

Total No. of Questions – [03]

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G.R. No.	
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PAPER CODE	U222-252(ESE)
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MAY 2022 (ENDSEM) EXAM
S.Y. INFORMATION TECHNOLOGY (SEMESTER - II)
COURSE NAME: DATA STRUCTURE AND FILES
COURSE CODE: ITUA22202
(PATTERN 2020)

Time: [1Hr]

[Max. Marks: 30]

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) Build max-heap for the given numbers. Show steps. [4]
 55, 33, 11, 77, 44, 22, 66, 88, 57
- b) Create Huffman's tree for given data set and find corresponding [6]
 Huffman's codes:

Data	a	e	i	o	u	s	t
Frequency	10	15	12	3	4	13	1

OR

- b) Construct an AVL tree by inserting 55, 66, 77, 15, 11, 33, 22, 35, 25, 44, [6]
88, 99. Show balance factor and type of rotation in each stage.

- Q2 a) Insert the following key values 6, 16, 26, 36, 46 on a B+ tree with order 3. [4]
 b) Illustrate with example the properties of Red and Black Trees. [6]

OR

- b) Compare AVL-tree and splay tree with suitable example. [6]

- Q.3 a) Write a pseudo code for inserting a record in index sequential file. [4]
 b) Compare sequential file, direct access file and index sequential from [6]
 complexity point of view.

OR

- b) Discuss fstream library classes and write any one example. [6]