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MIDTERM EXAMINATION 2023

Class: II PUC
Subject: COMPUTER SCIENCE (41)

Max. Marks: 70
Time: 3 hr. 15 mins.

PART – A

Answer all the questions. Each question carries one mark. 1 x 20 = 20

1. Select the correct answer from the choices given: *(Repeated answers will not be considered)*

1. Boolean algebra deals with _____
   a) Binary numbers
   b) Decimal numbers
   c) Octal numbers
   d) hexadecimal numbers
2. The other name of NOT gate is _____
   a) Neglect gate
   b) inverter gate
   c) XOR gate
   d) XNOR gate
3. _____ is an instance of a class
   a) Data members
   b) member function
   c) Objects
   d) access specifiers
4. Pointers is used to store_____
   a) Memory address
   b) value
   c) Data
   d) information
5. Function referred in a class are called _____
   a) Data members
   b) member function
   c) Class functions
   d) sub functions
6. _____is the extension of HTML files.
   a) .xml
   b) .html
   c) .txt
   c) .xls
7. Hardware device used to connect several computers together is _____
   a) repeater
   b) modem
   c) Hub
   d) Ethernet card
8. Constructor must be declared in _____section.
   a) public
   c) private
   b) Protected
   d) anywhere inside the class.

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9. Inline function should be defined _____
   a) Before all function
   b) after all function
   c) Outside class
   d) anywhere in a program

10. Memory allocated during runtime is _____ memory allocation
   a) Compile time
   b) dynamic
   c) Static
   d) none of the above

11. Virus spread through _____
   a) Network
   b) e mail
   c) Foreign disk
   d) all the above

12. Operator used to access members of class
   a) ::
   b) :
   c) .
   d) "

13. A K-map of n variables is made up of
   a) 2^n b) 3^n c) 4^n d) 5^n

14. HTML stands for _____
   a) Hyper Text Makeup Language
   b) Hyper Text Markup Language
   c) Hyper Text Marking Language
   d) Hyper Text Marker Language

15. XML is used to_____
   a) Display the data
   b) design the webpage
   c) Describe the data
   d) all the above

II. Fill in the blanks choosing the appropriate word/words from those given in brackets.

(Repeated answers will not be considered)

(C2C, Private, Data members, Constructor, Declaring)

16. Variables declared inside the class is called_____
17. Friend keyword is required while_____ function.
18. _____is the exchange of services, information or products between two consumers..
19. Function which initializes object of a class automatically is_____.
20. _____access specifier is implicitly used in class.

PART – B

III. Answer any FOUR questions. Each question carries two marks. **2 x 4 = 8**

21. Prove algebraically that $(x + xy) = x$.
22. State and prove one demorgan's theorem using truth table .
23. Write the standard symbol and truth table for 3 input NAND gate.
24. Mention any two advantages of OOP's.
25. What is the use of scope resolution operator? Give the symbol.
26. What are the communication modes? Explain any one.

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27. What is copy constructor? Write any one feature of it.
28. What is pointer? Give the syntax for pointer declaration.

PART – C

IV. Answer any FOUR questions. Each question carries three marks. **3 x 4 = 12**

29. Write the difference between static memory allocation and dynamic memory allocation.
30. Write computer prevention methods.
31. What is web scripting? Mention its types.
32. Write the advantages of E-Commerce.
33. What is destructor? Give the syntax and example to define destructor.
34. What are the advantages of pointers?
35. Explain the general structure of HTML.
36. Write the difference between LAN and WAN.

PART – D

V. Answer any FOUR questions. Each question carries five marks. **5 x 4 = 20**

37. Explain the characteristics of OOP's.
38. Give the Boolean function $F(A,B,C,D) = \sum(1,2,4,5,9,11,12,13)$. Reduce it by using Karnaugh map (K-Map).
39. Give the Boolean function $F(A,B,C,D) = \pi(0,1,3,6,10,13,14,15)$. Reduce it by using Karnaugh map (K-Map).
40. Explain default constructor with syntax and example.
41. Write the general syntax for defining and declaring a class with programming example.
42. Write the types of inheritance. Explain any four.
43. Write a note on network topologies.
44. Explain function overloading with programming example.

PART – E

VI. Answer any TWO questions. Each question carries five marks. **5 x 2=10**

45. Explain friend function with programming example.
46. Explain network securities in detail.
47. Explain single level inheritance with a programming example.

*******ALL THE BEST*******

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