



**COMPUTER SCIENCE - NEW (083) (Revised)**  
**SAMPLE QUESTION PAPER 1 (2020-2021)**  
**CLASS- XII**

**Max. Marks: 70**

**Time: 3 hrs**

**General Instructions:**

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections:
  - a. Section – I is short answer questions, to be answered in one word or one line.
  - b. Section – II has two case studies questions. Each case study has 4 case-based subparts. An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
  - c. Section-I is short answer questions of 2 marks each in which two question have internal options.
  - d. Section-II is long answer questions of 3 marks each in which two questions have internal options.
  - e. Section-III is very long answer questions of 5 marks each in which one question has internal option.
6. All programming questions are to be answered using Python Language only

**Part-A**

**Section-I**

**Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.**

1. Identify the Python data types?  
a. "And" b. {'name': 26} c. [26, 24] d. ('My', 'data') [1]
2. A twisted pair cable is a pair of \_\_\_\_\_ wires that are twisted together to improve electromagnetic capability [1]
3. Rita wants to display a column "TYPE" in table ACCOUNT. Write SQL statement to show which command she should use to select the column and give it an alias "EVENT TYPE"? [1]
4. Which is the default sorting order used in ORDER BY clause? [1]
5. Name the Python Library modules which need to be imported to invoke the following functions : [1]
  - i. writerow()
  - ii. dump()
6. \_\_\_\_\_ is the amount of data transmitted via a given communications Channel in a given unit of time. [1]
7. What is the value of c after executing these statements? [1]  
c = 7//4

- a. 3                      b. 1                      c. 1.75                      d. The statement is incorrect

8. Which command is used to view a table structure? [1]
9. What is an Alternate Key? [1]
10. Give 2 mutable and 2 immutable types in Python? [1]
11. \_\_\_\_\_ is a process of storing data into files and allows it to perform various tasks such as read, write, append, search and modify in files. [1]
12. Which constraint makes sure that all values in a column satisfy a certain criteria? [1]
13. Write an SQL query to print details of workers excluding FIRST\_NAME, “Ronit” and “Nitin” from WORKER table. [1]
14. Which one of these is output of these Python commands? [1]  
`L = [1,3,5,3,1]`  
`print (L.index(3),L.count(3))`  
 a) 12  
 b) 1 2  
 c) 22  
 d) 2 2
15. What is the output of these Python commands? [1]  
`A = (1,2,(3,4),5)`  
`print (len(A), A[2])`
16. \_\_\_\_\_command will test the connectivity between two host [1]
17. What is the output of the following commands? [1]  
`score =20`  
`while score > 1:`  
`score=score//2-1`  
`print(score,end=' ')`
18. Ronit downloaded a harmless looking game from internet. Soon his computer started abnormal functioning. Sometimes it would restart by itself and sometimes it would stop different applications running on it. Which of the following options out of (i) to (iv), would have caused the malfunctioning of the computer? [1]  
 1. Trojan Horse  
 2. Spam Mail  
 3. Computer Bacteria  
 4. Hardware breakdown
19. To read 4th line from text file, which of the following statement is true? [1]  
 a. `dt = f.readlines();print(dt[3])`  
 b. `dt=f.read(4) ;print(dt[3])`  
 c. `dt=f.readline(4);print(dt[3])`  
 d. All of these

20. Which protocol is used for transferring files from one computer to another? [1]

21. Stack is \_\_\_\_\_ data structure. [1]

- FIFO
- LIFO
- POP
- None of above.

### Section-II

**Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question.  
Each question carries 1 mark**

22. Observe the following table carefully and Answer the following questions. [5]

**Table: Store**

Item code	Item	Qty	Rate
10	Gel pen classic	1150	25
11	Sharpener	1500	10
12	Ball pen 0.5	1600	12
13	Eraser	1600	5
15	Ball pen 0.25	800	20

- In the above table, can we have Qty as primary key?
- What is the cardinality and degree of the above table?
- Write a query to display the structure of table store from Mall Database.
- Give the output of following query.  
Select distinct Item from Store;
- If we want to display maximum rate in store from Mall Database. Which command will be use the following:
  - Select min(rent) from resort;
  - Select minimum(rent) from mall;
  - Select min(rent) from mall;
  - Select minimum(rent) from resort;

23. Nyra has a branch1.csv file which has the name, class and section of students. She receives a branch2.csv which has similar details of students in second branch. She is asked to add the details of branch2.csv into branch1.csv. As a programmer, help her to successfully execute the given task. [5]

\_\_a\_\_ csv

file = open('branch1.csv', \_\_b\_\_, newline='');

writer = csv. \_\_c\_\_ (file)

with open('branch2.csv','r') as csvfile:

data = csv.reader(csvfile)

for row in data:

writer.writerow(\_\_d\_\_)

file. \_\_e\_\_ ()

- a. Name the command she should use to include csv library.
- b. In which mode she should open the file to add data into the file
- c. Name the csv method which returns the object responsible for converting user's data into delimited strings
- d. Fill in the blank with the information that needs to be written to csvfile.
- e. Fill in the blank to close the file.

