INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal, Hyderabad - 500 043

INFORMATION TECHNOLOGY

TUTORIAL QUESTION BANK

Course Name	:	Multimedia and Rich Internet Applications
Course Code	:	A80547
Class	:	IV B. Tech II Semester
Branch	:	Information Technology
Year	:	2018 – 2019
Course Faculty	:	Ms. Y Harika Devi, Assistant Professor, IT

OBJECTIVES

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
	UNIT-1 **Fundamental concepts in Text and Images**		
	Part - A (Short Answer Questions)		
1.	Define Multimedia applications.	Remember	1
2.	Define the term Hypermedia.	Remember	1
3.	Discuss about World Wide Web.	Understand	1
4.	List and Explain about Hardware components.	Understand	1
5.	Discuss about Software Components.	Understand	1
6.	Explain Intensity Resolution.	Understand	1
7.	Discuss about Dithering.	Understand	1
8.	Define the term Half-tone Printing.	Understand	2
9.	List out the different types of file formats.	Understand	1
10.	List out the advantages of JPEG File format.	Remember	1
11.	Discuss about HTTP Protocol.	Remember	2
12.	List and explain the uses of Multimedia applications.	Remember	1
13.	List out and Explain Flours of GIF.	Understand	1
14.	Explain GIF animation packages.	Understand	2
15.	Discuss about Multimedia APIs.	Understand	1
16	List out the goals of World Wide Web.	Remember	1

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
	Part - B (Long Answer Questions)		
S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
1.	Explain about multimedia. List various components of multimedia.	Understand	1
2.	Discuss about color models in images and video.	Understand	1
3.	List out the fundamental concepts in text and images with examples.	Remember	1
4.	Explain graphics and image data representation and also their data types.	Understand	1
5.	Discuss about multimedia software tools.	Understand	2
6.	Differentiate between hypermedia and multimedia.	Understand	2
7.	Explain about WWW. Discuss about color models in video.	Understand	1
8.	Elaborate in detail about color lookup tables.	Understand	2
9.	Discuss the following. (a) Intensity resolution. (b) Spatial resolution. (c) Half-tone printing.	Understand	1
10.	Explain about GIF and JPEG file formats.	Understand	1
11.	Discuss the various file formats for information exchange in multimedia.	Understand	2
12.	Discuss the following transformations. (a) XYZ to RGB Transformation. (b) XYZ to RGB Transformation with gamma correction.	Understand	1
13.	Explain about Image formation and gamma correction.	Understand	2
14.	Elaborate the following. (a) Color-matching function and color monitor specifications. (b) Munsell color naming system.	Understand	1
	Part – C (Problem Solving and Critical Thinking Questions)		
1.	Discuss about HTTP Protocol with examples.	Understand	1
2.	Explain HTML with syntax of tags and examples in HTML.	Understand	1
3.	Discuss in detail about XML with syntax of tags and examples in XML.	Understand	2
4.	Explain SMIL with syntax of tags and examples in SMIL.	Understand	
5.	Discuss in detail about L * a * b *(CIELAB) color model.	Understand	2
6.	Define the term out-of-Gamut colors. State and explain Grassman's law.	Remember	1
7.	Explain in detail about the graphics and image data types used in multimedia.	Understand	1
8.	Discuss HTTP protocol? Explain WWW languages.	Understand	1
9.	Explain multimedia? Explain roles in internet environment.	Understand	2
10.	Discuss in detail about color lookup tables.	Understand	2
	UNIT-II **Fundamental concepts in Video and digital audio and Multimedia Data Compression**		
	Part - A (Short Answer Questions)		
1.	Explain the term Component video signal.	Understand	2
2.	Explain about Composite video signal.	Remember	2
3.	Define the term S-Video signal.	Understand	2
4.	Explain Chroma signal.	Understand	2
5.	Explain Quadrature signal.	Understand	3
6.	Discuss Advantages of interlaced video.	Understand	2
7.	Discuss Problems of interlaced vide.	Remember	3
8.	Describe the Advantages of digital video.	Remember	3
9.	Define High Definition TV.	Remember	2
10.	Define the term PAL Video.	Remember	3
11.	Discuss about SECAM Video.	Understand	3

