

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2EXAMINATION- 2025

B.Tech-V Semester

COURSE CODE (CREDITS): 18B1WCI532 (2)

MAX. MARKS: 25

COURSE NAME: Data Compression

COURSE INSTRUCTORS: Dr. Praveen Modi

MAX. TIME: 1:30 Hr

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	a. What are the fundamental constraints of Huffman Encoding technique?	2	2
	b. What will be the entropy of the message 'M', which is the composition of symbols (a, b, c), if $P(a) = 0.30$, $P(b) = 0.4$, $P(c) = 0.3$?	1	3
Q2	What will be the arithmetic code of the message 'JUIT' if $P(J) = 0.1$, $P(U) = 0.2$, $P(I) = 0.3$, $P(T) = 0.4$?	3	5
Q3	What will be the tunstall codes if $P(a) = 0.25$, $P(b) = 0.45$, $P(c) = 0.3$ using 3 bits?	3	5
Q4	a. What is the worst case performance of run length encoding technique?	2	2
	b. What will be the decoded binary message for the encoded message using the run length encoding technique "000011000011000001110011000110101010011" for $k=3$ bits?	2	3
Q5	What will be the 10 th index entry in the encoding table using LZ77 for message "bcababacbbcababacbabbbcbba"?	3	5