JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-3 EXAMINATION- MAY 2019

B.Tech (CSE &IT)

COURSE CODE: 17B1WCI814   MAX. MARKS: 35

COURSE NAME: Design and Analysis of Real World Algorithms

COURSE CREDITS: 3   MAX. TIME: 2 Hr

Note: All questions are compulsory.

1. [3.5 + 3.5]
   a. Encode the string BABAABAAA by the LZW encoding algorithm.
   b. With the help of an example, explain the encoding and decoding process in LZ77 approach.

2. [3.5 + 3.5]
   a. What is the difference between a message authentication code and a one-way hash function? In what ways can a hash value be secured so as to provide message authentication?
   b. What are some threats associated with a direct digital signature scheme?

3. [3.5 + 3.5]
   a. How are congestion control and quality of service related? Name the policies that can prevent congestion?
   b. Write short note on TCP congestion control Algorithm.

4. [3.5 + 3.5]
   a. Briefly outline the major steps of decision tree classification? How is tree pruning useful in decision tree induction?
   b. Briefly outline two privacy preservation techniques.

5. [3.5 + 3.5]
Write short notes on:
a. Shannon-Fano coding
b. Arithmetic coding