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
12.	Define MIDI Messages.	Remember	2
13.	Define MIDI to WAV Conversion.	Remember	2
14.	Define lossless JPEG technique and List out different methods for compression.	Remember	3
15.	Explain about SPIHT in detail.	Understand	2
Part - B (Long Answer Questions)			
1.	Explain types of video signals with example.	Understand	2
2.	Explain the following. (a) Analog video (b) Digital video.	Understand	3
3.	Explain different types of video signals.	Understand	3
4.	Explain MIDI technology with suitable examples.	Understand	2
5.	Explain the basic compression principles of text and image.	Understand	2
6	Explain Concept of multimedia data compression.	Understand	2
7.	Explain Lossless compression and Lossy compression algorithms with examples.	Understand	3
8.	Explain image compression standards with suitable examples.	Understand	2
9.	Discuss the following , (a) Chroma signal. (b) Quadrature signal.	Remember	2
10.	Explain the advantages of interlaced video? What are some of its problems.	Understand	3
11.	Explain the advantages of digital video? What is the purpose of using chroma sub sampling. Why it is feasible.	Understand	3
12.	Describe the following. (a) CCIR standards for digital video (b) High Definition TV [HDTV]	Remember	3
13.	Discuss the following. (a) PAL video. (b) SECAM video. (c) Chroma sub sampling.	Understand	4
14.	Distinguish between the following. (a) Linear and non-linear quantization. (b) Audio quality and data rate.	Understand	4
15.	Discuss in detail about pulse code modulation (PCM) Technique.	Understand	2
16.	Discuss the run length coding algorithm.	Understand	2
17.	Explain the Huffman coding algorithm.	Understand	2
Part - C (Problem Solving and Critical Thinking Questions)			
1.	Describe NTSC video? Write about luminance(Y) and chrominance signals in NTSC.	Remember	3
2.	Discuss the application of quadrature-modulation technique in NTSC video. Compare three analog broadcast TV systems.	Understand	2
3.	Draw a diagram showing a sinusoidal at 5.5kHz and sampling at 8kHz (show the 8 intervals between samples).	Understand	3
4.	Draw the alias at 2.5 kHz and show that in the eight samples intervals, exactly 5.5 cycles of true signal fit into 2.5 cycles of the alias signal.	Understand	2
5.	Explain differential coding of audio. Also discuss its lossless version.	Understand	2
6.	Discuss the following. (a) Delta Modulation (DM). (b) Adaptive differential pulse code modulation (ADPCM).	Understand	3
7.	Construct the coding tree for "WELCOME" USING Shannon-Fano Algorithm and Huffman coding.	Understand	2

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
8.	Draw the block diagram of 1D dyadic wavelet transform. Explain the Functioning of each individual block.	Understand	3
9.	Compare directory based coding with lossless image compression.	Understand	2
10.	Explain lossless JPEG technique.	Understand	4
11.	Discuss uniform scalar quantization, non uniform scalar quantization and vector quantization techniques.	Understand	2
12.	Discuss the following. (a) Explain in detail the JBIG standard. (b) Explain in briefly about JBIG2 standard.	Understand	4
13.	Explain in detail about model-based coding.	Understand	2

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UNIT-III
Basic Video Compression techniques, Case study and Web 2.0
Part - A (Short Answer Questions)

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	PART-I (MID- I)		
1.	Explain video compression techniques with one example.	Understand	3
2.	Define motion compensation.	Remember	3
3.	Differentiate between H.261 and MPEG-I	Understand	3
4.	List out the layers in MPEG-I video bit stream standard.	Remember	3
5.	List out the scalabilities supported by MPEG-2.	Remember	3
6.	Differentiate between MPEG-1 and MPEG-2.	Understand	3
7.	Define Vocoder? List out the types of Vocoders.	Remember	4
8.	Discuss the advantages of using MELP.	Understand	4
9.	Explain Audio compression technique? List out the types of Audio compression techniques.	Understand	4
10.	Explain about MPEG audio.	Understand	4
11.	Discuss the main objective of the bit allocation algorithm.	Understand	4
12.	Explain Hybrid scalability.	Understand	4
13.	Define MPEG audio.	Remember	4
14.	Discuss MPEG audio layers.	Remember	4
15.	Explain frame prediction for frames picture.	Understand	5
16.	Discuss field prediction for field pictures.	Understand	5
17.	Explain field prediction for frame pictures.	Understand	5
18.	Define the term frame picture.	Remember	5
19.	Define an audio layer.	Remember	5
20.	Explain MPEG-1 with an example.	Understand	5
21.	Discuss MPEG-2 with an example?	Understand	5
22.	Define H.261 with an example.	Remember	5
23.	Define the term MELP.	Remember	5
24.	Define a frame with an example.	Remember	5
	PART-II (MID- II)		
1.	Define the term Web 2.0.	Remember	3
2.	List out the features of web 2.0.	Remember	3
3.	Define the term search engine.	Remember	3
4.	Define content network.	Remember	3
5.	Explain about concept of blogging.	Understand	3
6.	Discuss Blog components.	Understand	5
7.	Discuss in brief few of social networking sites.	Understand	5
8.	Define the term social media.	Remember	4
9.	Elaborate on social networking concept.	Remember	4
10.	Define about social marking.	Remember	5
11.	Discuss about tagging.	Understand	5

