GUJARAT TECHNOLOGICAL UNIVERSITY
Bachelor of Engineering - SEMESTER - VI EXAMINATION - SUMMER 2025

Subject Code: 3164903   **Date: 22-05-2025**

Subject Name: Multimedia Techniques and Tools

Time:10:30 AM TO 01:00 PM   **Total Marks: 70**

Instructions
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			Marks
Q.1	**(a)**	What is multimedia? Explain its key components.	**03**
	(b)	Differentiate between lossless and lossy compression techniques with suitable examples.	**04**
	(c)	Represent the following data using Shannon-Fano coding algorithm and determine its efficiency and redundancy.	**07**

Symbol	S1	S2	S3	S4	S5	S6	S7	S8
Probability	0.25	0.25	0.125	0.125	0.0625	0.0625	0.0625	0.0625

			Marks
Q.2	**(a)**	How is image data represented? List and explain common image file formats.	**03**
	(b)	What are text file formats? Explain various formats and their typical uses.	**04**
	(c)	What is an authoring tool? Discuss the different types of authoring tools.	**07**

OR

			Marks
	(c)	Explain the architecture of multimedia.	**07**
Q.3	**(a)**	What is MIDI, and how does it differ from digital audio?	**03**
	(b)	What are the principles of animation, and why are they important?	**04**
	(c)	Discuss H.263 video compression technique with a suitable example.	**07**

OR

			Marks
	(a)	Describe the different video signal formats and their applications.	**03**
	(b)	How does computer-based animation differ from traditional animation?	**04**
	(c)	Explain the MPEG video compression technique with an example.	**07**
Q.4	**(a)**	Explain psycho-acoustics and its role in audio processing.	**03**
	(b)	Discuss the various uses of animation in different industries.	**04**
	(c)	What is virtual reality (VR), and what is its architecture?	**07**

OR

			Marks
	(a)	List and describe common digital audio file formats	**03**
	(b)	Discuss the various VR devices and their functionalities.	**04**

(c)	What are the different forms of VR, and where are they applied?	**07**
Q.5 (a)	How does image editing software enhance and manipulate photos and graphics?	**03**
(b)	How is multimedia transmitted over IP networks?	**04**
(c)	Describe the Android Multimedia Framework Architecture.	**07**

OR

(a)	List and explain key features of professional sound editing software.	**03**
(b)	What is multimedia networking, and why is it important?	**04**
(c)	Discuss the software life cycle for multimedia application development.	**07**

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