiate video encoding procedure used with motion vector and prediction vector. (3) (ii) Explain the compressed frames of I-frames, P-frames, B-frames and the reasons for their use. (10)	BTL 4	Analyzing
	Analyze the motion picture expert group standards and mention its applications. (13)	BTL 4	Analyzing
17.	(i) Evaluate the MPEG-1 frame sequence and video bit stream structure. (7) (ii) Assess about the compression technique which is used for regenerative sound and digital TV broadcast. (6)	BTL 4	Analyzing
	PART-C		
1.	Describe the underlying principles of audio compression using various formats of PCM and Predictive mechanism. (15)	BTL 1	Remembering
2.	Discuss H.263 error tracking scheme, independent segment decoding and reference picture selection with independent of segment decoding. (15)	BTL 2	Understanding
3.	Explain the principle, limitations and applications of linear predictive coding, code excited LPC and perceptual coding. (15)	BTL 3	Applying
4.	Differentiate LPC and CELP codec. Include the meaning of waveform template and template codebook. (15)	BTL 4	Analyzing
5.	With a neat diagram explain MPEG-4 and its synchronization and delivery of streaming data. (15)	BTL 4	Analyzing

UNIT III - TEXT AND IMAGE COMPRESSION

Compression principles-source encoders and destination encoders-lossless and lossy compression-entropy encoding –source encoding -text compression –static Huffman coding dynamic coding –arithmetic coding –Lempel Ziv Welsh Compression-image compression

PART – A

Q.No	Questions	BT	Competence
1.	Define the term Entropy encoding.	BTL 1	Remembering
2.	What is meant by temporal redundancy?	BTL 1	Remembering
3.	List out the methods in source encoding.	BTL 1	Remembering
4.	Define entropy. How entropy is related for the performance measure of statistical encoding?	BTL 1	Remembering
5.	What are the main objectives of lossless and lossy compression techniques?	BTL 1	Remembering
6.	Give the principle of differential encoding.	BTL 1	Remembering
7.	Summarize the significance and applications of GIF and TIFF image file formats.	BTL 2	Understanding

8.	Outline the basic principle of Statistical encoding.	BTL 2	Understanding
9.	State the principle of Progressive transmission.	BTL 2	Understanding
10.	When prefix code is called as optimum prefix codes?	BTL 2	Understanding
11.	Differentiate static and dynamic coding with respect to text compression.	BTL 2	Understanding
12.	Compare lossless and lossy compression.	BTL 2	Understanding
13.	Identify the applications of LZW.	BTL 3	Applying
14.	Develop the expression for coding efficiency to entropy.	BTL 3	Applying
15.	If there is a ZIP code file format means which kind of compression technique is used to unzip the data.	BTL 3	Applying
16.	Classify the types of JPEG modes.	BTL 3	Applying
17.	How arithmetic coding is advantages over Huffman coding for text compression?	BTL 3	Applying
18.	Differentiate Huffman and Lempel-Ziv Coding.	BTL 3	Applying
19.	In what way the adaptive Huffman code differs from Huffman code?	BTL 4	Analyzing
20.	Distinguish between static and dynamic Huffman coding.	BTL 4	Analyzing
21.	What is the need of EOL in Facsimile machine?	BTL 4	Analyzing
22.	Use Huffman code to derive the minimum average number of bits per character needed to encode the given characters with their probability of occurrence: A and B = 0.25, C and D = 0.14, E, F, G and H = 0.055	BTL 4	Analyzing
23.	Examine JPEG frame format.	BTL 4	Analyzing
24.	Analyse the need of run length encoding? For which type of applications it is more useful? Justify.	BTL 4	Analyzing
	PART – B		
1.	Write a short note: (i) Source encoders & destination decoders (6) (ii) Lossless and Lossy compression techniques (7)	BTL 1	Remembering
2.	Construct the difference between entropy encoding and source encoding with an example. (13)	BTL 1	Remembering
3.	Explain Joint Picture Expert Group (JPEG) encoding process in detail. Also mention its applications. (13)	BTL 1	Remembering
4.	With the help of a diagram identify the five main stages associated with the baseline mode of operation of JPEG and give a brief description of the role of each stage. (13)	BTL 1	Remembering
5.	Describe the operation of JPEG encoder and decoder with neat diagrams. (13)	BTL 1	Remembering
6.	Give a detailed note on the following image file formats: (i) GIF (7) (ii). TIFF (6)	BTL 2	Understanding
7.	Explain in detail about various image compression techniques. (13)	BTL 2	Understanding

