

- **Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.**
- **Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.**
- **Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.**
- **Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.**
- **Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.**

SECTION A

1 State True or False:

List is immutable whereas tuple is mutable

2. In a table in MYSQL database, an attribute **Fname** of datatype `char(15)` has the value “Raman”. The attribute **Lname** of datatype `varchar(15)` has value “Meena”. How many characters are occupied by attribute **Fname** and attribute **Lname**?

- a. 5,5 b. 5,10 c. 6,6 d. 6,5

3. What will be the output of the following statement: `print(6+1**2**3+11/2)`

- a. 12.5 b. 13.5 c. 11.5 d. Error

4. Select the correct output of the code:

```
Str= 'Innovative India Conclave'
```

```
L=Str.split()
```

```
S1='$'.join([L[0].upper(),L[1].lower(),L[2].capitalize()])
```

```
print(S1)
```

- a. 'INNOVATIVE\$INDIA\$Conclave' b. 'INNOVATIVE\$india\$CONCLAVE'
c. 'INNOVATIVE\$india\$Conclave' d. 'INNOVATIVE\$INDIA\$CONCLAVE'

5. In MYSQL database, if a table, **One** has degree 4 and cardinality 4, and another table, **Two** has degree 3 and cardinality 4, what will be the degree and cardinality of the Cartesian product of **One** and **Two**?

- a. 7,16 b. 16,7 c. 7,8 d. 16,8

6. Riya connects her mobile phone to an internet hotspot shaRamesh by her friend. Which type of network will be formed in this case?

- a. PAN b. LAN c. MAN d. WAN

7. Which of the following will delete key-value pair for key = “Ramesh” from dictionary Dict1?

- a. `delete Dict1("Ramesh")` b. `del Dict1 ["Ramesh"]`
c. `del. Dict1 ["Ramesh"]` d. `Dict1.del["Ramesh"]`

8 Consider the statements given below and then choose the correct output from the given options:

```
exam="CBSE2024"
```

```
print(exam[1:-3:1])
```

- a. 'BSE2' b. 'BSE20' c. 'BSE2' d. 'CBSE2'

9 Which of the following statement(s) would give an error during execution of the following code?

```
S="MDKSchool"
```

```
print(S*4)                      #Statement 1
```

```

print(S[S[2]+3])          #Statement 2
print(len(S))             #Statement 3
S[2]='M'                  #Statement 4

```

a. Statement 1 b. Statement 2 c. Statement 3 d. Statement 4

10. What possible outputs(s) is obtained when the following code is executed?

```

import random
N=random.randint(1,4)
L=[100,200,300,400,500]
for I in range(1,N):
    print(L[I],end='#')

```

a. 200#300#400# b. 200#300 c. 200#300# d. 200#

11. Repeater acts as an

a. Amplifier b. Hub c. Switch d. Convertor

12. Consider the code given below:

N=10

def disp(P):

..... #Missing Statement

N=N-P

print(N,P)

disp(100)

print(N)

Which of the following statements should be given in the blank for #Missing Statement, if the output produced is 110?

a. global N b. global N=10
c. global P d. global P=10

13. State whether the following statement is True or False:

try...except block is required for exception handling .

14. Which of the following statements is False

- a. Any candidate key is eligible to become a primary key.
- b. A primary key uniquely identifies the tuples.
- c. A candidate key that is not a primary key is a foreign key.

15. In case ofswitching, data is send in fixed sized blocks.

16. Which of the following functions tells the position of file pointer?

a.flush() b.tell() c.seek() d.offset()

Q17 and 18 are ASSERTION AND REASONING based questions. 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 the correct explanation for A
- c) A is True but R is False
- d) A is false but R is True

17. Assertion(A): List is a mutable data type

Reasoning(R): We can modify the value in a list

18. Assertion(A): random is a Python module.

Reasoning(R): random module contains definitions of mathematical functions.

SECTION B

19.

1+1=2

(i) Expand the following terms: FTP, VOIP

(ii) Define the term web hosting.

20. Observe the following code carefully and rewrite it after removing all syntax and logical errors.

Underline all the corrections made.

