

2023

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. Which of the following memory has a very high speed? 1
 - (A) RAM
 - (B) ROM
 - (C) CACHE
 - (D) PROM

2. The process of detecting and removing error is called – 1
 - (A) Analysing
 - (B) Coding
 - (C) Testing
 - (D) Debugging

P.T.O.

3. The value of `math.floor(-4.5)` is – 1
- (A) - 4
 - (B) - 5
 - (C) 4
 - (D) 5
4. Which of the following is incorrect? 1
- (A) Strings are immutable
 - (B) Lists are mutable
 - (C) Tuples are mutable
 - (D) Dictionaries are mutable
5. Cloud services can be – 1
- (A) Infrastructure as a service(IaaS)
 - (B) Platform as a service(PaaS)
 - (C) Software as a service(SaaS)
 - (D) All of the above

Give the very short answer of the following questions :

6. Give the full form of ASCII. 1
7. Convert $(25D)_{16}$ to binary number. 1
8. Define an algorithm. 1
9. What is the purpose of a compiler? 1
10. Differentiate between break and continue statement. 1

11. Write the use of range statement in python. 1
12. What is dictionary ? 1
13. Write the built in function to create an empty list. 1
14. What are the Intellectual property ? 1
15. Give an example of cyber crime. 1

Give short answer of the following questions :

16. What are the functions of operating system ? 2
17. Write the pseudocode to find the area and circumference of a circle whose radius is r. 2
18. Draw the flowchart to print and sum the first n natural numbers. 2
19. Write the syntax of selection statement using elif. 2
20. Find the output of the following when a=2, b=3, c=4 2
 - (a) $a ** = b + c$
 - (b) $a = 22 // 5 + 3$
21. Write the logical expressions corresponding to the following statements in python. 2
 - (a) either height is more than 5 or weight is less than 70
 - (b) num is between 10 and 30 but not equal to 20
22. Write any two benefits of using function in a python program. 2
23. Give the two advantages of tuples over lists. 2

24. Traverse the following list by using for loop. 2

List1 = [10, 12, 15, 20, 30]

25. What are the characteristics of big data ? 2

Give answer of the following questions :

26. What are the data types in python ? 3

27. Write the while loop to print the following : 3

1, 4, 9, 16, 25, 36

28. Write a user defined function power() to find the value of a to the power n. 3

29. Consider the following tuple. 3

Tuple1 = (10, 20, 30, 40, 50, 60, 70)

Find the output of the following statements :

(a) print(tuple1[2:5])

(b) print(tuple1[:4])

(c) print(tuple1[4:])

30. Explain the three identity theft. 3

31. What are the components of a computer system? Explain them. 5

32. Write a python program to find the biggest of any three numbers. 5

33. Write a python program to print the first n term of the Fibonacci series. 5

34. Write a python program to count the number of vowels and consonants in a string. 5