

**B.SC. (A & G) SEM. – II (OLD COURSE)(ANIMATION &  
GAMING) : WINTER - 2017  
SUBJECT : DATA STRUCTURES & ALGORITHMS**

Day : **Tuesday**

Time : **02.30 PM TO 04.30 PM**

Date : **19/12/2017**

**W-2017-0900**

Max. Marks : 40

---

**N.B.**

- 1) Attempt any **FIVE** questions.
  - 2) Figures to the right indicate **FULL** marks.
- 

- Q.1** List and explain various types of sorting techniques. Which is best? Justify your answer. **(08)**
- Q.2** Write an algorithm to sort a list of N integer elements using merge sorting method. Analyze the time complexity for the merge sort. **(08)**
- Q.3** Differentiate the functionality of Tree and Graph. Also describe pros and cons for each. **(08)**
- Q.4** Explain the structure and working of a Binary tree. Write an algorithm to add, insert and delete a node in a binary tree. Illustrate with diagram. **(08)**
- Q.5** Differentiate between the function and usage of Doubly Linked List vs. Circular Linked List. Illustrate using diagrams and applications. **(08)**
- Q.6** Write a menu driven program to implement a Queue by using Singly Linked List (SLL) i.e. dynamic implementation. **(08)**
- Q.7 a)** Explain the concept of 'Tree Traversal and its algorithms'. **(04)**
- b)** Draw flow chart to find Prefix from Infix expression. **(04)**

\* \* \*