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DAY - **16**

SEAT NUMBER

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2022	III	23	1030	V - 134	(E)
COMPUTER SCIENCE PAPER - I (D-9)					
Time : 3 Hours		4 Pages		Max. Marks : 50	

- Instructions :*
- (1) All questions are compulsory.
 - (2) Figure to the right indicate full mark.
 - (3) Use of any type of calculator not allowed.
 - (4) Draw a neat diagram wherever necessary.

1. (A) Select the correct alternative and rewrite the following :
- (a) _____ is the only operating system from the following list. 1
 - (i) MS point
 - (ii) Unix
 - (iii) MS Excel
 - (iv) Oracle
 - (b) The maximum number of nodes in a binary tree of depth 6 is _____. 1
 - (i) 64
 - (ii) 32
 - (iii) 63
 - (iv) 6
 - (c) A derived class with several base classes is _____ inheritance. 1
 - (i) Multiple
 - (ii) Hierarchical
 - (iii) Single
 - (iv) Multilevel

- (d) An attribute which defines URL of document to be linked in <A> tag is _____ . 1
- (i) RFF
 - (ii) VREF
 - (iii) HREF
 - (iv) ALT

(B) Answer **any two** of the following :

- (a) Explain context switching at process level in multiprogramming system with example. 3
- (b) Explain memory representation of linked list with a suitable example. 3
- (c) Write any six rules for virtual functions. 3

2. (A) Answer **any two** of the following :

- (a) Explain the function of the following file stream classes : 3
 - (i) ifstream
 - (ii) ofstream
 - (iii) fstream
- (b) What is a Record ? Write any two distinguishing points between a Record and Linear Array. 3
- (c) What is a Computer Virus ? State any four methods by which a virus can affect other programs. 3

(B) Answer **any one** of the following :

- (a) Explain binary search algorithm. 4
- (b) Explain the following terms with respect to virtual memory : 4
 - (i) Page fault
 - (ii) Working set
 - (iii) Demand paging
 - (iv) Dirty bit

3. (A) Answer **any two** of the following :

- (a) Define the following terms with respect to binary tree : 3
- (i) Depth of tree
 - (ii) Degree of node
 - (iii) Empty or Null tree
- (b) What is Destructor ? State any four characteristics of Destructor. 3
- (c) Explain the following HTML tags with an example of each : 3
- (i) <PRE>
 - (ii)

 - (iii) <SUB>

(B) Answer **any one** of the following :

- (a) What is a Process ? Explain running, ready and blocked process states of process management. 4
- (b) What is an Inheritance ? Explain any three types of Inheritance in brief with suitable diagrams. 4

4. (A) Answer **any two** of the following :

- (a) Explain in brief the three major services provided by Operating System. 3
- (b) Writing any six important features of object oriented programming. 3
- (c) Draw a binary tree structure for expression : 3
- $$E = (p - q) / [(r \# s) + t]$$

(B) Answer **any one** of the following :

- (a) Explain call by value and call by reference with suitable examples. 4
- (b) Draw and explain paging model of memory management system. 4

5. Answer **any two** of the following :

- (a) Write C++ program to find a factorial of integers from 1 to 5. 5
- (b) Write a C++ program to count and print occurrence of the character 'M' in a given string of maximum 79 characters. 5
- (c) Write HTML code for the following output : 5
 - Computer
 - A. Hardware
 - i. Printer
 - ii. Monitor
 - B. Software
 - i. C++
 - arrays
 - pointers
 - ii. Java

OR

5. Attempt **any two** of the following :

- (a) Write C++ program to read any integer and then check whether it's prime or not prime no. 5
- (b) Write C++ program to generate and print first 15 terms of fibonacci series (1, 1, 2, 3, 5.....) 5
- (c) Write HTML code for the following table : 5

		C++
	Java	HTML
VB	C	PASCAL

DAY - **18**

SEAT NUMBER

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2022

III

25

1030

V - 168

(E)

COMPUTER SCIENCE

PAPER - II (D-9)

Time : 3 Hours

4 Pages

Max. Marks : 50

- Instructions :*
- (1) All question are compulsory.
 - (2) Figures to the right indicate full marks.
 - (3) Draw neat diagram wherever necessary.
 - (4) Use of any type of calculator is not allowed.
 - (5) Comments are must in assembly language program.

