

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA-8
(Affiliated to Krishna University, Machilipatnam)

SYLLABUS

Subject: Computer Science
Course Title: Multimedia Tools
& Applications

Semester: V/VI
Course Code: 20CSSEC41MM3

No. of Hours: 45 LTP: 300 Credits: 3

Objectives

- To explore the fundamentals of Multimedia to design and develop animations.
- To create animations that incorporate text, images, sound, and video
- To learn how to use basic video compression techniques.

Course Outcomes

- CO1:** Gain knowledge on the concepts related to Multimedia.
- CO2:** Understand the concepts like image data representation and color modes.
- CO3:** Understand the different types of video signals and digital audio.
- CO4:** Know about multimedia data compression types and audio compression standards.
- CO5:** Learn about basic video compression techniques.

UNIT-I **(9 Hrs.)**

Introduction to multimedia– What is Multimedia? Components of Multimedia System, Multimedia and Hypermedia, Multimedia Authoring metaphors, Multimedia Production, Multimedia Presentation, Some Technical Design Issues, Automatic Authoring – Programming Exercises.

UNIT-II **(9 Hrs.)**

Image Data Representations and color models – Color science Human vision Image data types– Black & white images – 1-bit images (Binary image),8-bit (Gray -level images).Color images –24-bit color images,8-bit color images.Color models – Programming Exercises.

UNIT-III **(9 Hrs.)**

Fundamental concepts in video– Types of Video Signals– Analog Video, Digital Video.Basics of Digital Audio– What is Sound, Digitization of Sound, Quantization and Transmission of Audio, Pulse code modulation, Differential coding of audio, Predictive coding – Programming Exercises.

UNIT-IV

(9 Hrs.)

Multimedia Data Compression– Introduction, Basics of Information Theory, Lossless Compression Algorithms, Fix-Length Coding, Run-length coding, Dictionary-based coding, Variable Length Coding, Huffman Coding Algorithm.

Audio Compression standards– Introduction, Psychoacoustics model, MPEG Audio – Programming Exercises.

UNIT-V

(9 Hrs.)

Basic Video Compression Techniques– Introduction to Video compression, Video compression standard H.261, Video compression standard MPEG-1 – Programming Exercises.

Co-Curricular Activities

- Assignments on problem solving
- Group discussions
- Student presentations and seminars
- Online quizzes
- Project work

Prescribed Book

1. Fundamentals of Multimedia by Ze-Nian Li & Mark S. Drew. Publisher: Prentice Hall.

Reference Books

1. An introduction to digital multimedia by Savage, T. M. and Vogel, K. E. 2008.
2. Digital Multimedia by Nigel Chapman & Jenny Chapman. 2009.

Online Resources

1. <https://ksuit342.wordpress.com/lectuers/>.
2. <https://www.tutorialspoint.com/multimedia>.

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA – 8
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Blueprint

Subject: Computer Science
Course Title: Multimedia Tools
& Applications
Time: 3 Hrs.

Semester: V/VI
Course Code: 20CSSEC41MM3
Max. Marks: 100

SECTION – A

Answer **ALL** questions

20 x 1 = 20M

Q. No.	UNIT	Marks Weightage	RBT LEVEL
1	I	1	No. of questions to be set RBT1 – 8 RBT2 – 8 RBT3 – 2 RBT4 – 2
2	I	1	
3	II	1	
4	II	1	
5	III	1	
6	III	1	
7	IV	1	
8	IV	1	
9	V	1	
10	V	1	
11	I	1	
12	I	1	
13	II	1	
14	II	1	
15	III	1	
16	III	1	
17	IV	1	
18	IV	1	
19	V	1	
20	V	1	

SECTION – B

Answer any **FOUR** questions

4 x 8 = 32M

Q. No.	UNIT	Marks Weightage	RBT LEVEL
21	I	8	No. of questions to be set RBT1 – 2 RBT2 – 2 RBT3 – 1 RBT4 – 1
22	II	8	
23	III	8	
24	IV	8	
25	V	8	
26	I / II / III / IV / V	8	

