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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- SEP 2019

B.Tech. VII & M.Tech. I Semester

COURSE CODE: 10M11CI111

MAX. MARKS: 15

COURSE NAME: Advance Data Structures

COURSE CREDITS: 03

MAX. TIME: One Hour

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

1. Explain the following terms?

[1+1+1+1+1=5 MARKS]

- Cuckoo hashing
- Universal Hashing
- Perfect Hashing
- Bloom filters
- Differentiate among linear and quadratic probing with an example

2. Draw the skip list of following items with their mentioned heads: 7 with head 2, 12 with head 1, 16 with head 0, 20 with head 2, 22 with head 1 and 30 with head 2. Find the algorithm and number of steps to search value '16' from the list. After adding all the values, insert a new value '25' with head 1 in the list.

[1.5+2+2=5.5 MARKS]

3. a) What are splay trees? Explain its advantages and disadvantages? [1.5+3=4.5 MARKS]

b) Create a splay tree of following items: {23, 21, 12, 19, 17, 16, 18, and 20}