

Self Assessment Paper-2

COMPUTER SCIENCE

Class-XII, Session: 2023-24

Unsolved

Time Allowed: 3 hours

Maximum Marks: 70

General Instructions:

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

Section – A

1. State True or False:

The default delimiter of a csv file is "#".

[1]

2. Nita wants to find records that match any one value within a set of values. Which SQL clause she has to use?

- (A) BETWEEN (B) IS NULL (C) IN (D) RANGE [1]

3. The expression :

$25 * 0.5 + 12 - 165 \% 18 + 33 // 6$ evaluates to:

- (A) 18.5 (B) 19.0 (C) 19.2 (D) None of these [1]

4. Give the output of the following code:

```
s="funnyjokes"
```

```
print(s[2:].startswith("nn"))
```

[1]

5. To which category of commands the DROP command belongs?

- (A) DML (B) DDL (C) TCL (D) DCL [1]

6. Which of the following is a short range communication medium?

- (A) OFC (B) Microwave (C) Satellite (D) Infrared [1]

7. What will be the output of the following code?

```
S="AISSCE@2024"
```

```
for a in S:
```

```
    if a.isdigit() :
```

```
        print(a)
```

[1]

8. Consider the given expression:

not True and False or True

Which of the following will be correct output if the given expression is evaluated?

- (A) True (B) False (C) NONE (D) NULL [1]

9. Which of the following is not a correct Python statement to open a text file "Notes.txt" to write content into it?

- (A) F = open('Notes.txt', 'w') (B) F = open('Notes.txt', 'a')
(C) F = open('Notes.txt', 'A') (D) F = open('Notes.txt', 'w+') [1]

10. What are the possible outcome(s) after execution from the following code?

```
import random
PICK=random.randint (0, 3)
CITY=['DELHI', 'MUMBAI', 'CHENNAI', 'KOLKATA'] ;
for I in CITY :
    for J in range (1, PICK):
        print(I, end = ' ')
```

- (A) DELHIDELHI
MUMBAIMUMBAI
CHENNAICHENNAI
KOLKATAKOLKATA
- (B) DELHI
DELHIMUMBAI
DELHIMUMBAICHENNAI
- (C) DELHI
MUMBAI
CHENNAI
- (D) DELHI
MUMBAIMUMBAI
KOLKATAKOLKATAKOLKATA

11. Fill in the blank

Bluetooth is an example of _____.

- (A) personal area network
(B) local area network
(C) virtual private network
(D) wide area network

12. Stdout, stdin and stderr are _____

- (A) Structure (B) File pointer (C) File descriptors (D) Streams

13. State True or False:

A code without exception handled may abnormally terminate.

14. Which of the following constraints can be applied to only one attribute of a table?

- (A) Unique (B) Distinct (C) Primary Key (D) NULL

15. Fill in the blanks: The first page that appears when a web site is opened is called _____.

16. Which of the following is the default character for the newline parameter for a csv file object opened in write mode in Python IDLE?

- (A) \n (B) \f (C) , (D) ;

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): 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.

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

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

Section – B

19. (i) Write the expanded names for the following abbreviated terms used in Networking and Communications:
(a) TCP/IP
(b) CDMA
- (ii) What is web hosting?

OR

(i) Identify the domain name and URL from the following:
`http://www.income.in/home.aboutus.html`

(ii) Write any two popular web browsers.

Q. Find the errors from the following code:

```
c=dict()
n=input(Enter total number )
i=1
while i<=n:
    a=input("enter place")
    b=input("enter number")
    c[a]=b
    i=i+1
print ("place", "\t", "number")
for i in c:
    print (i, "\t", c[a[i]])
```

1. Write a void function that receives a 4 digit number and calculates the sum of squares of first two digits of the number and last two digits of the number eg. if 1233 is passed as argument then function should calculate $(12)^2 + (33)^2$. [2]

OR

Write a function to swap two numbers.

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

```
def Change (P ,Q=30) :
    P=P+Q
    Q=P-Q
    print ( P, "#", Q)
    return (P)
R=150
S=100
R=Change (R, S)
print (R, "#", S)
S=Change (S)
```

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

(i) Given `empdict={"Eno":123, "Ename": "Jack", "Sal":78000}`. To add a new key: value "Email": "Jack@gmail.com" [2]

(ii) Given: `t=(123, 12, 890, 56, 45)` To display the last 3 elements of the tuple using negative indexes.

OR

Find the output of the following code

```
a=[[1, 2, 3, 4, 5], [6, 7, 8]], 9]
a[-1]= 50
b=a[:]
b[0][1][2]=27
print (a)
print (b[2:4])
```

24. A table, toys has to be created in a database with the following fields:

ToyId integer, Toyname varchar (20), Category varchar (1), Price float (8, 2), Vendor varchar (20).

Give the SQL command to create the above table.

Then after write a query to display the structure of the table. [2]

OR

A table Employee has 8 columns but no row. Later, 8 new rows are inserted and 2 rows are deleted in the table.

What is the degree and cardinality of the table Employee?

25. Identify the output of the following Python statements:

```
L1, L2 = [10, 15, 20, 25], []
for i in range (len(L1)) :
    L2. insert(i, L1.pop())
print (L1, L2, sep="&")
```

[2]

Section - C

26. Find the output of the following code :

```
c=[]
a=[[ [1,2,3,4,5], [6,7,8]], 9]
a[-1]=200
b=a[:]
b[0][0][3]=17
c.append(a[0][0])
c[-1][0]=c[-1][0] +5
print(a)
print(b)
print(c)
```

[3]

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

[3]

Table: ITEMS

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

- (i) SELECT MAX (PRICE), MIN (PRICE) FROM ITEMS;
 (ii) SELECT PRICE*QTY FROM ITEMS WHERE CODE=1004;
 (iii) SELECT* FROM ITEMS ORDER BY INAME ASC;

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. AI [3]

OR

Consider the file "Poem.txt"

Autumn Song

Like a joy on the heart of a sorrow,
 The sunset hangs on a clouds:
 A golden storm of glittering sheaves,
 Of fair and frail and flattering leaves,
 The build wind blows in a cloud.

