

INDIAN SCHOOL MUSCAT
CLASS XII
COMPUTER SCIENCE
HOLIDAY HOMEWORK

Answers to be written in Journal

Last date of submission: 14-01-2021

1. What is the use of return statement in a function? In which three cases does a function return None?

Write Python statement(s) to import:

- (i) A function alpha() from a module named myModule.
- (ii) Functions comp1() and comp2() from a module named Computer
- (iii) Package named Trigonometry.

2. In which mode should a file be opened:

- (iv) To create a new file and write data into it.
- (v) To write data into an existing file. If the file does not exist, then file should be created to write data into it.

3. Differentiate between seek() and tell().

4. Define the terms TOP, PUSH, POP in context of stacks.

5. What is a csv file? How is it different from a plain text file?

6. Define connection and cursor w.r.t. Python interface with an SQL database.

7. What is the function of fetchmany() method?

8. Find error(s), if any, in each of the following code snippets in Python:

```
def f1[a,b]
a+=b
b=*a
print(a,b)
x,b=5
f1(x)
```

9. Find output of each of the following code snippets in Python:

```
def f3(a,b):
    global x,y
    x=a+b
    a,y=a+x,a*x
    print(a,b,x,y)
f3(5,10)
print(f3(b=x,a=y))
```

10. Write a function in Python which takes a string of comma separated words as parameter and returns a comma separated string in which the words of given string are sorted. For example, if the given string is "Maths,English,Physics,Chemistry", then the returned string should be: "Chemistry,English,Maths,Physics".

11. Write a function EUCount() in PYTHON, which should read each character of a text file IMP.TXT, should count and display the occurrences of alphabets E and U (including small cases e and u too).

Example:

If the file content is as follows:

**Updated information
Is simplified by official websites.**

The EUCount() function should display the output as:

**E:4
U:1**

12. Assuming the tuple Vehicle as follows: (vehicletype, no_of_wheels)

Where vehicletype is a string and no_of_wheels is an integer.

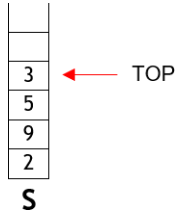
Write a function showfile() to read all the records present in an already existing binary file SPEED.DAT and display them on the screen, also count the number of records present in the file.

13. Each element of a stack TEXTBOOKS (a list) is a dictionary with keys 'ISBN', 'TITLE', and 'PRICE'. The values for 'ISBN', 'TITLE', and 'PRICE' are of type integer, string, and float respectively. Write functions:

i) PUSH(TEXTBOOKS) to push an element into the stack. The details of the book to be pushed are to be input from the user.

ii) POP(TEXTBOOKS) to pop an element from the stack. The popped element should be returned by the function. If the stack is empty, function should return None.

14. Consider a stack as follows



Assuming standard definitions of functions PUSH() and POP(), redraw the stack after performing the following set of operations:

- POP(S)
- POP(S)
- PUSH(S,8)
- PUSH(S,3)
- POP(S)

15. Observe the following STUDENTS and EVENTS tables carefully and write the name of the RDBMS operation which will be used to produce the output as shown in LIST. Also, find the Degree and Cardinality of the LIST.

STUDENTS

No	Name
1	Tara mani
2	Jaya Sarkar
3	Tarini Trikha

EVENTS

EVENTCODE	EVENTNAME
1001	Programming
1002	IT Quiz

LIST

NO	NAME	EVENT CODE	EVENTNAME
1	Tara mani	1001	Programming
1	Tara mani	1002	IT Quiz
2	Jaya Sarkar	1001	Programming
2	Jaya Sarkar	1002	IT Quiz
3	Tarini Trikha	1001	Programming
3	Tarini Trikha	1002	IT Quiz