**Part – B**  
**Section-I**

24. Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code. [2]

```
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[i]
```

25. Give full forms of the following? [2]  
1. VOIP, 2. ARPANET, 3. SMTP, 4. RFID

26. Define String in Python? [2]

27. Find and write the output of the following python code: [2]

28. What is the difference between packet switching and circuit switching techniques? [2]

29. Which option is NOT the possible outcome(s) executed from the following code? [2]

```
import random
def main():
    p = "MY PROGRAM"
    i = 0
    while p[i] != "R":
        l = random.randint(0,3) + 5
        print (p[l],end = "_")
        i += 1
main()
```

(i)	(ii)	(iii)	(iv)
M_M_Y_P_	R_G_A_G_	G_G_R_O_	O_G_G_A_

30. Define the following terms : [2]
- Relation
  - Tuple
  - Attribute
  - Domain

31. What is join in SQL? What is difference between Inner-join and Full join? [2]

32. Evaluate the following postfix expression using stack and show the contents of stack after execution of each expression [2]

120, 45, 20, +, 25, 15, -, +, \*

33. Differentiate between CHAR and VARCHAR datatypes in SQL? [2]

### Section- II

34. Write a python function to sum the sequence given below. Take the input n from the user. [3]

$$1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \dots$$

35. Write a function program to do a binary search in an array. [3]

36. Write a program to count the number of upper-case alphabets present in a text file "PYTHON.TXT"

Or

Write a function which takes in an input file and output file. It copies all lines which starts with vowels from the input file to output file. [3]

37. Consider the following tables RESORT and OWNEDBY and answer questions. [3]

**Table : RESORT**

RCODE	PLACE	RENT	TYPE	STARTDATE
R001	GOA	15000	5 STAR	12-JAN-02
R002	HIMACHAL	9000	4 STAR	20-DEC-07
R003	KERALA	12500	5 STAR	10-MAR-06
R004	HIMACHAL	10500	2 STAR	25-NOV-05
R005	GUJARAT	8000	4 STAR	01-JAN-03
R006	GOA	18000	7 STAR	30-MAR-08
R007	ORISSA	7500	2 STAR	12-APR-99
R008	KERALA	11000	5 STAR	03-MAR-03
R009	HIMACHAL	9000	2 STAR	15-OCT-08
R010	GOA	13000	5 STAR	12-APR-06

**Table : OWNEDBY**

Place	Owner
Goa	Raj Resorts
Kerala	KTDC
Himachal	HTDC
Gujarat	MAHINDRA RESORTS
Orissa	OTDC

**Give output for the following SQL queries:**

1. Select min(rent) from resort where place = 'KERALA';
2. Select type, start date from resort where type '2 STAR' orderby startdate,
3. Select place, owner from ownedby where place like "%a";

### Section III

38. Write answer of the following

[5]

Simply Coding is a computer institute aimed to uplift the standard of computer knowledge 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, C Town and 3 Villages as given.

As a network consultant, you have to suggest the best network related solution for their issues/problems raised in (i) to (iv) keeping in mind the distance between various locations and given parameters.



Shortest distance between various locations:

Village 1, 2, 3 to C Town	1 to 2 km
Distance between the villages	3 – 4 km
City Head Office to C Town	50 km

Number of computers installed at various locations are as follows:

C Town	50
Village 1	10
Village 2	15
Village 3	8
City Head Office	25

1. Suggest the most appropriate location of the SERVER in the HUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer.
2. Suggest the best wired medium for network.
3. Draw the cable layout (location to location) to efficiently connect various locations within the HUB
4. Which hardware device will you suggest to connect all the computers within each location of HUB?
5. Which server/protocol will be most helpful to conduct live interaction of Experts from Head office and people at HUB locations?

39. Consider the following tables EMPLOYEE and SALGRADE and answer this question:

Table : Employee

Ecode	Name	Design	SGrade	DOJ	DOB
101	Abdul Ahmad	Executive	S03	23-Mar-2003	13-Jan-1980
102	Ravi Chander	Head-IT	S02	12-feb-2010	22-Jul-1987
103	John Ken	Receptionist	S03	24-Jun-2009	24-Feb-1983
105	Nazar Ameen	GM	S02	11-Aug-2006	03-Mar-1984
108	Priyam Sen	CEO	S01	29-Dec-2004	19-Jan-1982

Table : SalGrade

Sgrade	Salary	HRA
S01	56000	18000
S02	32000	12000
S03	24000	8000

Write SQL commands for the following statements

[5]

- To display the details of all employees in descending order of DOJ.
- To display NAME and DESIGN of those employees, whose salary grade is either S02 or S03.
- To display the content of all EMPLOYEE table, whose DOJ is in between '09-Feb-2006' and '08-Aug-2009'.
- To display the details of all employee who has joined before 1985 from employee table.
- To add a new row with the following data:  
109, 'Harish Roy', 'Head-IT', 'S02', '09-Sep-2007', '21-Apr-1983'

40. Write a function to write numbers into a binary file and another function to read the same.

[5]

OR

A binary file "phonebook.dat" has structure [Name, PhoneNo].

- Write a user defined function append\_record() to input data for a record and add to phonebook.dat .
- Write a function search\_record() in Python which takes in a name and prints only those records which matches that name.