Sample Question Paper-5

COMPUTER SCIENCE

Class-XII, Session: 2023-24

SOLVED

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 carriers 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 4 Marks.
(vii) Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.
(viii) All programming questions are to be answered using Python Language only.

Section – A

1. **State True or False:**
A dictionary can be updated by the contents of other dictionary using the `change()` method. [1]

2. Jaya wants to display the records of her table in descending order of names of products. Which SQL clause she has to use?
(A) Group by (B) Order by (C) Between (D) Check [1]

3. The expression :
`72//4 + 12%5 + 9**2 -1` evaluates to :
(A) 101 (B) Error (C) 100 (D) 99 [1]

4. What will be the output of this program?

```
m = 1
n = "1"
print (str(m) + n)
```

(A) 1 (B) 2 (C) 11 (D) Syntax Error [1]

5. The design of the database is known as _____ .
(A) attribute (B) database schema
(C) obstruction (D) database oriented [1]

6. Bluetooth transmission can carry data within
(A) A city (B) A country (C) A state (D) A room [1]

7. What will be the output of this program?

```
p = "12"
q = "5"
r = 10
s = 8
print(p+q, r+s)
```

(A) 17 18 (B) 125 108 (C) 17 108 (D) 125 18 [1]

8. The score of a student in a test is stored as a Python tuple. The test had 3 questions, with some questions having subparts whose scores are recorded separately.

```
score = (6, (5, (2, 1), 8, (4, 3, (1, 3, 2))))
```

What will be the output of this program snippet?
(A) (1, 3, 2) (B) (2, 1) (C) 3 (D) 8 [1]

9. What will be the output of the program given below?

```
string = "2021-08-09 10:22:03::0443::06384626::00001024"
parts = string.spilt("::", 2)
print(parts)
```

(A) ['2021-08-09 10:22:03', '0443::06384626::00001024']
(B) ['2021-08-09 10', '22', '03::0443::06384626::00001024']
(C) ['2021-08-09 10:22:03', '0443', '06384626::00001024']
(D) ['2021-08-09 10:22:03', '0443', 06384626', '00001024'] [1]

10. What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code ? A I

```
import random
AR=[20,30,40,50,60,70]
From=random.randint(1,3)
TO=random.randint(2,4)
for K in range(FROM,TO+1):
   print (AR[K],end='#')
```

(A) 10#40#70# (B) 30#40#50# (C) 50#60#70# (D) 40#50#70# [1]

11. Fill in the blank:

A cookie is a _____.

(A) Temporary file (B) Protocol (C) Software (D) Hardware [1]

12. Given the following code . What should be filled in the missing blank for proper execution of the code.

```
import random
def  automatic() :  #Function to return a random number between 0 - 1
    s=random._____
    return s
```

(A) randint(0,100) (B) random()
(C) shuffle() (D) choice [1]

13. State True or False:

The code written in the finally block executes every time , even if exception does not occur.

14. A table in a database can contain _____ primary key(s).

(A) Single (B) Multiple (C) 2 (D) 3 [1]

15. Fill in the blank;

The function of a repeater is to take a weak and corrupted signal and _____ it. [1]

16. Which of the following statement(s) are correct regarding the file access modes?

(A) 'r+' opens a file for both reading and writing. File object points to its beginning.
(B) 'w+' opens a file for both writing and reading. Adds at the end of the existing file if it exists and creates a new one if it does not exist.
(C) 'wb' opens a file for reading and writing in binary formal. Overwrites the file if it exists and creates a new one if it does not exists.
(D) 'a' opens a file for appending. The file pointer is at the start of the file if the file exists. [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 for 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):** Strings in Python are mutable.

Reason (R): The first character has the index 0 and the last character has the index n-1 where n is the length of the string. [1]

18. **Assertion (A):** Joining two lists is just like adding two strings.

Reason (R): The concatenation operator + is used to add two strings. [1]

Section – B

19. (a) When a user browses a website, the web server sends a text file to the web browser. What is the name of this?

(b) What is the purpose of server in a network ? [2]

OR

(a) Write the expanded names for the following abbreviated terms SMTP, VoIP

(b) How is packet switching different from circuit switching?

