



**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 questions 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 valid variable name in Python? [1]  
a. \_123      b. Value\$      c. False      d. FOR
2. Which operator defines a range of values that a column values must fall in to make condition true. [1]
3. The \_\_\_\_\_Address refers to the physical address assigned by NIC manufacturer. [1]
4. Which SQL function returns the number of rows in a column or expression? [1]
5. Name the modules to which the following functions belong: [1]
  - i. dump()
  - ii. writerow()
6. Write SQL query to add a column total price with datatype numeric and size 10, 2 in a table product. [1]
7. Identify which ones are mutable and immutable in Python? [1]  
a. boolean   b. list   c. strings   d. tuples

8. Which one of these is an invalid command if  $L = (1,2,3)$ ? [1]
- $a,b,c = L$
  - $L[0] = 4$
  - $L += (5,2)$
  - $L = L*2$
9. A \_\_\_\_\_ works like a bridge but can handle different protocols. [1]
10. Why can't Lists be used as keys in Python dictionary? [1]
11. If  $str = \text{"amazing"}$  What is the output of  $str[:] + str[-1:-3]$ ? [1]
12. Which constraint is used to uniquely identify each row in the table? [1]
13. Which one of these is output of these commands? [1]
- ```
L = list( (1,2,3,4))
L.insert(5,6)
L.pop(2)
print (L)
```
- $[1,2,3,4]$
  - $[1,2,4,6]$
  - $[1,3,4,6]$
  - $[1,2,3]$
14. \_\_\_\_\_ are files stored temporarily on browser's computer which allow the server to store persistent information associated with browsing user. [1]
15. Consider the following code: what is the value of a at the end? [1]
- ```
a=[1,2,3]
a[2]= 0
a[a[2]] = 5
a[1:2] = [ ]
print(a)
```
16. Which command is used to modify data in the tables? [1]
17. Name the function / method required for: [1]
- Finding second occurrence of m in madam.
  - Get the position of an item in the list
18. Write a SQL query to find the names (field: NAME) of employees from table EMP that begin with 'A'? [1]
19. Gita is setting up a password for her online banking account. Give 2 suggestions to her on password formation so that her account is not easily hacked. [1]
20. Every file has its own identity associated with it. Which is known as – [1]
- icon

- b. extension
- c. format
- d. file type

21. What is remote desktop?

[1]

### 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 Student table and answer the part (i) to (v) accordingly.

[5]

| Mno | Name      | Qty | Purchase date |
|-----|-----------|-----|---------------|
| 101 | Pen       | 102 | 12-12-2011    |
| 102 | Pencil    | 201 | 21-02-2012    |
| 102 | Eraser    | 90  | 09-08-2012    |
| 109 | Sharpener | 90  | 31-08-2012    |
| 113 | Clip      | 900 | 08-08-2011    |

- a. In the above table, can we take Mno as Pri-mary key ? (Answer as [Yes/No] only.) Justify your answer with a valid reason.
- b. What is the degree and the cardinality of the above table?
- c. Insert the following data into the attributes Mno, Name and Qty respectively in the given table.  
Mno = 110, Name = "Pen" and Qty = 125
- d. If we remove the table student from the database School.  
Which command will he use from the following:
  - a. DELETE FROM student;
  - b. DROP TABLE student;
  - c. DROP DATABASE School;
  - d. DELETE student FROM School;
- e. Now if we wants to display the structure of the table student, i.e, name of the attributes and their respective data types that he has used in the table. Write the query to display the same.

23. Geet has a csv file which has the name and class of students. She is asked to input the marks for each of them from user and write to a new csv file. As a programmer, help her to successfully execute the given task.

[5]

```
import csv

file = open('marks.csv', 'w', __a__);
wt = csv.__b__(file)

with open('student.csv') as csvfile:
    data = csv.__c__(csvfile)
    for row in data:
        print ("Student name:",row[0],"Class:",row [1])
        marks = int (__d__ ("Enter Total marks: "))
        wt.__e__([row[0],row[1],marks])
```

file.close()

- Fill in blank with parameter to be passed to remove the extra newline character
- Name the csv method which returns the object responsible for converting user's data into delimited strings
- Name the csv method which return a object to iterate over lines in the given csvfile
- Give the command to take in value from user.
- Name the method to write to csv 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]

```
i=10
n=100
while [i<=n]:
    print i
i+=10
```

25. Give Full forms of the following? [2]  
1.WLL, 2. IMAP, 3. HTTPS, 4. SSL

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

```
n=26
v=0
while(n > 0):
    a= n % 10
    v=(v * 10)+a
    n=n // 10
print(v)
```

27. What is the difference between where and having clause? [2]

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

```
v =[1,2]
def manip (values):
    for i in range(1,4):
        values.append(i)
        print(values)
    manip(v)
```

29. Define the following : [2]  
Candidate key  
Alternate key

30. What is the output of this program? [2]

```

for i in range(1,11):
    if(i==3):
        print("hello", end=' ')
        continue
    if(i==8):
        break
    if(i==5):
        pass
    else:
        print(i, end=' ');

```

31. What is the difference between SMTP and POP3 protocol? [2]

32. What are DDL and DML commands? [2]

33. Rewrite the following programs after removing syntactical errors: [2]

```

for=20
for1=50:
for3=for+for1+for2
print(for3)

```

## Section- II

34. Write a program to find that the given number is prime numbers or not. [3]

35. Write a function that takes in two text files and copies all lines from first file to second, barring the lines starting with “a”.

