

[A38]

SARDAR PATEL UNIVERSITY
EXTERNAL EXAMINATION

F.Y.B.C.A. – 2nd Semester (Under CBCS)

SUBJECT: US02CBCA01 - Advanced C Programming and Introduction to Data Structure

DATE: 08/04/2015

TIME: 02:30 PM to 05:30 PM

TOTAL MARKS: 70

Q – 1 Select the correct answer for the followings:

[10]

1. _____ defines a pointer variable to an integer.
(A) int &ptr; (C) int **ptr;
(B) int *ptr; (D) int &&ptr;
2. _____ is not a C memory allocation function.
(A) malloc() (C) calloc()
(B) realloc() (D) alloc()
3. _____ is not a derived data type.
(A) Arrays (C) Pointers
(B) Float (D) Structure
4. _____ is valid for opening a file for only reading purpose.
(A) fopen (filenm, "r"); (C) fopen (filenm, "r");
(B) fopen (filenm, "ra"); (D) fopen (filenm, "read");
5. _____ data structure store the homogeneous data elements.
(A) Arrays (C) Pointers
(B) Records (D) None of these
6. Files are a _____ type of Data Structure.
(A) linear (C) non - primitive
(B) primitive (D) none of these
7. A storage representation of a linked list in a memory is _____.
(A) Linear (C) Both (A) and (B)
(B) Non-linear (D) Either (A) or (B)
8. A data structure that contains not only a data field but also contains pointer field is known as _____.
(A) Queue (C) Tree
(B) Stack (D) Linked List
9. Given the definitions shown below, _____ answer is not valid.
int i; float f; int *pd; float *pf;
(A) pd = pf; (C) i = 5;
(B) pd = &i; (D) pf = &f;
10. _____ used to create a new type that can be used anywhere a type is permitted.
(A) typedef (C) struct
(B) Array (D) None of these

Q – 2 Write answer for the followings: (ANY TEN)

[20]

1. List out benefits of pointers.
2. What is scale factor? Explain with example in brief.
3. Explain realloc() function.
4. Write difference between '.' and '->' operators.
5. List files modes available to manage the file in C with its meaning.
6. Write difference between printf and fprintf
7. List out different applications of data Structure.
8. List main operations that can be performed on data structure.
9. What do you mean by top and bottom of a stack?
10. Write difference between stack and queue.
11. Write advantages and disadvantages of linked list.
12. What is a circular linked list? How it is represented?

- Q – 3 [A] Define pointer variable. How can we declare and initialize pointer variable? [6]
How can we access value of variable through pointer type variable?
- [B] Write difference between malloc() and calloc(). [4]
- OR**
- Q – 3 [A] Explain the importance of pointers in functions by taking suitable example. [6]
How pointers can be used to return multiple values to functions?
- [B] Write note on: pointer to pointer. [4]
- Q – 4 [A] What is structure? Explain its definition, declaration and assigning values to [6]
members of structure.
- [B] Explain array within structures using suitable examples. [4]
- OR**
- Q – 4 [A] What is union? Explain its storage representation. How a member of union is [6]
assigned an initial value? Explain in brief with example.
- [B] List out different types of file handling functions And explain any two of them [4]
with syntax and example.
- Q – 5 [A] Write an algorithm for push and pop operation on stack. [6]
- [B] Write down advantages of data structure. [4]
- OR**
- Q – 5 [A] What is stack? Write an algorithm for peep and change operation on stack. [6]
- [B] Explain classification of data structure in detail. [4]
- Q – 6 [A] What is queue? List types of queue. And write algorithms for insert an element [10]
into a simple queue and delete an element from simple queue.
- OR**
- Q – 6 [A] What is linked list? List types of linked list. And write an algorithm for insert [10]
new node at beginning of a singly linked list and for insert new node in sorted
of a singly linked list.

===== Best of luck =====