Define a function reverse () that prints the lines of the file in reverse order.

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

1. To display the total number of distinct RNO
 2. To display a report showing Name, Class and Address of students whose name has "EE", in descending order of SEC.
 3. To change the address to C-97 for those who do not have an address.
4. Write a program to print a string in reverse order. For this write the following two functions. [AI] [3]
- (i) `pushStack()` - To extract individual characters from string and push in a stack.
 (ii) `PopStack` - To pop the stack and display the string.

Section - D

1. Consider the following tables WORKER and PAYLEVEL.

Table: WORKER

ECODE	NAME	DESIGN	PLEVEL	DOJ	DOB
11	Radhe Shyam	Supervisor	P001	13-Sep-2004	23-Aug-1981
12	Chander Nath	Operator	P003	22-Feb-2010	12-Jul-1987
13	Fizza	Operator	P003	14-Jun-2009	14-Oct-1983
15	Ameen Ahmed	Mechanic	P002	21-Aug-2006	13-Mar-1984
18	Sanya	Clerk	P002	19-Dec-2005	09-Jun-1983

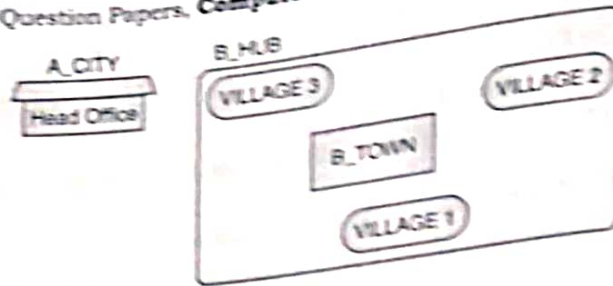
Table: PAYLEVEL

PLEVEL	PAY	ALLOWANCE
P001	26000	12000
P002	22000	10000
P003	12000	6000

- (i) Write the statement to increase the width of the column "Name" to `varchar(40)`
 (ii) To display the worker name, designation and corresponding total pay(Pay + Allowance)
 (iii) To display the name of the workers, their DOB and corresponding Pay for "Supervisors"
 (iv) To count the total number of "Operators". [4]
2. Mr. Surajit is a Librarian in a leading school. He wants to write a code to search data of books from a csv file "Books.csv" that stores records of books in his library.
 The file stores records of following structure:
`[BookID, Bname, Publisher, Author, Price]`
 Help him to write a function `getBook(Pub)` that receives a publisher name as argument and displays details of the books of the publisher. [4]

Section - E

3. Uplifting Skills Hub India is a knowledge and skill community which has an aim to uplift the standard of knowledge and skills in the society. It is planning to setup its training centres in multiple towns and villages pan India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as follows.
 As a network consultant, you have to suggest the best network related solutions for their issues/problems raised in (i) to (v) keeping in mind the distance between various locations and given parameters.



Shortest distance between various location :

VILLAGE 1 to B_TOWN	2 KM
VILLAGE 2 to B_TOWN	1.0 KM
VILLAGE 3 to B_TOWN	1.5 KM
VILLAGE 1 to VILLAGE 2	3.5 KM
VILLAGE 1 to VILLAGE 3	4.5 KM
VILLAGE 2 to VILLAGE 3	2.5 KM
A_CITY Head Office to B_HUB	25 KM

Number of Computers installed at various locations are as follows :

B_TOWN	120
VILLAGE 1	15
VILLAGE 2	10
VILLAGE 3	15
A_CITY Head OFFICE	6

Note :

- In Villages, there are community centres, in which one room has been given as training centre to this organization to install computers.
 - The organization has got financial support from the government and top IT companies.
- (i) Suggest the most appropriate location of the SERVER in the B_HUB out of the 4 locations, to get the best and effective connectivity. Justify your answer.
 - (ii) Suggest the best wired medium and draw the cable layout (location to location) to efficiently connect various locations within the B_HUB.
 - (iii) Which hardware device will you suggest to connect all the computers within each location of B_HUB?
 - (iv) Which service/protocol will be most helpful to conduct live interactions of Experts from Head Office and people at all locations of B_HUB?
 - (v) The community is planning to link its blocks situated in various part of the same city. Which type of network out of LAN, WAN, MAN will be formed? Justify.

34. (i) Write any one difference between `writetow()` and `writerows()` function for csv files. [5]

(ii) Given a binary file "Tour.dat" storing details of tourist spots as per following structure:

[TId, Tname, No_of_tourists, price, Location]

Write a function `addMore()` to add details of more tours into the file keeping the existing records.

OR

(i) What Is The Special Character That Terminates Each Line Of A Text File Called?

(ii) Given a binary file "Games.dat" storing details of games as per following structure:

[GameID, Gname, Type, Prizemoney]

Write a function `Update(gid)` that updates the record of the gameid in the binary file. [5]

- (i) Write the use of having clause in SQL.
(ii) Write Python code to increase age of all employees by 1 year in the Employee table of database HTMDB
Use the following for connecting to the database
Host: localhost
Database :HTMDB
User : HRMan
Password : HRMANexe@pwd

[5]

OR

- i) What is the maximum length of the char columns?
ii) Write Python code to delete all the records from the Employee table whose Age >60 and the table has following fields.
Empid, EmpName, Deptid, Age, Payscale

□□□

Finished Solving the Paper ?
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