

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2024

B.Tech-V Semester (CSE/IT)

COURSE CODE (CREDITS): 18B1WCI532 (2)

MAX. MARKS: 25

COURSE NAME: DATA COMPRESSION

COURSE INSTRUCTORS: Dr. Praveen Modi

MAX. TIME: 1:30 Hr

*Note: All questions are compulsory. Marks are indicated against each question in square brackets. Write the answer of the question belonging to the same part in the same order.*

Q. No	Question	CO	Marks
Q1.	(a) Write the two satisfying conditions of Huffman Encoding technique?	1	2
	(b) Find the compressed message for string "INDEPENDENCE" using huffman encoding technique?	2	3
Q2	(a) Write the difference between burrows wheeler transform and move to front encoding method?	3	1
	(b) Find the encoded message and index value for string "REPUBLIC" using burrows wheeler transform method?	3	4
Q3	(a) Write the comparison between run length and tunstall encoding methods?	2	2
	(b) What will be the tunstall codes if $P(a) = 0.5$ , $P(b) = 0.3$ , $P(c) = 0.2$ using $n=3$ bits?	2	3
Q4	(a) Write the advantages of LZW method over LZ77 & LZ78 methods?	4	1
	(b) A sequence is encoded using the LZ77 algorithm. Given that $C(a) = 1$ , $C(b) = 2$ , $C(r) = 3$ , $C(t) = 4$ . Decode the following sequence of triples. $\langle 0, 0, 3 \rangle \langle 0, 0, 1 \rangle \langle 0, 0, 4 \rangle \langle 2, 8, 2 \rangle \langle 3, 1, 2 \rangle \langle 0, 0, 3 \rangle \langle 6, 4, 4 \rangle \langle 9, 5, 4 \rangle$ Assume that the size of the window is 20, the size of the look-ahead buffer is 10?	4	4
Q5	What will be the tag for string "BACA" if $P(A) = 0.5$ , $P(B) = 0.25$ , $P(C) = 0.25$ using arithmetic encoding method?	3	5