Total number of printed pages: 3

NB/XII/CSC/1

2023

COMPUTER SCIENCE

Total marks: 70 Time: 3 hours

General instructions:

- *i)* Approximately 15 minutes is allotted to read the question paper and revise the answers.
- ii) The question paper consists of 29 questions. All questions are compulsory.
- iii) Marks are indicated against each question.

N.B: Check that all pages of the question paper are complete as indicated on the top left side.

```
1. What are identifiers?
                                                                               1
 2. For a string strl, what is strl [3:]?
                                                                               1
 3. What is relative path?
                                                                               1
 4. What is matplotlib?
                                                                               1
 5. What is a data structure?
                                                                               1
 6. Define stack.
                                                                               1
 7. What are the ways IP4V can be expressed?
                                                                               1
 8. What is carrier sensing?
                                                                               1
 9. What are the types of messages in HTTP?
                                                                               1
10. What is the purpose of SELECT statement in MySQL?
                                                                               1
11. What is Plagiarism?
                                                                               1
12. What is cyber stalking?
                                                                               1
13. What will be the output of the given program?
                                                                               2
      def fun3 (a):
           print ( ' In fun' )
           print ( 'a=' , a)
           a=a+3
           print ( 'a=' ,a)
      a=5
      print ( 'a=', a)
      fun3 (a)
      print ( 'Back' )
      print ( 'a=' , a)
```

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14.	Give two reasons why file handling is required.	2
15.	What is the difference between Iterative and recursive algorithm?	2
16.	Differentiate between primary and secondary data structures. Give examples.	2
17.	Mention two disadvantages of peer to peer networks.	2
18.	Differentiate between Software as a Service (SaaS) and Platform as a Service (PaaS).	2
19.	Explain the use of UPDATE statement in MySQL. Write the syntax of the UPDATE statement.	2
20.	What is Django? How can one find if Django has been installed?	2
21.	Write the steps to create a database in Python using the SQL connector.	2
22.	What is Intellectual Property?	2
23.	Differentiate between E-mail Phishing and Spear Phishing.	2
24.	Answer any three from the following questions (a) to (f). $3 \times 4 =$ (a) Mention any four advantages of using a function.	12
	(b) What is recursion? Write a Python program to calculate the factorial of a number using recursion.	
	(c) What is linspace function? Explain the parameters used in linspace function	n.
	(d) Explain any four aggregate functions of numpy module.	
	(e) What are the characteristics of an algorithm?	
	(f) Define the following terms: (i) Algorithm (ii) Big O : O() (iii) Omega : Ω () (iv) Theta : Θ	0
25.	a. Write an algorithm to convert an infix expression to postfix. Or	4
	b . Convert $a + b*(c-d)/f$ to postfix and show each steps of conversion.	-
26.	Answer any two from the following questions (a) to (d). 2×4	= 8
	(a) Describe the different types of cloud computing.	
	(b) How do one find a class of an address given in the binary notations?	
	(c) Define the following: i) Signal iii) Carrier signal iv) Modulated signal	

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(d) Explain the following layers of the OSI protocol suite.

i) Data link layer

ii) Network layer

iii) Transport layer

iv) Session layer

27. State the syntax of the following terms:

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i) GROUP BY clause

ii) Having clause

iii) min()

iv) max()

28. a. Mention some important characteristics of Django.

Or

4

b. Mention some advantages of Django.

29. **a.** State the cases where in the IT Act is not applicable.

Or

4

b. Mention the scenario that may lead to Plagiarism.
