

**S.Y.BCA Examination**  
*Octo* **2015**  
**Data and File Structure – 201**  
**Subject Code– 8431**

Time: 3 Hours

Total Marks: 100

- Q.1 Answer the following Questions**  
(A) What is Data structure? Explain types of data structure in detail. (10)  
(B) Explain representation of sparse matrix in detail. (10)  
**OR**
- Q.1 Answer the following Questions**  
(A) Explain algorithm analysis with time and space complexity. (10)  
(B) Write down applications, aims and goals of data structure. (10)
- Q.2 Answer the following Questions**  
(A) Explain quick sort with example and algorithm. (10)  
(B) Write down binary search algorithm with advantages. (10)  
**OR**
- Q.2 Answer the following Questions**  
(A) Explain shell sort with example and algorithm. (10)  
(B) Write down bubble sort algorithm with advantages. (10)
- Q.3 Answer the following Questions:**  
(A) What is linked list? Explain types of linked list in detail. (10)  
(B) Write down algorithms for stack operations. (10)  
**OR**
- Q.3 Answer the following Questions:**  
(A) What is queue? Explain types of queue in detail. (10)  
(B) Convert the following infix expression into postfix using stack. (10)  
 $(( (a + b) * (c + d) ) / ( (e - f) * (g - h) ) )$
- Q.4 Answer the following Questions**  
(A) Explain tree terminology. (10)  
(B) Write down algorithms for tree traversal methods. (10)  
**OR**
- Q.4 Answer the following Questions**  
(A) Explain basic operations on BST with example. (10)  
(B) Explain graph representation with example. (10)
- Q.5 Answer the following Questions**  
(A) Explain magnetic drum in detail. (10)  
(B) Explain sequential & index sequential file. (10)  
**OR**
- Q.5 Answer the following Questions**  
(A) Explain magnetic disk in detail. (10)  
(B) Explain concepts of field, record, file fixed and variable length record. (10)