OR

Write a program to count the words “to” and “the” present in a text file “python.txt”. [3]

36. Consider the following tables WORKER and PAYLEVEL and answer this question:

Table : WORKER

| ECODE | NAME         | DESIGN     | PLEVEL | DOJ          | DOB         |
|-------|--------------|------------|--------|--------------|-------------|
| 11    | Radhe Shyam  | Supervisor | P001   | 13-Sept-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      |

Give the output of the following SQL queries : [3]

1. SELECT COUNT (PLEVEL), PLEVEL FROM WORKER GROUP BY PLEVEL;

2. SELECT Name,PAY FROM WORKER  
W,PAYLEVEL P WHERE W.PLEVEL=  
P.PLEVEL AND W.ECODE<13;
3. SELECT COUNT (DISTINCT DESIGN) FROM WORKER;

37. Write a program to perform insert and delete a Queue containing Members details as given in the following definition of each item: [3]

|            |         |
|------------|---------|
| MemberName | String  |
| Age        | integer |

OR

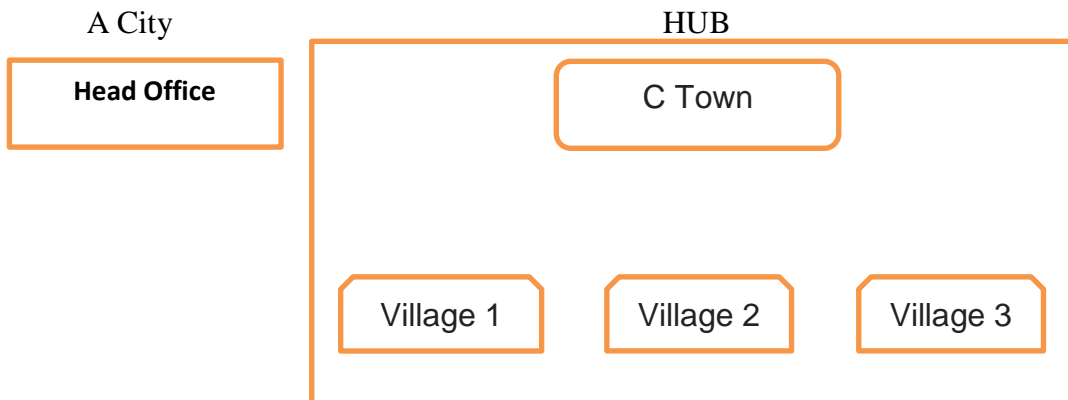
Obtain the postfix notation for the following infix notation of expression showing the contents of the stack and postfix expression formed after each step of conversion. [3]

$A*B + (C-D/F)$

### 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) and (v) 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 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 a suitable network topology between the villages and the town.
3. Suggest the best wired medium to efficiently connect various villages with town in 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 YHUB locations?

39. Answer the questions on the basis of the following tables SHOP and ACCESSORIES.

**Table : Shop**

| <b>Id</b> | <b>SName</b>       | <b>Area</b> |
|-----------|--------------------|-------------|
| S01       | ABC computronics   | CP          |
| S02       | All Infotech Media | GK II       |
| S03       | Tech Shop          | CP          |
| S04       | Geeks Tecno Soft   | Nehru Place |
| S05       | Hitech Tech Store  | Nehru Place |

**Table : Accessories**

| <b>No</b> | <b>Name</b>  | <b>Price</b> | <b>Id</b> |
|-----------|--------------|--------------|-----------|
| A01       | Mother Board | 12000        | S01       |
| A02       | Hard Disk    | 5000         | S01       |
| A03       | Keyboard     | 500          | S02       |
| A04       | Mouse        | 300          | S01       |
| A05       | Mother Board | 13000        | S02       |
| A06       | Keyboard     | 400          | S03       |
| A07       | LCD          | 6000         | S04       |
| T08       | LCD          | 5500         | S05       |
| T09       | Mouse        | 350          | S05       |
| T10       | Hard Disk    | 4500         | S03       |

Write the SQL queries:

[5]

1. To display Name and Price of all the Accessories in ascending order of their Price.
2. To display Id and SName of all Shop located in Nehru Place.
3. To display Minimum and Maximum Price of each Name of Accessories.
4. To display Name, Price of all Accessories and their respective SName where they are available.
5. To display the price, Name and Id of those Accessories which have Id is S04.

40. A binary file "PHONE.DAT" has structure [Name, PhoneNo]. Write a function append() to add more records to the file and a function update() to edit the phone numbers of "Ronit" in file. If there is no record for "Ronit" report error.

[5]