

Total No. of Printed Pages—3

4 SEM TDC CSC G 1

2015

(May)

COMPUTER SCIENCE

(General)

Course : 401

(Data Structure with C++)

Full Marks : 48

Pass Marks : 19

Time : 2 hours

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

1. Answer the following :

1×6=6

- (a) Define object.
- (b) Write one difference between C and C++.
- (c) Define stack.
- (d) What is a pointer variable?
- (e) What is a binary tree?
- (f) Define queue.

P15—500/632

(Turn Over)

(2)

2. Answer the following :

2×6=12

- (a) What is the difference between encapsulation and polymorphism?
- (b) What are abstract data types? Give example.
- (c) Write the algorithm to push an element into the stack.
- (d) What is the difference between circular queue and double-ended queue?
- (e) Write the algorithm to traverse a doubly linked list.
- (f) Write the algorithm to perform sequential search.

3. Answer the following (any six) :

5×6=30

- (a) Explain with the help of example, the various loop control statements in C++.
- (b) Write the algorithm to perform binary search.
- (c) The following sequences the list of nodes of a binary tree *T* in preorder and inorder, respectively :

Preorder : G B Q A C K F P D E R H

Inorder : Q B K C F A G P E D H R

Draw the diagram of the tree.

- (d) Write the algorithm to insert a node at a particular location in a linked list.

(3)

- (e) Write a C++ program to perform selection sort.
- (f) What are the different string operations available in C++? Explain with example.
- (g) Write the algorithm to insert and delete a node from a binary search tree.
