Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech., Summer 2018 - 19 Examination

Semester: 5 **Date: 21/05/2019**
Subject Code: 03114330 **Time: 10:30 am to 01:00 pm**
Subject Name: Data Compression **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions (All are compulsory) (Each of one mark) **(15)**

1. A Huffman code: A = 1, B = 000, C = 001, D = 01, P(A) = 0.4, P(B) = 0.1, P(C) = 0.2, P(D) = 0.3The average number of bits per letter is
   a) 2.0 bit b) 8.0 bit c) 1.9 bit d) 2.1 bit
2. What is Prefix Code?
3. What is Composite Source Model?
4. What is Look Ahead Buffer In LZ77 Approach?
5. What is external node in Huffman tree?
6. What is Fixed length code?
7. What is Data Compression?
8. Data Compression is possible because of _____.
   a) redundancy b)irrelevancy c) redundancy and irrelevancy both d) None of the above
9. What will be the value of e and r respectively for m=26 in adaptive Huffman coding?
   a) 4,10 b) 10,4 c) 6,20 d) 16,10
10. Write expression for l_5 and u_5 used in arithmetic coding.
11. What is Unary code representation?
12. _____ data compression techniques are used for text compression.
13. What is dangling suffix?
14. What is NYT?
15. Which model is ignorance model?
    a) markov model b) physical c) probability d) composite

Q.2 Answer the following questions. (Attempt any three) **(15)**
- A) Explain Modeling in brief.
- B) Explain Tunstall Coding with example.
- C) Explain CALIC.
- D) Explain Quantization.

Q.3 A) Encode "AERO_PLANE" using arithmetic coding. **(07)**
B) Encode "AABCDAD" using adaptive Huffman coding. **(08)**

OR

B) What is Predictive coding? Explain basic algorithm and Exclusion principle. **(08)**

Q.4 A) Encode "ABRACADABRADABRACA" using LZ77 Approach. **(07)**
Look Ahead Buffer size = 6, Search buffer size = 7.

OR

A) Encode "ABRACADABRADABRACA" using LZ78 Approach. **(07)**
B) Encode and Decode "BANANA" using MTF coding. **(08)**