<table>
<tr><td>8.</td><td>Summarize the principle of:
i. Arithmetic coding. (6)
ii. LZW algorithm. (7)</td><td>BTL 2</td><td>Understanding</td></tr>
<tr><td>9.</td><td>Discuss the principle of Lempel-Ziv and Lempel-Ziv-Welsh coding techniques. (13)</td><td>BTL 2</td><td>Understanding</td></tr>
<tr><td>10.</td><td>A sequence is encoded using LZW algorithm and the initial dictionary shown in the table below. (13)
<table>
<tr><td>Index</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr>
<tr><td>Entry</td><td>a</td><td>b</td><td>h</td><td>i</td><td>s</td><td>t</td></tr>
</table>
The encoder output sequence as follows : Decode the sequence.
<table>
<tr><td>6</td><td>3</td><td>4</td><td>5</td><td>2</td><td>3</td><td>1</td><td>6</td><td>2</td><td>9</td></tr>
<tr><td>11</td><td>16</td><td>12</td><td>14</td><td>4</td><td>20</td><td>10</td><td>8</td><td>23</td><td>13</td></tr>
</table></td><td>BTL 3</td><td>Applying</td></tr>
<tr><td>11.</td><td>Identify the salient features of over scanning and write about EOL code and its uses. (13)</td><td>BTL 3</td><td>Applying</td></tr>
<tr><td>12.</td><td>A series of message is to be transferred between two computers. The message comprises of the characters A, B, C, D and E. The probabilities of occurrence of the above characters are 0.4. 0.19, 0.16, 0.15 and 0.1 respectively. Use Huffman coding to obtain a codeword for the above characters. Determine the average number of bits per codeword. (13)</td><td>BTL 3</td><td>Applying</td></tr>
<tr><td>13.</td><td>(i) Generate arithmetic code for the sequence 1233 with cumulative density function Fx(1) = 0.8, Fx (2) = 0.82 and Fx (3) =1. (7)
(ii) Explain in detail about LZW algorithm (6)</td><td>BTL 3</td><td>Applying</td></tr>
<tr><td>14.</td><td>Let a simple dictionary contain the following string with their respective codes.
<table>
<tr><td>String</td><td>Code</td></tr>
<tr><td>A</td><td>1</td></tr>
<tr><td>B</td><td>2</td></tr>
<tr><td>C</td><td>3</td></tr>
</table>
Now if the input string is ABAABBABCABABBA, how does the LZW compression algorithm work? (13)</td><td>BTL 4</td><td>Analyzing</td></tr>
<tr><td>15.</td><td>Consider the string: ARBER, analyse Huffman coding and decode it. (13)</td><td>BTL 4</td><td>Analyzing</td></tr>
<tr><td>16.</td><td>Derive the Huffman code word of the given text “AAAAAAAAAABBBBBCCCSS” by using static Huffman tree. Calculate Entropy and derive the average number of bits per character for code word and code efficiency? (13)</td><td>BTL 4</td><td>Analyzing</td></tr>
<tr><td>17.</td><td>The symbol probability table is given below. Write the code word for CAEE$ using Arithmetic Encoding scheme. (13)
<table>
<tr><td>Symbol</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>$</td></tr>
<tr><td>Probability</td><td>0.2</td><td>0.1</td><td>0.2</td><td>0.05</td><td>0.3</td><td>0.05</td><td>0.1</td></tr>
</table></td><td>BTL 4</td><td>Analyzing</td></tr>
</table>

