PRN.

PAPER CODE U222-232 (ESE)

MAY 2022- ENDSEM EXAM
S.Y. B. TECH. (COMPUTER ENGINEERING)
(SEMESTER - II)
COURSE NAME: ADVANCED DATA STRUCTURE
COURSE CODE: CSUA22202
(PATTERN 2020)

[Max. Marks: 30]

Time: [1Hr]

Instructions to candidates:
1) Figures to the right indicate full marks.
2) 'a' part of every question is compulsory
3) Use of scientific calculator is allowed
4) Use suitable data where ever required

Q.1 a) Differentiate between Separate Chaining and Open   [4]
     Addressing Collision resolution techniques.

     b) Write a pseudo code for building MAX heap in data   [6]
     structure?

                              OR

     b) Using the hash function 'key mod 7', insert the
     following sequence of keys in the hash table 50, 700, 76,   [6]
     85, 92, 73 and 101. Use linear probing technique for
     collision resolution.

Q2   a) Demonstrate with a code, how a characters in text file   [4]
     can be copied to another text file using *FileInputStream*
     and *FileOutputStream*

     b) Show using code-snippets, how File Class is used to   [6]

(i) create a new file and print its length if it already exists

(ii) check for files and directories within a specified directory (say "/java") and print them on console, using *isDirectory()* and *isFile()* methods

OR

b) Serialization is the process of writing the state of an object to a byte stream. Why is it required? Write a code that shows serialization and deserialization of an object of a simple class.   [6]

Q.3 a) Discuss application of Heap data structure in Priority Queue implementation   [4]

b) State the data structure used to store Map and discuss suitable algorithm to find shortest path between two locations on map. Analyze the running time complexity of the algorithm   [6]

OR

b) Write pseudo-code for converting postfix expression to expression tree. Discuss it's time complexity.   [6]