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
12.	Explain about the term WebTop.	Understand	3
13.	Discuss about SaaS with an example.	Understand	3
14.	List out the characteristics of SaaS.	Remember	3
15.	List out the benefits of SaaS to customer.	Remember	4
16.	Define Rich Internet Application.	Remember	3
17.	Define about the term XML.	Understand	4
18.	Define the term RSS.	Understand	3
19.	Define Atom with an example.	Understand	3
20.	Define about JSON.	Remember	5
21.	Define the term VOIP.	Understand	5
22.	Explain Micro formats.	Understand	5
23.	Discuss Resource description framework.	Understand	5
24.	Discuss XML and RSS with an example.	Understand	5
Part - B (Long Answer Questions)		
1.	Discuss about MPEG audio compression.	Understand	3
2.	Explain compression methods for text, image and audio.	Understand	3
3.	Discuss video compression techniques with one example.	Understand	3
4.	Explain MPEG-audio compression techniques with a case study example.	Understand	3
5.	Discuss video compression techniques with one example.	Understand	3
6.	Discuss about, (a) XML (b) VoIP (c) JSON (d) RSS (e) Atom	Understand	3
7.	Define web 2.0? Explain the applications of web 2.0.	Remember	3
8.	Explain the following. (a) Social networking (b) Social media. (c) Social Marking.	Understand	3
9.	Discuss web 2.0 monetization and business models.	Understand	3
10.	Explain about Rich Internet Applications.	Understand	3
11.	Define How Predictive coding technique is applied for video compression.	Remember	3
12.	Discuss MPEG-1 Audio/video digital compression standard.	Understand	4
13.	Explain motion compensation in MPEG-1.	Understand	4
14.	Differentiate between H.261 and MPEG-1.	Understand	4
15.	Discuss Functionality of each layer in MPEG-1 Video bit stream standard.	Understand	4
16.	Distinguish between ADPCM and G.726 ADPCM.	Understand	5
17.	Define vocoder?.Discuss its types.	Remember	5
18.	Define Web 2.0. Explain features of web2.0 with examples.	Remember	5
19.	Define content networks. Discuss few examples of content networks.	Remember	5
20.	Explain in detail the concept of blogging.	Understand	5
21.	Explain in detail the concept of tagging.	Understand	5
22.	Discuss in brief about certain rich internet applications.	Understand	5
23.	Elaborate the following. (a) WebTop (b) SaaS.	Understand	3
24.	Explain in detail the different location-based services.	Understand	3