SECTION – C

Answer any **FOUR** questions

4 x 12 = 48M

Q. No.	UNIT	Marks Weightage	RBT LEVEL
27	I	12	No. of questions to be set RBT1 – 2 RBT2 – 2 RBT3 – 1 RBT4 – 1
28	II	12	
29	III	12	
30	IV	12	
31	V	12	
32	I / II / III / IV / V	12	

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA – 8

(Affiliated to Krishna University)

Model Question Paper

Subject: Computer Science

Semester: V/VI

**Course Title: Multimedia Tools
& Applications**

Course Code: 20CSSEC41MM3

Time: 3 Hrs.

Max. Marks: 100

SECTION – A

Answer **ALL** questions

20 x 1 = 20M

1. A project is said to be _____, starting at a beginning and running through to an end.
 - A. Straight tape
 - B. Long Run
 - C. Non-linear
 - D. Linear
2. _____ tools are designed to manage individual multimedia elements and provide user interaction.
 - A. Basic software
 - B. Authoring
 - C. Multimedia
 - D. Embed
3. The Multimedia team consists of _____ roles.
 - A. 10
 - B. 15
 - C. 16
 - D. 18
4. A Floppy disk is made up of _____.
 - A. Plastic card
 - B. Copper wire
 - C. Plastic coated layer
 - D. Copper layer
5. DVD can provide _____ pixels per horizontal line.
 - A. 512
 - B. 620
 - C. 126
 - D. 720
6. _____ is used to share documents in a standard format, which includes spreadsheets, database, email etc.,
 - A. Word
 - B. Word Processor
 - C. Notepad

D. DBA

7. _____ describes how your computer should access the media that is included in the Quick time movie.
 - A. Quick time movie file format
 - B. Quick time media abstract layer
 - C. Quick time Movie data
 - D. Quick time media services
8. _____ are the general measurements applied to individual characters.
 - A. Text metrics
 - B. Character measure
 - C. Word metrics
 - D. Character metrics
9. A _____ is a collection of characters of a single size and style belonging to a particular typeface family.
 - A. Modern Style
 - B. Faces
 - C. Font
 - D. Typeface
10. Removing “dead – air” or blank space from front of a recording and any unnecessary extra time from the end is called _____.
 - A. Macromedia
 - B. Multimedia
 - C. Audacity
 - D. Trimming
11. The role of an _____ is to create a software devices that organizes the Multimedia content.
12. Acronym of SCSI is _____.
13. _____ is connected to a computer externally at the serial port or internally by the board.
14. _____ represents the size of the original image divided by the size of the compressed image.
15. In _____, you must prepare to choose the tool that best fits the job.
16. San-serif font monitor resolution is _____ dpi.
17. The standard document format used for pages on web is called _____.
18. _____ provides a protocol for passing detailed descriptions of a musical score.
19. _____ signals consist of a discrete color and brightness value for each pixel on the screen with higher resolution.
20. In Analog video, _____ is a fine adjustment of the tape during playback, so that the tracks are properly aligned as a tape moves across the playback head.

Section – B

Answer any **FOUR** questions

4 x 8 = 32 M

21. Define Multimedia? Explain the Components of Multimedia System?
22. Outline any four Color science Human vision Image data types.
23. Discuss about Types of Video Signals in Multimedia.
24. Analyse the Lossless Compression Algorithms in Multimedia.
25. Explain about the Psychoacoustics model in detail.
26. Write about Video compression standard H.261 in Multimedia.

Section – C

Answer any **FOUR** questions

4 x 12 = 48 M

27. Explain about the Multimedia Production and Multimedia Presentation.
28. How to make use of Color images in developing a Multimedia Project.
29. Explain how Quantization and Transmission of Audio works in Multimedia.
30. Discuss about Huffman Coding Algorithm in Multimedia.
31. Write about MPEG Audio in Multimedia.
32. Elaborate about Video compression standard MPEG-1.