

2021

# COMPUTER SCIENCE

(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three hours

*All the questions are compulsory.*

*The figures in the right margin indicate full marks for the questions.*

*Select the correct answers from each of the following and rewrite it.*

1. Software which converts an assembly language program into a machine language program is known as – 1

- A. Assembler
- B. Loader
- C. Compiler
- D. Interpreter

2. There is an error in the following code segment :

```
char c ;  
float avg ;  
avg=c ;
```

What type of error is – 1

- A. Syntax Error
- B. Logical Error
- C. Run-time Error
- D. Semantic Error

3. The output of the following code segment is – 1

```
void main()  
{  
    int p, x=20, y=10;  
    p=(++x)*(y++);  
    cout<<p;  
}
```

- A. 200
- B. 210
- C. 220
- D. 231

4. Which is not a jump statement ? 1

- A. goto
- B. break
- C. return
- D. switch

5. The binary number 101.01 can be represented as – 1

- A.  $10101 * 2^{-2}$
- B.  $10101 * 2^{-1}$
- C.  $10101 * 2^1$
- D.  $10101 * 2^0$

*Give the very short answer of the following questions :*

6. Give one example of GUI operating system. 1
7. Differentiate between spooling and Buffering. 1
8. What is need for programming Methodology ? 1
9. What is the role of compiler ? 1
10. Write the syntax of do-while loop. 1
11. What would be the output of the following if initially  $k=10$ ,  $++k==10$ . 1
12. Suppose num1 and num2 are two variables of type double, How will you add these two variables so that the resultant is an integer value ? 1
13. Draw the flow chart of if-else statement. 1
14. Define parity bit ? 1
15. What is Microprocessor ? 1

*Give short answer of the following questions :*

16. Draw the block diagram of a computer system. 2
17. What are the characteristics of a good program ? 2
18. Differentiate between finite and infinite loop. 2
19. Differentiate between keyword and identifier. 2
20. What is type compatibility ? 2
21. Differentiate between continue and break statement. 2

22. Rewrite the following program segment using ladder if-else statement : 2

```
switch(x){  
    case 1:  
        cout<<"x is 1";  
        break;  
    case 2:  
        cout<<"x is 2";  
        break;  
    default:  
        cout<< " value of x is known";  
}
```

23. Express the following in two's complement form : 2

i. 42

ii. -25

24. Define the following : 2

i. Access time

ii. Buffer

25. Differentiate between address bus and data bus. 2

*Give answer of the following questions :*

26. Give logical expressions to represent the following conditions : 3

(i) N is even but less than 20

(ii) Weight is greater than or equal to 50 but less than 70

(iii) Ch is upper case letter

**OR**

What would be the output of the following code segment :

3

```
int val, res, n=500 ;
```

```
cin>>val ;
```

```
res = n + val > 2250?600 : 300 ;
```

```
cout<<res ;
```

(i) If the input is 2500

(ii) If the input is 2000

(iii) If the input is 500

27. Write a C++ program that print the series 1+2+3..... +100 and its sum.

3

**OR**

Write a C++ program that finds the factorial of a number.

3

28. How do you declare and initialize one dimensional array ?

3

**OR**

Differentiate between while and do-while loop.

3

29. What is two dimensional arrays ? Write the general form of a two dimensional array. What is the use of two dimensional arrays ?

3

**OR**

What does the following library functions do in C++? 3

i. isdigit ( )

ii. tolower( )

iii. strcmpi( )

30. Write a C++ program to print the following output: 3

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

**OR**

Write a C++ program to print the following output : 3

5 5 5 5 5

4 4 4 4

3 3 3

2 2

1

*Give the answer of the following questions :*

31. What is software ? Name the software which manages the operation of the computer. State the three different types of Application Software. 5

**OR**

What is operating System ? What are the functions of operating system ? 5

32. Write a C++ program to find the largest and smallest element in an array. 5

**OR**

Write a C++ program that reads a string and count the number of words, vowels, consonants and white spaces present in the string. 5

33. Write a C++ program that compute the sum of diagonal elements of a square matrix. 5

**OR**

Write a C++ program that compute the sum of each row and column of a matrix. 5

34. Explain Uninterruptable Power Supplies (UPS). 5

**OR**

Explain two basic types of RAM. 5