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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- May 2017

M. Tech II Semester

COURSE CODE: 10M11CI214 MAX. MARKS:35

COURSE NAME: Multimedia Systems

COURSE CREDITS: 03 MAX. TIME: 2 Hrs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Ques 1 [1.5+1.5+3=6 Marks] Define intra and inter object synchronization. Also discuss the hard and soft synchronization requirements? Further, explain the reference model for multimedia synchronization.

Ques 2 [3+3=6 Marks] Compare and contrast UDP and TCP with Real-time Transport Protocol (RTP)? Draw the sender, Source Description and BYE packet format in the Real time Control Protocol (RTCP) packet.

Ques 3 [1.5+4.5 =6 Marks] Discuss is the advantages of SVD in brief? Find singular value decomposition (SVD) of the image segment

$$\text{IMAGE 1} = \begin{bmatrix} 3 & 1 & 1 \\ -1 & 3 & 1 \end{bmatrix}$$

Ques 4 [1.5+4.5 = 6 Marks] Compare and contrast discrete wavelet transform and discrete cosine transform *(DCT) in brief?* Also mathematically proof that the small fluctuations feature, multi-resolution analysis, conservation & compaction of energy properties of Haar wavelet in brief.

Ques 5 [3+3 =6 Marks] Discuss the quality of service (QoS) concepts networked multimedia systems? Consider a frame relay network having a capacity of 1 Mb of data is arriving at the rate of 25 mbps for 40 msec.The Token arrival rate is 2 mbps and the capacity of bucket is 500 kb with maximum output rate 25mbps.Calculate 1.The burst length 2. The max burst length. 3. Total output time.

Ques 6 [5 Marks] Write the short note on following:

(a) K L Transforms

(b) ATM reference model