

# VII SEMESTER B.TECH. (COMPUTER SCIENCE AND ENGINEERING) PROCTORED ONLINE EXAMINATIONS, DECEMBER 2021

### SUBJECT: MULTIMEDIA TECHNOLOGIES (PROGRAM ELECTIVE-V)

## [CSE 4072]

#### REVISED CREDIT SYSTEM (17/12/2021)

Time: 75 Mins

MAX. MARKS: 20

#### Instructions to Candidates:

- Answer **ALL** the questions.
- ✤ Missing data, if any, may be suitably assumed.
- Write the answers on sheets of paper preferably on one side, scan all the sheets into a single pdf file, upload, Turn in /Hand in.
- Write your name, Registration number and put your signature on all the sheets

### PART B

Q.No	Question statement	Marks
1.A	<ul> <li>(i)Derive the bit rate and the memory requirements to store each frame that results from the digitization a 16CIF video format. Also find the total memory required to store a 1.5 hour conference video. Show all the steps clearly. The resolution of 16 CIF is Y=1440 X 1152</li> <li>Cb=Cr =720X 576</li> <li>Line sampling rate is 13.5 MHz for Y component and 6.75 for Cb and Cr components, all with 8 bits per sample</li> <li>(ii)Given a set of DCT coefficients and the quantization table as shown in Fig.Q 1.A, a) Determine the result of the quantization step of the JPEG compression method, applied to the block given in Fig. Q 1 A (i), using the quantization table given in Fig. Q 1.A.(ii).</li> <li>b) Calculate the quantization error for each of the DCT coefficients.</li> <li>c) Determine the result of the zig-zag step being applied to the quantized block.</li> <li>d) Determine the result of the run length encoding (RLE) step being applied to the zig-zag step's output.</li> </ul>	2 3

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2.A	Defin	ne syn	nchro	nizati	ion s	speci	fica	tion.	F	or the	e app	licati	on in	volv	ving	the m	nedia	objects	5
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2.B	Name the transport layer protocol used in Real Time Transport Protocol and list out	3
	the reasons for using it. Also describe how RTP creates its own timing and	
	synchronization mechanism in order to ensure ordering	
2.C	Define CDN? Discuss the similarities and differences between proxy caching and	2
	CDN. Is it beneficial to utilize both of them in a system? Justify your answer	