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
Part - C (Problem Solving and Critical Thinking Questions)		
1.	Discuss the procedure for sequential search, 2D logarithmic search and hierarchical search techniques.	Understand	3
2.	Explain H.261 quantization.	Understand	3
3.	Elaborate the five modes of predictions and types of scalability supported by MPEG-2 standard.	Understand	3
4.	Discuss in detail about critical bands and bark unit.	Understand	4
5.	Explain the following. (a) Tagging. (b) Micro facts. (c) Resource description framework.	Understand	5
UNIT-IV **Rich Internet Applications(RIAs) with Adobe Flash and Rich internet Applications (RIAs) with Flex 3**		
Part - A (Short Answer Questions)		
1.	Write short notes on adobe flash CS3.	Remember	6
2.	List out the different types of tools used in flash.	Remember	6
3.	Write short notes on Editing button symbols.	Remember	6
4.	Write short notes on Adding key frames.	Remember	6
5.	List out how the changes are verified with test movie.	Remember	6
6.	List the steps how the sound is added to a button?	Remember	6
7.	List the procedure steps creating title animation for movie.	Remember	6
8.	List the steps how text field is added to a movie.	Remember	6
9.	Explain the procedure for importing an image into a flash movie.	Understand	6
10.	Discuss in brief about flash players.	Understand	6
11.	Define casting.	Remember	7
12.	List and describe the packages included in media.	Remember	7
13.	Write short notes on perspectives.	Remember	8
14.	Discuss in brief about Style tag.	Understand	7
15.	Discuss in brief Linking External CSS.	Understand	7
16.	Discuss briefly the steps in enabling source view.	Understand	7
17.	Discuss in brief container classes.	Understand	7
18.	Discuss in brief List classes.	Understand	7
19.	List out the different types of containers.	Remember	7
20.	List out the Different types of list controls.	Remember	7
21.	Discuss in detail about component layout.	Understand	7
22.	Distinguish between Title and Flow container component.	Understand	6
23.	Discuss briefly Bind able metadata tag.	Understand	6
24.	Explain visual effects and multimedia.	Understand	6
25.	Discuss in brief about masks.	Understand	6
26.	Discuss in brief about Filters.	Understand	7
27.	Discuss in brief Blend modes.	Understand	7
28.	Explain the procedure for importing an image into a flash movie.	Understand	7
Part - B (Long Answer Questions)		
1.	Explain Adobe Flash.	Understand	7
2.	Explain Various steps in developing a Rich Internet Applications (RIAs) with adobe flash. Illustrate with an example.	Understand	7 7
3.	Explain briefly about Rich Internet Applications (RIAs) with adobe flash.	Understand	7
4.	Define Adobe flash? Describe different types of tools used in Flash.	Remember	7
5.	Discuss How do you create and publish your flash movie? Explain with an	Understand	7

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
	example.		
6.	Discuss in detail the flash movie development environment.	Understand	7
7.	List the steps for creating an interactive, animated button.	Remember	7
8.	Explain the process of creating a shape with oval tool.	Understand	7
9.	Discuss in brief about, (a) Adding text to a button (b) Converting a shape into a symbol	Understand	7
10.	Explain the following, (a) Editing button symbols (b) Adding key frames	Understand	7
11.	Explain the following, (a) Discuss briefly how changes are verified with test movie (b) Explain the procedure for creating title animation for movie.	Understand	7
12.	Discuss in brief about, (a) Explain how text is animated with tweening process (b) Explain how text field is added to a movie.	Understand	7
13.	Explain the process of creating an advertisement banner with masking.	Understand	7
14.	Discuss in detail how an online form is created using flash techniques.	Understand	7
15.	Explain in detail the development process of animation preloader.	Understand	8
16.	List and discuss the common flash Action Script 3.0 functions.	Remember	8
17.	Explain visual effects and Multimedia in RIAs.	Understand	8
18.	Discuss developing an application with Flex 3 with an example.	Understand	7
19.	Explain Visual Effects and Multimedia.	Understand	7
20.	List and discuss the reasons for developing RIAs in flex.	Remember	
21.	Discuss in brief about, (a) Flash players. (b) Adobe Integrated runtime.	Understand	7
22.	Discuss in brief about, (a) Flex framework. (b) Adobe framework. (c) Third-party frameworks and components.	Understand	7
23.	Explain the following, (a) Action script 3.0 (b) Different data formats for messaging and media in flash.	Understand	7
24.	Elaborate the following, (a) Packages and classes. (b) Class members.	Understand	7
25.	Discuss in brief about, (a) The process involved in designing and developing Flex 3. (b) The basic syntax that defines Action script.	Understand	7
Part - C (Problem Solving and Critical Thinking Questions)			
1.	Explain the following, (a) Explain how Action Script is added to the button. (b) Discuss the basic syntax that defines Action Script.	Understand	6
2.	Discuss in detail the logic or control structure in Action Script.	Understand	6
3.	Discuss in brief about, (a) Object class in Action Script. (b) Discuss with example the usage of "static" keyword.	Understand	6