PART-C			
1.	State the following: (15) (i) Source Encoder and Destination Encoder (ii) Lossless and Lossy compression techniques (iii)Entropy Encoding (iv)Source Encoding	BTL 1	Remembering
2.	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. Estimate code word and draw the Huffman code tree. (15)	BTL 2	Understanding
3.	A series of messages is to be transferred between computers. The message comprises of the characters ***a*** through ***f***. The probability of occurrence of the characters ***a*** through ***f*** are 0.4, 0.2, 0.1, 0.1, 0.1, 0.1 respectively. Use Huffman coding procedure to derive a codeword and also obtain the average codeword length. (15)	BTL 3	Applying
4.	Messages comprising seven different characters, A through G are to be transmitted over a data link, analysis has shown that the relative frequency of occurrence of each character is A : 0.10, B : 0.25, C : 0.05, D : 0.32, E : 0.01, F : 0.07, G : 0.2. (i) Derive the entropy of the messages. (ii) Use static Huffman coding to derive a suitable set of code words. (iii)Derive the average number of bits per code word for four code word set to transmit a message. (iv) Calculate efficiency and redundancy (15)	BTL 4	Analyzing
5.	Analyze the importance of arithmetic encoding algorithm 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 (15)	BTL 4	Analyzing

UNIT IV - VOIP TECHNOLOGY			
Basics of IP transport, VoIP challenges, H.323/ SIP –Network Architecture, Protocols, Call establishment and release, VoIP and SS7, Quality of Service- CODEC Methods- VOIP applicability			
PART – A			
Q.No	**Questions**	**BT Level**	**Competence**
1.	What are the major challenges involved in the implementation of VOIP?.	BTL 1	Remembering
2.	Write the applications of VOIP in multimedia systems.	BTL 1	Remembering
3.	Draw the network architecture for SIP.	BTL 1	Remembering
4.	Describe Real Time Transport Protocol.	BTL 1	Remembering
5.	List the salient features of VOIP technology.	BTL 1	Remembering
6.	Draw OSI- IP protocol stack for voice transport.	BTL 1	Remembering
7.	What are the parts involved in H.323network architecture?	BTL 2	Understanding
8.	Which is the first successful set of protocols for VOIP?	BTL 2	Understanding
9.	Interpret the function of gateway and gatekeeper.	BTL 2	Understanding

10.	Summarize all CODEC methods.	BTL 2	Understanding
11.	Sketch the protocol layer of H.323.	BTL 2	Understanding
12.	Summarize the advantages of SIP over H.323 protocol.	BTL 2	Understanding
13.	Illustrate the role of ARQ in H.323.	BTL 3	Applying
14.	Classify and describe the SIP basic classes.	BTL 3	Applying
15.	Sketch the H.323 network architecture with neat diagram.	BTL 3	Applying
16.	How does call establishment takes place in VOIP?	BTL 3	Applying
17.	Illustrate the information presented in the packet.	BTL 3	Applying
18.	Classify the different kinds of server available in SIP.	BTL 3	Applying
19.	Analyse the need and draw the SIGTRAN protocol suite.	BTL 4	Analyzing
20.	Categorize the commonly used CODEC's standards and its features.	BTL 4	Analyzing
21.	Pointout the challenges involved in VoIP.	BTL 4	Analyzing
22.	Examine how QOS is measured in VOIP?	BTL 4	Analyzing
23.	Pointout the features of SS7 and its applications.	BTL 4	Analyzing
24.	Examine the different factors that determine the QoS of VoIP systems?	BTL 4	Analyzing
	PART – B		
1.	(i) Give a detailed note on challenges in VOIP and its applications. (10) (ii) Write a brief note on QoS issues in VOIP. (3)	BTL 1	Remembering
2.	(i) Define and explain the architecture of SIP. (10) **(ii)** List the Various CODEC methods. (3)	BTL 1	Remembering
3.	Discribe in detail about H.323 and SIP network architectures. (13)	BTL 1	Remembering
4.	Explain SS7 protocol suite and discuss ISUP call establishment and release in detail. (13)	BTL 1	Remembering
5.	Explain the session initiation protocol and write its application for VoIP. (13)	BTL 1	Remembering
6.	Outline the H.323/ SIP network architecture along with protocol stack with neat diagram. (13)	BTL 2	Understanding
7.	Narrate about the call establishment and release phase of VOIP connection with neat diagram. (13)	BTL 2	Understanding
8.	Give the SIP messages and address formats. Describe the session establishment, termination and call tracking using SIP. (13)	BTL 2	Understanding
9.	Describe the principle and architecture of SS7 and discuss the need for SS7 signalling in VoIP. (13)	BTL 2	Understanding
10.	Illustrate the network architecture and protocols supporting the functionality of VOIP networks. (13)	BTL 3	Applying

