

Self Assessment Paper-4

COMPUTER SCIENCE

Class-XII, Session: 2023-24

Unsolved

Time Allowed: 3 hours

Maximum Marks: 70

General Instructions:

- (i) Please check this question paper contains 35 questions.
- (ii) The paper is divided into 5 Sections-A, B, C, D and E.
- (iii) Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
- (iv) Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
- (v) Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
- (vi) Section D, consists of 2 questions (31 to 32). Each question carries 5 Marks.
- (vii) Section E, consists of 3 questions (33 to 35). Each question carries 4 Marks.
- (viii) All programming questions are to be answered using Python Language only.

Section – A

1. State True or False:

The csv module needs to be imported to work with csv files.

[1]

2. Jack wants to put a constraint on a field "Marks" of his "Result" table so that negative marks cannot be entered. Which constraint he has to use?

- (A) NOT NULL (B) UNIQUE (C) Default (D) Check [1]

3. The expression :

$225 * 0.5 + 12 // 5 + 16 \% 7 - 2$ evaluates to:

- (A) 17.0 (B) 17.28 (C) 16 (D) 0 [1]

4. What is the output of the following code

```
my_list = ["Python", "Language"]
print("-".join(my_list))
```

- (A) Python- Language (B) Python Language-
(C) -PYTHONLANGUAGE (D) None of these [1]

5. Which of the following is not an aggregate function?

- (A) AVG (B) MAX (C) JOIN (D) COUNT [1]

6. In which of the following a dedicated line between the sender and receiver is established before transmission starts?

- (A) Circuit switching (B) Packet switching
(C) Virtual switching (D) Message switching [1]

7. What is the output when the following code is executed?

```
print(r"\nhello")
```

- (A) a new line and hello (B) \nhello
(C) the letter r and then hello (D) Error [1]

8. Given :

```
s="Lionistheking"
sl="Parrotispretty"
```

The expression :

`print(s[1:4].capitalize() + s1[1:7:2])` displays :

- (A) ionart (B) Ionart (C) IONart (D) None of these [1]

9. Which of the following statement is incorrect in the context of pickled binary files?

- (A) csv module is used for reading and writing objects in binary files.
 (B) pickle module is used for reading and writing objects in binary files.
 (C) load() of the pickle module is used to read objects
 (D) dump() of the pickle module is used to write objects [1]

10. Name the Python Library modules which need to be imported to invoke the ceil() function :

- (A) pickle (B) random (C) math (D) statistics [1]

11. Fill in the blank

Router in a network _____

- (A) Forwards a packet to all outgoing links
 (B) Forwards a packet to the next free outgoing link
 (C) Determines on which outgoing link a packet is to be forwarded
 (D) Forwards a packet to all outgoing links except the originated link [1]

12. The function that reads all the lines of a text file with each line as a list item is :

- (A) read() (B) readline() (C) tell() (D) readlines() [1]

13. State True or False:

Trying to open a file that does not exist , raises an exception. [1]

14. Which clause is used with order by clause to arrange in descending order?

- (A) reverse (B) desc
 (C) ascendingReverse (D) (B) or (C) [1]

15. Fill in the blank

Google Chrome is a _____ . [1]

16. The module to be imported for using the text file handling functions – read(), write() etc. is:

- (A) textmodule (B) txtmodule
 (C) operation module (D) No module required. [1]

Assertion and Reason:

In the following questions, A statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as.

- (A) Both A and R are true and R is the correct explanation of A.
 (B) Both A and R are true and R is not correct explanation of A.
 (C) A is true but R is false.
 (D) A is false but R is true.

17. Assertion (A): CSV stands for comma separated value.

Reason (R): CSV files are a common file format for transferring and storing data. [1]

18. Assertion (A): Access mode 'a' opens a file for appending.

Reason (R): The file pointer is at the end of the file if the file exists. [1]

Section – B

19. (i) Identify the domain name and URL from the following:

`http://www.income.in/home.aboutus.html` [2]

(ii) Differentiate between web server and web browser.

OR

(i) Expand the following abbreviations.

FTP, TCP

(ii) What do you mean by VoIP?

20. Consider the code given below :

```
i=0
while i<100:
    i += 1
    if i % 2 = 0
    print(i)
```

This code was written to print values less than 100 but not 100. If the loop condition is not to be changed, find the error and rewrite the code. [2]

21. Write a function that takes a sorted list and a number as an argument. Search for the number in the sorted list using binary search. [2]

OR

Write a function that takes one argument (a positive integer) and reports if the arguments is prime or not. [A1]

22. Write the output of the following Python program code:

```
Data=['D','O',' ','I','t',' ','@',' ','1','2','3',' ','!']
for i in range(len(Data)-1):
    if (Data[i].isupper()):
        Data[i]=Data[i].lower()
    elif (Data[i].isspace()):
        Data[i]=Data[i+i]
print Data
```

[2]

23. What will be the output of the following expressions when

$a = 10, b = 56, c = 89, name = "Hello", name1 = "hello"$

- (i) print (a < b)
 (ii) print (a < b < c)
 (iii) print (name < name1)
 (iv) print (a < b > c)

[2]

OR

What output will this code produce?

```
fruits = []
fruits.append("Orange")
fruits.append("Apple")
fruits.append("Banana")
fruits.reverse()
print(fruits)
print(fruits[1:3])
```

24. Differentiate between cardinality and degree of a table. [2]

OR

What will happen if the data being loaded into a text column exceeds the maximum size of that type? What type of value Numeric Data is used to store?