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
4.	Discuss in brief about, (a) Method parameters. (b) Constructor methods. (c) Access modifiers. (d) Namespaces.	Understand	7
5.	Discuss in brief about, (a) Getters and setters function. (b) Interfaces and inheritance.	Understand	8
6.	Discuss in detail the steps involved in creating an Action Script project.	Understand	8
7.	Explain in detail the three types of MXML tags in flex.	Understand	8
8.	Discuss in brief about, (a) Style tag. (b) Linking external CSS.	Understand	7
9.	Explain the following, (a) Capture phase (b) Target phase (c) Bubbling phase	Understand	7
10.	Discuss the steps in creating custom events. Also discuss the strategies for using them.	Understand	7
11.	Discuss in brief about, (a) Extending button. (b) Extending text input.	Understand	7
12.	Elaborate in brief about Tag cloud.	Understand	7
13.	Discuss in brief about, (a) Style tag. (b) Linking external CSS.	Understand	
14.	Define state. Explain the different ways of adding states to components.	Remember	7
15.	Discuss in brief about, (a) Parallel effects. (b) Sequence effects. (c) Nested effects.	Understand	7
16.	Explain the following: (a) Explain in detail the event process. (b) Explain Event Dispatcher class.	Understand	7
17.	Discuss in brief about: (a) Phases of event flow. (b) List and describe the core display classes.	Understand	7
18.	Explain the following: (a) Views (b) Perspectives	Understand	8
19.	Elaborate the following: (a) Flex compilation process. (b) Phases of event flow.	Understand	8
20.	Discuss in brief about: (a) Different projects that can be created in flex builder. (b) List out the ways of creating new projects.	Understand	8
21.	Discuss in brief about, (a) Discuss the life cycle of flex framework (b) Discuss in brief list controls.	Understand	8
22.	Discuss in brief about, (a) UI Component. (b) Container classes. (c) List classes.	Understand	8

S. No	QUESTION	Blooms Taxonomy Level	Course Outcome
23.	List and discuss the elements used for displaying initial window by AIR.	Remember	8
24.	List and discuss the packages of flash player.	Remember	8
	UNIT-V **Ajax-Enabled Rich Internet Application**		
	Part - A (Short Answer Questions)		
1.	Explain Traditional web application.	Understand	8
2.	Discuss Ajax application.	Understand	8
3.	Explain about classic XHTML form.	Understand	8
4.	Discuss Ajax Enabled forms.	Understand	9
5.	Define Ajax.	Remember	9
6.	Discuss Importance of Ajax in Building Rich Internet application.	Understand	9
7.	Discuss briefly the evolution of Ajax.	Understand	9
8.	List the properties of XML Http Request object.	Remember	9
9.	List the XML Http Request object method.	Remember	9
10.	Define JSON.	Remember	10
11.	Explain Dojo Toolkit.	Understand	10
12.	List Application of Dojo Toolkit.	Remember	10
13.	List the steps for Creating calendar Application with Dojo toolkit.	Remember	10
	Part - B (Long Answer Questions)		
1.	What is Ajax. Why it is important for building rich internet application.	Remember	9
2.	Compare traditional web applications with Ajax applications.	Understand	9
3.	Explain Dojo Toolkit.	Understand	9
4.	Explain about classic XHTML form and Ajax enabled forms.	Understand	9
5.	Discuss in brief about Evaluation of Ajax.	Understand	9
6.	Explain how XML Http Request object is used for creating and managing asynchronous requests.	Understand	10
7.	List and explain the properties and methods of XML Http Request object.	Remember	10
8.	Write and explain in detail an XML code for a student address-book application that communicates with a server-side application.	Understand	10
9.	Discuss in detail about JSON.	Understand	10
10.	Explain the steps for creating calendar Application with Dojo Tool kit.	Understand	10
	Part - C (Problem Solving and Critical Thinking Questions)		
1.	Write XML code for asynchronously requesting a server XML documents and then displaying the images in HTML table.	Understand	9
2.	List few Ajax applications used in managing asynchronous requests.	Remember	9
3.	Explain about address-book application used at server-side applications.	Understand	9
4.	Define an application using Dojo Toolkit.	Understand	9
5.	Elaborate on the evolution of Ajax.	Remember	10
6.	Give any example for traditional web application.	Remember	10
7.	Give an example for Dojo toolkit.	Remember	10
8.	List the importance of Ajax enabled forms.	Remember	10
9.	Give the importance of XHTML with suitable examples.	Remember	10
10.	Write about the importance of JSON in detail.	Understand	10

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