11.	Give a detailed note on: (i) CODEC methods. (7) (ii) VOIP applications and its current status. (6)	BTL 3	Applying
12.	Discover in detail the various service architectures to QoS support for multimedia applications over the Internet with diagrams. (13)	BTL 3	Applying
13.	Illustrate Voice over IP ? Elaborate the H.323 architecture with a diagram. (13)	BTL 3	Applying
14.	Compare and contrast H.323 and SIP protocols in detail with respect to complexity, reliability, message encoding, scalability, and address resolution. (13)	BTL 4	Analysing
15.	How the call establishment will be carried out in H.323. Explain in detail. (13)	BTL 4	Analysing
16.	Determine the format of RTCP sender and give description to the packet length and the fields repeated for each source. Describe each field. (13)	BTL 4	Analyzing
17.	Examine the types of CODEC's for handling VOIP traffic. (13)	BTL 4	Analyzing
	PART C		
1.	Discuss the basics of SS7 signaling and describe its applications in VOIP. (15)	BTL 1	Remembering
2.	Summarize the concept behind VOIP network architecture and Discuss the terminology associated with it. (15)	BTL 2	Understanding
3.	Interpret the fast connect procedure of H.323 with necessary diagrams. (15)	BTL 3	Applying
4.	How would you relate SIGTRAN with IP & SS7? Explain. (15)	BTL 4	Analyzing
5.	(i) Explain the session initiation protocol and write its application for VoIP. (10) (ii) Give a brief note on QoS issues in VoIP. (5)	BTL 4	Analyzing

UNIT V - MULTIMEDIA NETWORKING

Multimedia networking -Applications-streamed stored and audio-making the best Effort service-protocols for real time interactive Applications-distributing multimedia-beyond best effort service-secluding and policing Mechanisms-integrated services-differentiated Services-RSVP.

PART – A

Q.No	Questions	BT	Competence
1.	List out the schemes for streaming stored media & name the advantages of each scheme	BTL 1	Remembering
2.	Outline the link scheduling discipline methods.	BTL 1	Remembering
3.	Define packet jitter.	BTL 1	Remembering
4.	What is mean by RSVP?	BTL 1	Remembering
5.	Show the limitation of best effort service.	BTL 1	Remembering
6.	Outline the features of best effort service.	BTL 1	Remembering