2

```
def SHOW():
    S="CBSE2023"
    for I in range(1,len(S)):
        if S[i] in "aeiou":
            Print(S[i]*2)
        Else:
            print(I*3)
```

SHOW()

21 Write a function `Display(CITIES)` in Python, that takes the dictionary, `CITIES` as an argument and displays the names of those `CITIES` whose names end with alphabet 'i'. For example, Consider the following dictionary
`CITIES={10:"Mumbai",20:"Delhi",30:"Pathankot",40:"Amritsar",50:"Patiala"}`

2

The output should be:

Mumbai

Delhi

22. Find the output of following code:

2

```
S = "LOST"
L = [10, 21, 33, 4]
D={}
for I in range(len(S)):
    if I%2==0:
        D[L.pop()] = S[I]
    else:
        D[L.pop()] = I+3

for K,V in D.items():
    print(K,V, sep="*")
```

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

1+1=2

(i) To add a new value at the end of list `L`.

(ii) To check index of alphabet 'I' in string variable `msg`.

24 Ms. Shalini has just created a table named "Emp" containing columns

`EName`, `Department` and `Salary`. After creating the table, she realized that she forgot to add a column `Empid` in the table. Help her in writing an SQL command to column **Empid** of int type to the table `Emp`. Also write command to increase size of column **Department** to 50.

2

25. Predict the output of the following code:

```
def Change(A,B=5):
    A=A//B
    B=A%B
    return A
X,Y=80,10
X=Change(X,Y)
print(X,Y, sep='$')
Y=Change(Y)
print(X,Y, sep='$', end='##')
```

SECTION C

26. Predict the output of the Python code given below:

3

```

T="CBSEexam20234"
T1=""
I=0
while I<len(T):
    if T[I].isupper():
        T1+=T[I].lower()
    elif T[I].islower():
        T1+=T[I].upper()
    else:
        T1+="#"
    I+=2
print(T1)

```

27. Consider the table CLUB given below and write the output of the SQLqueries that follow.

1*3=3

CID	CNAME	AGE	GENDER	SPORTS	PAY	DOAPP
5246	AMRIT	35	FEMALE	CHESS	900	2006-03-27
4687	SHYAM	37	MALE	CRICKET	1300	2004-04-15
1245	MEENA	23	FEMALE	VOLLEYBALL	1000	2007-06-18
1622	AMRITA	28	MALE	KARATE	1000	2007-09-05
1256	AMINA	36	FEMALE	CHESS	1100	2003-08-15
1720	MANJU	33	FEMALE	KARATE	1250	2004-04-10
2321	VIRAT	35	MALE	CRICKET	1050	2005-04-30

- (i) SELECT avg(distinct pay) FROM CLUB;
(ii) SELECT CID, GENDER FROM CLUB WHERE DOAPP>'2006-04-30' AND gender="MALE";
(iii) SELECT * FROM CLUB WHERE GENDER = "FEMALE" AND PAY>=1250;

28. Write a function, OneCount () in Python that counts and displays the number of times digit 1 appears in the text file named Data.txt. 3

29 Consider the table Personal given below: Based on the given table, write SQL queries for the following:

Table: Personal

1*3=3

P_ID	Name	Desig	Salary	Allowance
P01	Rohit	Manager	89000	4800
P02	Kashish	Clerk	NULL	1600
P03	Mahesh	Supervisor	48000	NULL
P04	Salil	Clerk	31000	1900
P05	Ravina	Supervisor	NULL	2100

- i. Decrease the salary of all persons by 1000 with name ending with alphabet 'h'.
ii. Display Name and Allowance of Managers and clerk.
iii. Delete the records of personas having salary more than 30000.

30 A list, NList contains following record as list elements:

[City, Country, distance from Delhi]

Each of these records are nested together to form a nested list. Write thefollowing user defined functions in Python to perform the specified operations on the stack named STK.

- (i) **Push (NList):** It takes the nested list as an argument and pushes a list object containing name of the city andcountry, which are in India and distance is less than 2000 km from Delhi.
(ii) **Pop ():** It pops the objects from the stack and displays them. Also, the function should display "Stack Empty" when there are no elements in the stack.

