

Reg. No.

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B.E. / B.TECH. DEGREE EXAMINATION, MAY 2017
SECOND SEMESTER

CS16202 – PROGRAMMING AND DATA STRUCTURES-I

(Common to CS and IT)

(Regulation 2016)

Q. Code: 231407

Time: Three hours

Maximum : 100 marks

Answer ALL questions

PART A - (10 X 2 = 20 marks)

1. Distinguish between break and continue statement.
2. Define null pointer.
3. Differentiate structures and union.
4. Define ADT
5. Why do you need a data structure?
6. What is the need for the header in a linear data structure?
7. List the applications of stacks.
8. Write the condition for queue underflow.
9. What are the two main classifications of sorting based on the source of data? Define them.
10. What do you mean by collision in hashing?

PART B - (5 X16 = 80 marks)

11. (a) Illustrate various control statement used in C with suitable examples. **(16)**
(OR)
(b) (i) Write a C program to print factorial of given number using function pointer. **(8)**
(ii) Explain the concept of function with variable number of arguments with suitable example. **(8)**
12. (a) (i) Write a C program using structure to perform addition of two complex number. **(8)**

- (ii) Write a C program to subtract two complex numbers using structures. (8)

(OR)

(b) Write a C program to perform following file manipulation. (16)

Create a binary file with the name of product.bin and the product is having the details of id, name and cost.

Insert new product with new id.

Display the costliest product details.

13. (a) (i) Write an ADT to have insert and delete operation in singly linked list. (8)

(ii) Write an ADT for create operation in doubly circular linked list. (8)

(OR)

(b) Write a C program to add two polynomial using linked list. (16)

14. (a) (i) Write a stack ADT for PUSH() and POP() operation using array. (8)

(ii) Convert infix to postfix: $a+b*c+(d*e+f)*g$. (8)

(OR)

(b) Write a C program to implement circular queue operations using array. (16)

15. (a) Write an algorithm to sort N number using quick sort and sort the following numbers: 83,14,26,4,64,97,32,68,51,9 using quick sort. (16)

(OR)

(b) Explain various collision resolution techniques in hashing. (16)