7.	Summarize the important points about interactivity for streaming stored audio/Video.	BTL 2	Understanding
8.	Discuss the meaning of interactivity for real time interactive audio/video.	BTL 2	Understanding
9.	Explain the role of the DNS in CDN.	BTL 2	Understanding
10.	Classify the different RTP stream in different session identified by a receiver.	BTL 2	Understanding
11.	Discuss the limitations of Best-Effort services.	BTL 2	Understanding
12.	Differentiate average rate and peak rate.	BTL 2	Understanding
13.	Illustrate the role of SIP register.	BTL 3	Applying
14.	Interpret the header fields in RTP through proper diagram.	BTL 3	Applying
15.	How will you distinguish RTP & RTC packets?	BTL 3	Applying
16.	Choose some of the difficulties associated with the inserv model and per-flow reservation of resources.	BTL 3	Applying
17.	Categorize the difference between end-to-end delay & packet jitter.	BTL 3	Applying
18.	Differentiate scheduling and policing mechanisms.	BTL 3	Applying
19.	Analyse the causes of packet jitter.	BTL 4	Analysing
20.	Briefly explain the removal of jitter at the receiver for audio.	BTL 4	Analysing
21.	Discuss how the role of an SIP register is different from that of a home agent in mobile IP.	BTL 4	Analysing
22.	Illustrate about streaming of Audio/Video.	BTL 4	Analysing
23.	Pointout the applications of streamed stored audio and video in multimedia communication.	BTL 4	Analysing
24.	Mention the applications of multimedia networking.	BTL 4	Analysing
PART – B			
1.	Write short notes on (a) Real time streaming protocol (3) (b) Decompression (3) (c) Jitter removal (3) (d) Quantization (4)	BTL 1	Remembering
2.	(i) List out RTCP packet types. (3) (ii) Explain the information contained in RTCP packet types. (10)	BTL 1	Remembering
3.	Explain intserv model and per-flow reservation of resources. (13)	BTL 1	Remembering
4.	Mention the procedures to be followed for quality maintenance of Audio. (13)	BTL 1	Remembering
5.	Classify multimedia applications, identify the network services the applications need and elaborate on “best of best effort service”. (13)	BTL 1	Remembering
6.	Give a detail note on Multimedia protocols for real time interactive application with an example. (13)	BTL 2	Understanding

7.	Summarize the important points on: (i) Leaky bucket (3) (ii) WFQ (3) (iii) Round Robin Scheduling (3) (iv) Priority Queue (4)	BTL 2	Understanding
8.	Give a brief note on integrated and differential service. (13)	BTL 2	Understanding
9.	Explain the principle and applications od RSVP. (13)	BTL 2	Understanding
10.	(i) Explain the various scheduling mechanisms. (7) (ii) What are the policing mechanisms used in multimedia networking? Summarize. (6)	BTL 3	Applying
11.	Explain the principle of RSVP. Compare best effort and differentiated services. (13)	BTL 3	Applying
12.	Classify the different scheduling mechanisms suitable for multimedia systems with suitable diagrams. (13)	BTL 3	Applying
13.	(i) Illustrate the features of distributed multimedia system. (7) (ii) Give an overview of integrated services. (6)	BTL 3	Applying
14.	Give detailed note on: (i) Policing mechanisms in multimedia networking (7) (ii) Multimedia protocols employed for real time interactive applications. (6)	BTL 4	Analyzing
15.	Compare and contrast best effort and differentiated services. (13)	BTL 4	Analyzing
16.	Criticize on how the jitter can be removed from audio at the receiver end. (13)	BTL 4	Analyzing
17.	Bring out the significance of multimedia networking and comment on the various classes of service offered by these networks. (13)	BTL 4	Analyzing
	PART C		
1.	Describe the principles and applications of scheduling and policing mechanisms for providing QOS guarantee. (15)	BTL 1	Remembering
2.	Summarize the interactivity for streaming stored audio/video for real time interactive applications. (15)	BTL 2	Understanding
3.	Discuss how the performance of audio quality can be recovered from packet loss? (15)	BTL 3	Applying
4.	Explain any one of the protocols for real time interactive applications with suitable diagrams. (15)	BTL 4	Analyzing
5.	In detail, Explain the role played by RSVP in multimedia networks with illustrations. (15)	BTL 4	Analyzing