For example: If the nested list contains the following data:

```
NList=[["New York", "U.S.A.", 11734],
["Naypyidaw", "Myanmar", 3219],
["Mumbai", "India", 2194],
["London", "England", 6693],
["Gangtok", "India", 1580],
["Columbo", "Sri Lanka", 3405]]
```

The stack should contain:

```
['Mumbai', 'India'],
['Gangtok', 'India']
```

The output should be:

```
['Gangtok', 'India']
```

Stack Empty

3

SECTION D

31. Consider the tables PRODUCT and BRAND given below: Table: PRODUCT 4

PCode	PName	Price	Rating	BID
P01	Shampoo	120	6	M03
P02	Toothpaste	54	8	M02
P03	Soap	25	7	M03
P04	Toothpaste	65	4	M04
P05	Soap	38	5	M05
P06	Shampoo	245	6	M05

Table: BRAND

BID	BName
M02	Dant Kanti
M03	Medimix
M04	Pepsodent
M05	Dove

Write SQL queries for the following:

- Display product name and brand name from the tables PRODUCT and BRAND for rating other than 6.
- Display the structure of the table **Product**.
- Display the Sum of price of each product separately.
- Display all products in ascending order of price.

32 Ramesh is a Python programmer working in a hospital. He has created a csv file named Patients.csv, to store the details of patients in a hospital. The structure of hospital.csv is : [Patient_Id, Patient_Name, Disease]

Write the following user defined functions:

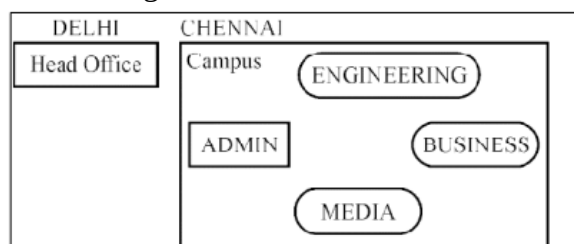
Add() – to accept a record from the user and add it to the file Patients.csv. The column headings should also be added on top of the csvfile.

Display() – to display records of all the patients

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SECTION E

33 Meticulous EduServe is an educational organization. It is planning to setup its India campus at Chennai with its head office at Delhi. The Chennai campus has 4 main buildings – ADMIN, ENGINEERING, BUSINESS and MEDIA 5



Block to Block distances (in Mtrs.)

From	To	Distance
ADMIN	ENGINEERING	55 m
ADMIN	BUSINESS	90 m
ADMIN	MEDIA	50 m
ENGINEERING	BUSINESS	55 m
ENGINEERING	MEDIA	50 m
BUSINESS	MEDIA	45 m
DELHI HEAD OFFICE	CHENNAI CAMPUS	2175 km

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

ADMIN	110
ENGINEERING	75
BUSINESS	40
MEDIA	12
DELHI HEAD	20

- a) Suggest the best topology for interconnecting computers in Chennai .
 (b) Which device can be used to interconnect computers in each block.
 (c) Which block, in Chennai Campus should be made the server? Justify your answer.
 (d) Which fast and very effective wireless transmission medium should preferably be used to connect the head office at DELHI with the campus in CHENNAI?
 (e) What is firewall?

34. (i) Differentiate between r and a file modes in Python.

2+3=5

(i) Consider a binary file, `School.DAT`, containing records of the following structure:

`[RNo, SName, Class]`

Write a function, `Printrecords()` that reads contents from the file

`School.DAT` and shows those records where Class is "12".

35 (i) Define the terms degree and cardinality with respect to RDBMS. 1+4=5

(ii) Kabir wants to write a program in Python to insert the following record in the table named `Customers` in `MYSQL` database, `Hotel`:

- `Roomno`(Room number) - integer
- `Cname`(Name) - string
- `DOE` (Date of Entry) – Date
- `Amount` – float

Note the following to establish connectivity between Python and `MySQL`:

- Username - root
- Password - root
- Host - localhost

a. The values of fields `Roomno`, `Cname`, `DOE` and `Amount` has to be accepted from the user. Write the program in Python to insert values of above variables in database.

b. Write Python code to display the records of customers where amount more than 5000.