20. Identify the errors(s) in the code and write the correct code.

```
def describe intelliegent life form():
height = input("Enter the height")
raw_input("Is it correct?")
   weight = input("Enter the weight")
favourite-game = input("Enter favourite game")
   print("your height", height,'and weight',weight)
print("and your favourite game is", favouritism,'.')
```

[2]

21. Write a Python program using functions to calculate area of a triangle after obtaining its three sides.

Or

Write a function namely `checkPrime(num)` that receives a number and returns True if the argument passed is a prime number , else returns False. [2]

22. Find and write the output of the following Python code :

```
p = 1
q = 6
def change_values():
   global p
   q = 5
   p = p + q
   return (p)
change_values()
print(p,q)
```

[2]

23. Write the Python statement for each of the following tasks using BUILT-IN functions/methods only: [2]

(a) To display sum of maximum and minimum value of a list - `Lst`

(b) To remove all the elements of a dictionary - `Empdict`.

OR

Find and write the output of the following Python code def status(P ,Q=35):

```
P=P+Q
Q=P-Q
print( P,"@",Q)
return (P)
R=300
S=150
R=status(R,S)
print(R,"!!",S)
S=status(S)
```

24. A table, `Teacher` has been created in a database with the following fields:

`Tcode, Tname , Dept , Post, Salary`

Give the SQL command to make `Tcode` as the primary key

Then after write a query to increase the salary of "Computer" department teachers by 25%. [2]

OR

Define Equi join.

25. Write the output of the following code:

```
def Changer(P,Q=10):
  P=P/Q
  Q=P%Q
```

```
    print(P,"#",Q)
    return P
A=200
B=20
A=Changer(A, B)
print(A,"$",B)
B=Changer(B)
print(A,"$",B)
A=Changer(A)
print (A,"$",B)
```

[2]

Section – C

26. Find and write the output of the following Python code:

```
def fun(s):
    k=len(s)
    m=" "
    for i in rang(0,k):
        if (s[i].isupper()):
            m=n+s[i].lower()
        else s[i].isalpha():
            m=m+s[i].upper()
        else:
            m=m+'bb'
     print(m)
fun('school2@com')
```

[3]

27. Write the output of the queries (i) to (iii) based on the table, VACCINATION_DATA given below:

Table: VACCINATION_DATA

VID	Name	Age	Dose 1	Dose 2	City
101	Jenny	27	2021-12-25	2022-01-31	Delhi
102	Harjot	55	2021-07-14	2021-10-14	Mumbai
103	Srikanth	43	2021-04-18	2021-07-20	Delhi
104	Gazala	75	2021-07-31	Null	Kolkata
105	Shiksha	32	2022-01-01	Null	Mumbai

(i) `SELECT Name, Age FROM VACCINATION_DATA WHERE Dose 2 IS NOT NULL AND AGE > 40;`

(ii) `SELECT City, COUNT(*) FROM VACCINATION_DATA GROUP BY City:`

(iii) `SELECT DISTINCT City FROM VACCINATION_DATA;`

[3]

28. Write a function `showords()` to open a text file "`words.txt`" and display the words which have more than 5 letters. [3]

OR

Write a function to count the number of lines in a text file "`players.txt`".

29. Consider the table Flight given below:

Table : FLIGHT

FNO	START	END	F_DATE	FARE
F101	MUMBAI	CHENNAI	2021-12-25	4500
F102	MUMBAI	BENGALURU	2021-11-20	4000
F103	DELHI	CHENNAI	2021-12-10	5500

F104	KOLKATA	MUMBAI	2021-12-20	4500
F105	DELHI	BENGALURU	2021-01-15	5000

Based on the table, write SQL queries for the following :

(i) Write a query to change the fare to 6000 of the flight whose FNO is F104.

(ii) Write a query to delete the records of flights which end at Mumbai. [3]

(iii) To display the average fare of among all the flights [3]

30. Write a function to push any student's information to stack.

Section – D

31. Write SQL queries for (i) to (iv) on the basis of table `ITEMS` and `Traders`:

Table: ITEMS

CODE	INAME	QTY	PRICE	COMPANY	TCODE
1001	DIGITAL PAD 12i	120	11000	XENITA	T01
1006	LED SCREEN 40	70	38000	SANTORA	T02
1004	CAR GPS SYSTEM	50	21500	GEOKNOW	T01
1003	DIGITAL CAMERA 12X	160	8000	DIGICLICK	T02
1005	PEN DRIVE 32 GB	600	1200	STOREHOME	T03

Table: TRADERS

TCODE	INAME	CITY
T01	ELECTRONIC SALES	MUMBAI
T03	BUSY STORE CORP	DELHI
T02	DISP HOUSE INC	CHENNAI

(i) To display the details of all the items in ascending order of item names (i.e., INAME).

