Sample Paper 06

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours **Max. Marks: 70**

General Instructions:

1. This question paper contains 37 questions.
2. All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions
3. The paper is divided into 5 Sections- A, B, C, D and E.
4. Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
5. Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
6. Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
7. Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
8. Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
9. All programming questions are to be answered using Python Language only.
10. In case of MCQ, text of the correct answer should also be written.

SECTION A

1. State True or False

"The pop() method removes and displays the last element of a list."

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

```
L = [6, 7, 8, 9, 10]
print(L[2:20])
```

(a) [8, 9, 10] (b) [ ]

(c) Error (d) [6,7,8,9,10]

3. The random function returns a random value between

(a) 1 and 10 (b) 0 and 10

(c) 0 and 1 (d) 1 and 100

4. To read three characters from a file object f, we use.....

(a) f.read(3) (b) f.read()

(c) f.readline() (d) f.readlines()

5. What will be the output of the following code snippet?

string = "Information"

print(string[-1:-10:-3])

6. .....are drawn using certain special purpose symbols.

(a) Algorithm (b) Pseudocode

(c) Flowchart (d) Decision table

7. To arrange a table in descending order of field Salary the clause to be used is

(a) Order by Salary (b) Order by Salary Desc

(c) Arrange by SalaryDesc (d) Arrange by Salary

8. The BETWEEN clause can not be used for

(a) Integer Fields (b) Varchar Fields

(c) Date Fields (d) None of these

9. The constraint that ensures that the field does not get any NULL values is

(a) NULL (b) PRIMARY KEY

(c) CHECK (d) NOT NULL

10. Write the missing line to complete the code snippet below:

file = open("data.txt", "r+")

file.write("Python Programming")

content = file.read()

file.close()

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

Multiple `except` blocks can be used with a single `try` block in Python to handle different types of exceptions.

12. is and is not are_____Operators.

(a) Membership (b) Identity

(c) Logical (d) Comparison

13. What will the following code display?

```
name = "Neha"
type (name)
```

(a) `Invalid function <type>` (b) `<class 'str'>`

(c) `<class 'int'>` (d) `<class 'float'>`

14. Which of the following is not required while specifying the connection string in database connection?

(a) Host (b) Table name

(c) Username (d) Password

Continue on next page.....

15. The ALTER TABLE command belongs to.....category

(a) DML (b) TCL

(c) DDL (d) DCL

16. Which of the following are possible relational operations?

(a) Join (b) Selection

(c) Cartesian product (d) All of these

17. Given a tuple tup = (20,50,10,60,30). The statement append(90) returns

(a) (20,50,10,60,30,90) (b) (90)

(c) Error (d) (30,90)

18. To open a text file for adding records keeping the existing records the mode should be

(a) ab (b) xb

(c) rb (d) w+

19. A device that connects two dissimilar networks is

(a) Modem (b) Repeater

(c) Bridge (d) Gateway

Directions : (Q.Nos. 20-21) are Assertion and Reason based questions.

20. **Assertion (A) :** Binary files are processed faster than text files.
Reasoning (R) : They are written in Binary format and are more close to the computer.

(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.

21. **Assertion** (A) : A function that is neither built in nor modular must be defined.
Reason (R) : The code of built in and modular functions are available for the Python compiler , but if the function is not defined anywhere the compiler cannot get the code.

(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.

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SECTION B

22. Observe the code given below and find the output.

```
s="OceanView"
print(s[8] +s[2:] +str(len(s)))
```

23. What are some commonly used DBMS software packages?

24. What is the purpose of switch in a network?

or

Write names of few network devices.

25. (a) What is the output of below questions?

l1 = [23, 45, 19, 77, 10, 22]

(i) l1.sort()

(ii) max(l1)

(b) Find error in defination of the function given.

```
def finderrors(x=20,y)
    print(x+y*2)
```

26. (a) Write the full forms of

(i) HTML

(ii) HTTPs

(b) Write any two advantages of tree topology.

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

```
empdict={'Eno':[1,2,3,4], 'Ename' : ['Raj', 'Seema', 'John', 'Smith'],
'Sal':[10000, 20000, 30000, 40000]}
print(empdict['Ename'][0], empdict['Sal'][0])
```

or

Write any two differences between Dictionary and Tuple.

28. Mention atleast three limitations of DBMS.

or

What are primary and alternate keys in a database? Provide suitable examples to explain each.

Continue on next page.....

SECTION C

29. The binary file "data.dat" contains student records with the following structure:

Ano	Sname	Marks
1	Raj	850
⋮		
⋮		

Write a Python program to search for a student by their number (ID) entered by the user. If the student is not found, display an appropriate message.

or

Write a program with method countand ( ) to count the word 'and' or And' as an independent word in a text file "status.txt". e.g. if the content of the file "status. txt" is as follows:
Welcome to your one-step solutions for all your study, practice and assessment needs for various competitive & recruitment examinations and school segment. We have been working tirelessly for over a decade to make sure that you have best in class study resources because you deserve SUCCESS AND NOTHING LESS...
Then the output of the program should be: Count of _and_ in file is/are: 3

30. Write the Push operation of stack containing person names. Notice that the name should only accept characters, spaces and period(.) except digits. Assume that Pname is a class instance attribute.

or

Find the final contents of a stack that encounters the following tokens.
Assume that an operand is pushed to stack and a binary operator pops two operands from stack and pushes the result to the stack.
45, 30, + , 50, 80, +, +

31. Write user defined functions factors(num) and factorial(num) to find the factors and factorial of a number accepted from the user and passed to the functions from main function.

or

Riya wrote a program to search any string in text file "school". Help her to execute the program successfully.

```
def check () :
  datafile = open (.....)
  found = input ("Enter any string to
                    be searched : ")
  f = False
  for line in ....... :
     if found in line :
         f = .......
         break
  return f
f = check ()
if (f = =.......) :
       print ("True")
else :
       print (......)
```

(i) Riya should open which file to search any string?