1. (A) Select the correct alternative and rewrite the following :

- (a) 8085 Microprocessor consist of _____ general purpose registers. **1**
- (i) 4
 - (ii) 6
 - (iii) 8
 - (iv) 16.
- (b) _____ is not an example of logical operation of 8085 Microprocessor. **1**
- (i) Rotate
 - (ii) Complement
 - (iii) Increment
 - (iv) Compare
- (c) 8051 is a _____ bit microcontroller. **1**
- (i) 4
 - (ii) 8
 - (iii) 32
 - (iv) 16

- (d) Bandwidth of telephone line is _____ 1
- (i) 3 to 4 KHz
 - (ii) 30 to 40 KHz
 - (iii) 10 to 100 KHz
 - (iv) 50 to 80 KHz

(B) Answer **any two** of the following :

- (a) Explain following registers of 8085 Microprocessor : 3
- (i) Instruction Decoder
 - (ii) Temporary Register
 - (iii) Stack Pointer
- (b) What do you mean by Interrupt ? Explain Software Interrupt. 3
- (c) Explain the programming model for 32-bit version of x-86 family with suitable diagram. 3

2. (A) Answer **any two** of the following :

- (a) Compare Microcontroller with Microprocessor. 3
- (b) What do you mean by Modem ? Explain its types. 3
- (c) Explain following pin's of 8085 Microprocessor : 3
- (i) \overline{SID}
 - (ii) HOLD
 - (iii) $\overline{IO/\overline{M}}$

(B) Answer **any one** of the following :

- (a) What do you mean by Flag Register ? Explain its bit pattern by giving an example. 4
- (b) Explain any four characteristics of Co-axial Cable. 4

3. (A) Answer **any two** of the following :
- (a) Explain following instructions of 8085 Microprocessor. 3
 - (b) Explain following addressing modes of 8085 Microprocessor : 3
 - (i) Immediate Addressing
 - (ii) Register Indirect Addressing
 - (iii) Direct Addressing
 - (c) The Accumulator contains the data 76H and the register L contains the data A6H. What will be the contents of accumulator in hex after execution of each of the following instruction independently : 3
 - (i) ORA L
 - (ii) ANA L
 - (iii) RRC
- (B) Answer **any one** of the following :
- (a) Compare the characteristics of UTP Cable and STP Cable. 4
 - (b) Flag Register contains data D9H. Interpret its meaning. 4
4. (A) Answer **any two** of the following :
- (a) . Write the addressing mode of following instructions : 3
 - (i) RAL
 - (ii) STA C500 H
 - (iii) ADD C
 - (iv) MVI B, 55 H
 - (v) MOV M, A
 - (vi) INR A
 - (b) What is Microprocessor ? Write features of 8085 Microprocessor. 3
 - (c) Explain LAN, WAN and MAN 3
- (B) Answer **any one** of the following :
- (a) Explain any four advantages and four application of Microcontroller. 4
 - (b) Explain Repeater and Router. 4

5. Answer **any two** of the following :

(a) A block of data is stored in memory location from C101H to C10AH. Write an Assembly Language Program to transfer the block in reverse order to memory location C200H and onward. 5

(b) Write an Assembly Language Program to find the product of two numbers stored in memory location C005H and C006H. Store the result in C000H and C001H. 5

(c) Write an Assembly Language Program to add two BCD number stored at location 2500H and 2501H. Place the BCD result in location 2502H and onward starting with LSB. 5

OR

5. Answer **any two** of the following :

(a) Write a subroutine to fill the memory location 2501H to 25FF H with Hex number 01H to FFH. 5

(b) A Hex number is stored at location 2100H. Write an Assembly Language Program to interchange its digit, the new number is to be stored in 2105H. Add original number with new number and store the result at location 2105H. 5

(c) Write an ALP to count the number of odd data byte occurring in a block, starting from memory location 2501H to 25FFH. Store the result at the memory location 2600H. 5

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