(ii) To display item name and price of all those items, whose price is in the range of 10000 and 22000 (both values inclusive).

(iii) To display the number of items, which are traded by each trader. The expected output of this query should be:

T01 2
T02 2
T03 1

(iv) To increase the price of items by 10% whose quantity is above 100. [4]

32. Ravi is a programmer and has been assigned to write functions `Add_data( )` and `Search_data( )` for working with records of products.

(i) `Add_data( )` – To accept and add more data of products to a CSV file `'product.csv'`. Each record consists of a list with field elements as `ProdId`, `Prodname` and Qty to store `Product ID`, Product name and qty of the products respectively.

(ii) `Search_data(p)` – To display the records present in the CSV file, whose productid matches with the argument of the function, and display.

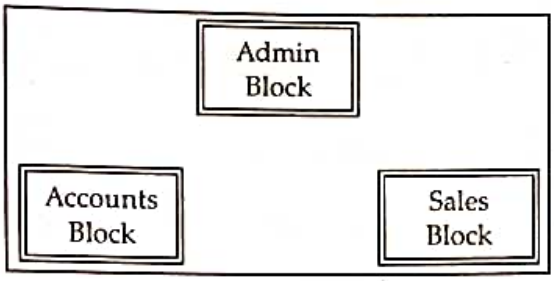
Help Ravi in writing the code. [4]

Section – E

33. Galaxy Provider Ltd. is planning to connect its office in Texas, USA with branch at Mumbai. The Mumbai branch has 3 Offices in three blocks located at some distance from other for different operations. ADMIN, SALES and ACCOUNTS.

As a network consultant, you have to suggest the best network related solutions for the issues/problems raised in (i) to (v), keeping in mind the distances between various location and other given parameters.

Layout of the Offices in the Mumbai branch:



Shortest distances between various locations:

ADMIN block to SALES Block	300 m
SALES Block to ACCOUNTS Block	175 m
MUMBAI Branch to TEXAS Head Office	14000 km
MUMBAI block to ACCOUNTS block	350 km

Number of Computers installed at various locations are as follows:

ADMIN Block	256
ACCOUNTS Block	75
SALES Block	30
TEXAS Head Office	90

(i) Is is observed that there is a huge data loss during the process of data transfer from one block to another. Suggest the most appropriate networking device which needs to be placed along the path of the wire connecting one block office with another to refresh the signal and forward it ahead.

(ii) Which hardware networking device will you suggest to connect all the computers within each block?

(iii) Which service/protocol will be most helpful to conduct live interactions of employees from Mumbai Branch and their counterparts in Texas?

(iv) Draw the cable layout (block to block) to efficiently connect the three officers to the Mumbai branch.

(v) Suggest placement of server in the network. [5]

34. (i) Differentiate between file modes r+ and w+ with respect to Python.

(ii) Given a pickled `log.dat` file, containing list of strings. Write a python function that reads the file and looks for a line of the form [A I] [5]

Xerror: 0.2395

whenever such line is encountered, extract the floating point value and compute the total of these error values. When you reach end of file print total number of such error lines and average of error value.

OR

(i) What is the use of os.path module?

(ii) Write a program to use pickle module for reading and writing binary files.

35. (i) Define the term attribute with respect to RDBMS.

(ii) Consider the following SQL, table `MEMBER` in a SQL, Database `CLUB`:

Table: MEMBER

M_ID	NAME	ACTIVITY
M1001	Amina	GYM
M1002	Pratik	GYM
M1003	Simon	SWIMMING
M1004	Rakesh	GYM
M1005	Avneet	SWIMMING

Write Python code to display the M_ID and NAME of members whose activity is "GYM"
Use the following information for connection.
Host : `localhost`
Database : `club`
Userid : `Admin`

Password : `Admin@123`
Table name : `Member`

[5]

OR

(i) Which method of cursor class is used to insert or update multiple rows using a single query?

(ii) Write Python code to insert following records into the OrderDetails table.
Database : `sales`
Userid : `Admin`
Password : `salAd345`
table name : `OrderDetails`

ORDNUMB	PARTNUMB	NUMBORD	QUOTPRIC
12489	AX12	11	14.95
124901	BT04	1	402.99
12492	BZ66	1	311.95
12498	CX11	2	57.95

❑❑❑