(ii) Which value will assign to f in Line 7?

(iii) Fill the blank in Line 5.

SECTION E

32. (a) Underline the errors in the following code and write the correct code :

```
while s>0
  if a%2=0
     print(a%2)
  elseif a%3=0 then
     print(a%3)
```

(b) What is database connectivity? How to create a connection object?

or

(a) Differentiate between identifier and keyword.

(b) What conditions or terms are included by BD-API?

33. Consider the tables Hotel and Room given below :

Table : Hotel				
T Id	**C Name**	**Room ld**	**Dtof Arrival**	**Charges**
T1	Ritesh	R1	2016-09-09	1800
T2	Sumana	R2	2020-08-01	2000
T3	Abhi	R3	1995-04-05	3000
T4	Ram	R1	1994-02-02	2500
T5	Nitin	R2	NULL	7000

Table : Room		
RoomlD	**RoomType**	**FLoor**
R1	AC	First
R2	Deluxe	Second
R3	General	Second

With respect to the tables given above, write SQL commands for the following.

(i) Create the table hotel and insert the 1st record

(ii) Display the details of customers who have arrived after 01-05-2005

(iii) Display names and room types of customers whose charges are between 2000 and 3000.

(iv) Display Names of customers who are staying in "AC" rooms"

34. Write the SQL commands for (i) to (iv) on the basis of the table HOSPITAL

TABLE: HOSPITAL						
No	**Name**	**Age**	**Department**	**Date-ofadm**	**Cha-rges**	**Sex**
1	Sandeep	65	Surgery	23/02/98	300	M
2	Ravine	24	Orthopaedic	20/01/98	200	F
3	Karan	45	Orthopaedic	19/02/98	200	M
4	Tarun	12	Surgery	01/01/98	300	M

5	Zubin	36	ENT	12/01/98	250	M
6	Ketaki	16	ENT	24/02/98	300	F
7	Ankita	29	Cardiology	20/02/98	800	F
8	Zareen	45	Gynaecology	22/02/98	300	F
9	Kush	19	Cardiology	13/01/98	800	M
10	Shailya	31	Nuclear Medicine	19/02/98	400	M

(i) To show all information about the patients of Cardiology Department.

(ii) To list the name of female patients, who are in Orthopaedic Department.

(iii) To list names of all patients with their date of admission in ascending order.

(iv) To display Patient's Name, Charges, Age for male patients only.

or

Write the command to view all the tables in database.

35. What does csv writer() function do?

Write a python program for operating on a csv file "people.csv" using following functions :

(a) addPeople() :To input details of people and add them to a csv file "people.csv" without removing the previous records. The record structure is as follows :

AdhrNo Name City Age

The file should store only those people whose age is greater than and equal to 18.

(b) getPeople() : To open the file "people.csv" and display records whose name starts with "P"

SECTION E

36. Consider the following table Cab :

Table : Cab			
Cab lD	**Cab Type**	**Nop**	**Rate**
Cb1	Sedan	4	40
Cb2	Yellow Taxi	5	25
Cb3	Mini	3	30
Cb4	Micro	2	20

(i) Which column can serve as the primary key?

(ii) Write a command to display the fields of the table along with their types and sizes.

(iii) Write statements to :

(a) Add a new column Driver varchar(30)

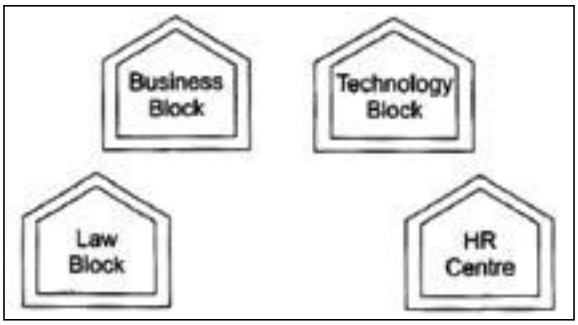
(b) Change data type of Rate column to float(6,1).

or(Option for part (iii) only)

(a) To display the cab type whose rate is more than 25.

(b) To display cab id and Number of passengers for cab sedan.

37. Quick Learn University is establishing its academic blocks in Prayag Nagar and planning to set up a network. The university includes three academic blocks and a human resources center, as illustrated in the diagram below.



Centre to Centre distance between various blocks/Centre is as follows:

Law Block to Business Block	40 m
Law Block to Technology Block	80 m
Law Block to HR Centre	105 m
Business Block to Technology Block	30 m
Business Block to HR Centre	35 m
Technology Block to HR Centre	15 m

Number of computers in each of the blocks/centre are as follows:

Law Block	15
Technology Block	40
HR Centre	115
Business Block	25

(i) Suggest the most suitable place (i.e. block/Centre) to install the server of this university with a suitable reason.

(ii) Suggest an ideal layout for connecting these block/Centre for a wired connectivity.

(iii) Which device you will suggest to be placed/installed in each of these blocks/Centre to efficiently connect all the computers with in these blocks/Centre ?

(iv) The university is planning to connect its admission office in the closest big city, which is more than 250 km from university, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.

(v) Expand the following

LAN

WAN

END