

Total No. of printed pages = 3

**ECE 181502**

Roll No. of candidate

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02/01/2023

2022

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Azara, Hakhowpara,  
Guwahati - 781017

**B.Tech. 5<sup>th</sup> Semester End-Term Examination**

**ELE, ETE, PEIE**

**DATA STRUCTURE AND ALGORITHM**

**(New Reg & New syllabus)**

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks  
for the questions.

Answer question No. 1 and any *four* from the rest.

1. Answer the following (MCQ/Fill in the blanks) : (10 × 1 = 10)
- (i) A link list is a
- (a) Random access structure      (b) Sequential access structure  
(c) Both      (d) None of these
- (ii) Which type of linked list does not store NULL in next field?
- (a) Singly linked list      (b) Circular linked list  
(c) Doubly linked list      (d) All of these
- (iii) In a queue, insertion is done at
- (a) Rear      (b) Front  
(c) Back      (d) Top
- (iv) The circular queue will be full only when
- (a) FRONT = MAX-1 and REAR = Max-1  
(b) FRONT = 0 and REAR = Max-1  
(c) FRONT = MAX-1 and REAR = 0  
(d) FRONT = 0 and REAR = 0

[Turn over



6. (a) Write an algorithm to insert an element at the beginning of the STACK. (5)  
(b) Write an Algorithm to delete an element at the end of a singly linked list. (5)  
(c) Differentiate between an queue and a stack. (5)
7. Write short notes *any three*. (3 × 5 = 15)
- (a) Quenes
  - (b) Circular linked list
  - (c) Prim's algorithm
  - (d) Huffman tree
  - (e) File organisation

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