25. Predict the output of the following code

```
myvar="Immediately"
print(myvar[4:8])
print(myvar[8:12])
```

[2]

Section – C

26. Predict the output of the following code

```
def execute(x, y=200):
    temp=x+y
```

```

print (temp, x, y)
a, b=50, 20
execute (b)
execute (a, b)
execute (b, a)

```

[3]

[3]

27. Obtain the outputs of the following SQL queries based on the data given in the table Furniture

Table: FURNITURE

FID	NAME	DATE OF PURCHASE	COST	DISCOUNT
B001	Double	03-jan-2018	45,000	10
T010	Dining Table	10-Mar-2020	51,000	5
B004	Single Bed	19-Jul-2016	22,000	0
C003	Long Back Chair	30-Dec-2016	12,000	3
T006	Console Table	17-Nov-2019	15,000	12
B006	Bunk Bed	01-Jan-2021	28,000	14

- (i) SELECT SUM (DISCOUNT) FROM FURNITURE WHERE COST>15000;
(ii) SELECT MAX (DATEOFPURCHASE) FROM FURNITURE;
(iii) SELECT * FROM FURNITURE WHERE DISCOUNT>5 AND FID LIKE " T%";

28. Define a function `reverse()` that overwrites the contents of the file "myfile.txt" with its reverse contents. That is the file will now contain the lines of the original file in reverse order. [3]

OR

Write a program that prompts for a phone number of 10 digits and two dashes, with dashes after the area code and the next three numbers.

e.g. 017-555-1212 is a legal input.

Display if the phone number entered is invalid format or not and display if the phone number is valid or not.

29. Write SQL queries with respect to the table Students given below : [3]

Table: STUDENTS

ADMNO	NAME	CLASS	SEC	RNO	ADDRESS	PHONE
1211	MEENA	12A	D	4	A-26	3245678
1212	VANI	10A	D	1	B-25	5456789
1213	MEENA	12B	A	1	NULL	NULL
1214	KARISH	10B	B	3	AB-234	4567890

Answer the questions for (i) to (iii)

- (i) Command to display name and class of those students whose address is available in students' table.
(ii) Identify the statement to delete a column phone from the table students.
(iii) Identify the primary key of Table students.

30. Write a program that checks whether an input string is a palindrome using stacks. Write two functions. [3]

(i) `pushstr()`

(ii) `popstr()`

Also write the main module.

Section – D

31. In a Database, there are two tables with the instances given below

Table: STUDENTS

ADMNO	NAME	CLASS	SEC	RNO	ADDRESS	PHONE
1211	MEENA	12A	D	4	A-26	3245675

1212	VANI	10A	D	1	B-25	5456789
1213	MEENA	12B	A	1	NULL	NULL
1214	KARISH	10B	B	3	AB-234	4567890

Table: SPORTS

ADMNO	GAME	COACHNAME	GRADE
1215	CRICKET	MR. RAVI	A
1313	VOLLEYBALL	MR AMANDEEP	B
1211	VOLLEYBALL	MR. GOVARDHAN	A
1212	BASKETBALL	MR. TEWARI	B

Answer the questions for (i) to (iv)

- Command to display name and game of those students whose address is available in students' table
- Identify the statement to delete a column phone from the table students
- The command to count the number of students who play volleyball
- Identify the foreign key of Table Sports

[4]

32. Amritya Seth is a programmer, who is writing the code with following functions:

- AddStudents () to create a binary file called STUDENT. DAT containing student information-roll number, name and marks (out of 100) of each student.
- GetStudents () to display the name and percentage of those students who have a percentage greater than 75. In case there is no student having percentage > 75 the function displays an appropriate message.

The function should also display the average percent.

[4]

Section – E

33. Perfect Bdu Services Ltd. is an educational organization. It is planning to setup its India campus at Karnataka with its head office at Delhi. The Karnataka Campus has 4 main buildings – ADMIN, ENGINEERING, BUSINESS and MEDIA. You as a network expert have to suggest the best network related solutions for their problems raised in (i) to (v), keeping in mind the distances between the buildings and other given parameters. Shortest distances between various buildings:

Admin to Engineering 55mt

Admin to Business 90mt

Admin to Media 90mt

Engineering to Business 55mt

Engineering to Media 90mt

Engineering to Media 45mt

Delhi head office of Karnataka campus 2175km

Number of computers installed at various buildings are as follows:

Admin 110

Engineering 75

Business 40

Media 12

Delhi Head office 20

- Suggest the most appropriate location of the server inside the Karnataka campus to get the best connectivity for maximum no. of computers.
- Draw the cable layout to efficiently connect various buildings within the Karnataka campus for connecting the computers.
- Which hardware device will you suggest to be procured by the company to be installed to protect and control the internet uses within the campus?
- Which of the following will you suggest to establish the online face to face communication between the people in the admin office of Karnataka campus and Delhi head office.

(v) The organization is planning to link its sale counter situated in various part of the same city. Which type of network out of LAN, WAN, MAN will be formed?

34. (i) How can you read input from the keyboard?

[5]

(ii) A csv file "students.csv" contains students name, score. Write a function score() - to read students name, score from the file and print.

OR

(i) How can you write output to the monitor?

(ii) Create file marks.dat that stores the details in following format:

Name	Marks
Rahul	750
Kiyaan	665

Obtain the details from the user.

35. (i) Name any two DDL and DML commands.

(ii) Consider the following structure of table Management

Man_Id
Department
Staff
Section
Salary

Write Python code to create the above table structure. Use the following for connecting to the database

Host: Localhost, Database: System

User: Admin, Password: Admin@123

[5]

OR

(i) Explain the concept of candidate keys.

(ii) Consider a table structure as follows:

Employee
Emp_Id
Emp_name
Dept
Age

Write Python code to create the above table

□□□

Finished Solving the Paper ?
Time to evaluate yourself !

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