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DISTANCE EDUCATION

B.C.A. DEGREE EXAMINATION, MAY 2019.

First Semester

C AND DATA STRUCTURE

(CBCS 2018 – 19 Academic year onwards)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are reserved words?
2. What is the difference between the = symbol and = symbol?
3. What is meant by a static variable?
4. When to use the -> (arrow) operator?
5. What is a nested structure? Give an example.
6. What are bit fields?
7. What is a queue? What are the two ends of it?
8. Draw a doubly linked list with four nodes preceded by a head node.
9. Define Tree.
10. Give an example for a complete binary tree.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).

11. (a) With examples, explain the hierarchy of operations for evaluating an arithmetic expression.

Or

- (b) With a flowchart, explain the functionality of 'for' loop.

12. (a) With an example, explain the concept of call-by-reference.

Or

- (b) How to do pointer arithmetic? Explain with an example.

13. (a) Write short notes on
- (i) Self referential structure
 - (ii) Enumeration

Or

- (b) Bring out the differences between :
- (i) Text file and binary file
 - (ii) Sequential and random files

14. (a) Write the procedures for push and pop operations.

Or

- (b) What does Polish Notation mean? Explain with an example.

15. (a) What is a binary tree? Draw a binary tree for the following infix expression: $A / B ** C * D + E$.

Or

- (b) Write a procedure to add an element into a binary search tree.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain any five classes of operators used in C.
17. Write a C program to arrange the given numbers in decreasing order.
18. With a program segment, explain how to copy the contents of one file into another.
19. Write down the procedures for the following:
- (a) To bifurcate a linked list into two.
 - (b) To insert a node into an existing list
20. What is meant by traversal? Explain any two binary tree traversals with examples.

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DISTANCE EDUCATION

B.C.A DEGREE EXAMINATION, MAY 2019.

First Year — Second Semester

Computer Applications

PROGRAMMING IN C++

(CBCS 2018-19 Academic Year onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define : Object.
2. Give the structure of C++ program.
3. What is meant by destructor? Give an example.
4. Define : Copy constructor. Write the syntax.
5. What is meant by “this” pointer?
6. Distinguish between static and dynamic binding.
7. Define get() function.
8. Give an example for command line argument.
9. Define : Templates.
10. List down any five exceptions.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the various data types used in C++.

Or

- (b) In how many ways arguments can be passed to a function? Explain.

12. (a) Write a note on classes and objects.

Or

- (b) Briefly write about type conversion.

13. (a) Define : inheritance. Explain its types with example.

Or

- (b) Discuss about virtual functions with examples.

14. (a) Explain about various file modes.

Or

- (b) How will you handle errors during file operations? Discuss.

15. (a) Describe about multiple arguments function template with an example.

Or

- (b) Write a program to handle arithmetic exception.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Elaborately write about object oriented programming concept.
 17. What is constructor? Discuss about constructor types.
 18. Elucidate about dynamic memory allocation using pointers.
 19. Discuss about file stream operations.
 20. Illustrate the concept of exception handling.
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