

--	--	--	--	--	--	--	--	--	--



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

(Dundigal-500043, Hyderabad)

B.Tech V SEMESTER END EXAMINATIONS (REGULAR) - DECEMBER 2022

Regulation:UG20

FUNDAMENTALS OF MULTIMEDIA

Time: 3 Hours

(INFORMATION TECHNOLOGY)

Max Marks: 70

Answer ALL questions in Module I and II

Answer ONE out of two questions in Modules III, IV and V

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

MODULE – I

- (a) Differentiate between multimedia vs hypermedia. Describe the basic characteristics of non-temporal media. [BL: Understand| CO: 1|Marks: 7]
- (b) Identify three novel applications of the internet or multimedia applications. Discuss why you think these are novel? [BL: Apply| CO: 1|Marks: 7]

MODULE – II

- (a) Describe the working mechanism of MP3 compression. Compare between the MPEG - 1 and MPEG - 2 compression techniques and identify the best compression technique. [BL: Understand| CO: 2|Marks: 7]
- (b) What is file compression? Why is it necessary to compress files? List the various features of JPEG 2000 standard and explain any one feature. [BL: Apply| CO: 2|Marks: 7]

MODULE – III

- (a) Illustrate the multimedia PC / work station architecture with suitable diagram. Enumerate the multimedia file system paradigms. [BL: Understand| CO: 3|Marks: 7]
- (b) Which real time scheduling algorithm uses deadline as its scheduling criteria? Apply resource scheduling with real-time considerations in multimedia. [BL: Apply| CO: 3|Marks: 7]
- (a) Explain the purpose of MMX technology needed. List the various characteristics of MMX instruction set. How many instructions are in MMX? [BL: Understand| CO: 4|Marks: 7]
- (b) How can IEEE 1394 interface be used for connecting multimedia devices to your system? Elucidate with an application. [BL: Apply| CO: 4|Marks: 7]

MODULE – IV

- (a) Discuss about image retrieval techniques. List the various techniques on audio retrieval process and explain anyone technique. [BL: Understand| CO: 5|Marks: 7]
- (b) Explain multimedia database. Classify the different types of multimedia applications based on data management characteristic. [BL: Understand | CO: 5|Marks: 7]

6. (a) Outline about video indexing and retrieval. Write the advantages and disadvantages of video-on-demand systems. [BL: Understand| CO: 5|Marks: 7]
- (b) Discuss the major motivation behind the development of MPEG-7? Give three examples of real-world applications that may benefit from MPEG-7. [BL: Apply| CO: 5|Marks: 7]

MODULE – V

7. (a) Summarize about haptic technology and explain the various types of haptic technologies. [BL: Understand| CO: 6|Marks: 7]
- (b) Mention the technologies needed to develop autostereoscopic 3D displays. List the different headmounted display devices and explain anyone application. [BL: Apply| CO: 6|Marks: 7]
8. (a) Write about the challenges of teleoperation systems. Explain the Telnet protocol as used for multimedia transmission. [BL: Understand| CO: 6|Marks: 7]
- (b) Elaborate the stereoscopic displays and their applications. Summarize about augmented reality systems and explain one AR application. [BL: Apply| CO: 6|Marks: 7]