16. Write SQL commands for (a) to (f) and write the outputs for (g) on the basis of tables FURNITURE and ARRIVALS

FURNITURE

NO	ITEMNAME	TYPE	DATEOFSTOCK	PRICE	DISCOUNT
1	White lotus	Double Bed	23/02/02	30000	25
2	Pink feather	Baby cot	20/01/02	7000	20
3	Dolphin	Baby cot	19/02/02	9500	20
4	Decent	Office Table	01/01/02	25000	30
5	Comfort zone	Double Bed	12/01/02	25000	25
6	Donald	Baby cot	24/02/02	6500	15
7	Royal Finish	Office Table	20/02/02	18000	30
8	Royal tiger	Sofa	22/02/02	31000	30
9	Econo sitting	Sofa	13/12/01	9500	25
10	Eating Paradise	Dining Table	19/02/02	11500	25

ARRIVALS

NO	ITEMNAME	TYPE	DATEOFSTOCK	PRICE	DISCOUNT
1	Wood Comfort	Double Bed	23/03/03	25000	25
2	Old Fox	Sofa	20/02/03	17000	20
3	Micky	Baby cot	21/02/03	7500	15

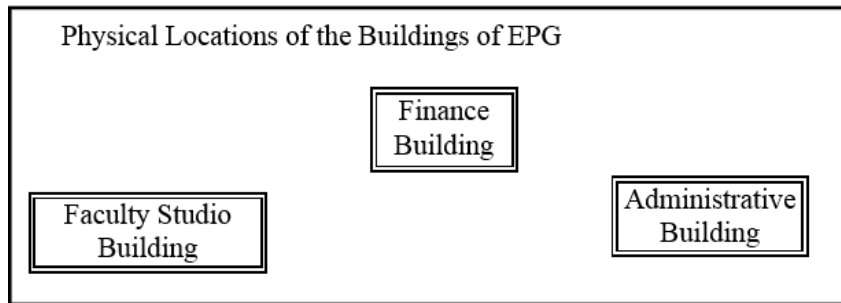
- i. To show all information about the Baby cots from the FURNITURE table.
- ii. To list the ITEMNAME which are priced at more than 15000 from the FURNITURE table.
- iii. To list ITEMNAME and TYPE of those items, in which date of stock is before 22/01/02 from the FURNITURE table in descending of ITEMNAME.
- iv. To display ITEMNAME and DATEOFSTOCK of those items, in which the discount percentage is more than 25 from FURNITURE table.
- v. To count the number of items, whose TYPE is "Sofa" from FURNITURE table.
- vi. To insert a new row in the ARRIVALS table with the following data:
14, "Velvet touch", "Double bed", {25/03/03}, 25000,30
- vii. Give the output of following SQL statements

Note: Outputs of the above mentioned queries should be based on original data given in both the tables i.e., without considering the insertion done in (f) part of this question.

- (i) Select COUNT(distinct TYPE) from FURNITURE;
- (ii) Select MAX(DISCOUNT) from FURNITURE,ARRIVALS;
- (iii) Select AVG(DISCOUNT) from FURNITURE where TYPE="Baby cot";

(iv) Select SUM(Price) from FURNITURE where DATEOFSTOCK < {12/02/02};

17. Expand the terms: HTTPS, POP, VoIP, URL
18. Write two advantages of using an optical fiber cable over an Ethernet cable to connect two service stations, which are 190m away from each other.
19. Write one characteristic each for 2G and 3G Mobile technologies.
20. Expertia Professional Global (EPG) is an online corporate training provider company for IT related courses. The company is setting up their new campus in Mumbai. You as a network expert have to study the physical locations of various buildings and the number of computers to be installed. In the planning phase, provide the best possible answers for the queries (a) to (d) raised by them.



Building to Building distances (in Mtrs.)

FROM	To	Distance
Administrative Building	Finance Building	60
Administrative Building	Faculty Studio building	120
Finance Building	Faculty Studio building	70

Number of computers in each of the blocks/Center is as follows:

Administrative Building	20
Finance Building	40
Faculty Studio building	120

- a) Suggest the most appropriate building, where EPG should plan to install the server.
- b) Suggest the most appropriate building to building cable layout to connect all three buildings for efficient communication.
- c) Which type of network out of the following is formed by connecting the computers of these three buildings?
LAN, MAN, WAN
- d) Which wireless channel out of the following should be opted by EPG to connect to students of all over the world?
Infrared, Microwave, Satellite