



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 the type of operator (Arithmetic, Logical, Relational etc.)? [1]
 - a. **
 - b. !=
 - c. and
 - d. in
2. Which constraint is used to ensure referential integrity of data? [1]
3. What is Computer Network? [1]
4. Which option causes a group function to discard all duplicate values and take only unique values? [1]
5. Name the Python Library modules which need to be imported to invoke the following functions : [1]
 - i. load()
 - ii. exp()
6. Which operator is used to specify a list of values to match in a query? [1]
7. _____ cable consist of solid wire core surrounded by one or more foils separated by an insulator. [1]

8. A _____ is a networking device having multiple ports that are used for connecting multiple computers or segments of a LAN together. [1]
9. Write an SQL query to print details of the student from STUDENT Table, whose FIRST_NAME ends with 's' and contains six alphabets. [1]
10. What is the value of x and y after executing these statements? [1]
`x,y = 5,10`
 a. `x=5, y=10` b. `x=10, y=5` c. `x=y=5.10` d. The statement is incorrect
11. Select which false for Python function [1]
 a. A function is a code block that only executes when it is called.
 b. Python function always returns a value.
 c. A function only executes when it is called and we can reuse it in a program
 d. Python doesn't support nested function
12. Write single line expression to reverse a string `str = "amazing"`. [1]
13. Which one of these is output of these commands? [1]
`L = list((1,2,3,4))`
`L.pop(2)`
`print (L)`
 a) `[1,2,4]`
 b) `[1,3,4]`
 c) `(1,2,4)`
 d) `(1,2,4)`
14. CSV files are opened with _____ argument to suppress EOL translation. [1]
15. Keyword _____ marks the start of function header. [1]
16. Which string method is used to implement the following: [1]
 i. To count the number of character in the string.
 ii. To check whether the first character of string in capital letter.
17. Write an SQL query to fetch "NAME" from EMP table using the alias name as "EMPLOYEE"? [1]
18. Identify what cybercrime is committed in following case. [1]
 Nihir managed to download and watch latest movie from a suspicious site. What right of the owner has he violated?
19. Yuvna is receiving lots of unwanted mails from an unknown site. What are these mails called? [1]
20. In `f=open("data.txt", "r")`, r refers to _____. [1]
 a. File handle
 b. File object
 c. File Mode

d. Buffer

21. If you specify _____ in COUNT() function, it returns all rows, including duplicates and null. [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 table 'Student' given below And Answer the following question [5]

RollNo	Name	Acode	Class	Marks
1	Nabi Ahmad	101	11	95
2	Ravi Sahai	108	12	85
3	Jatin	101	11	98
4	Nazneen	103	12	87

- What is the cardinality and degree of the given table?
- In the above table, which column can be set as primary key?
- Insert the following data into the attributes RollNo and Name respectively in the given table.
RollNo = 10, Name = "Priyanka"
- If we want to display maximum marks from the student table from the database School.
Which command will he use from the following:
 - SELECT MAX(Marks) FROM student;
 - SELECT MAXIMUM(Marks) FROM student;
 - SELECT MAXIMUM Marks FROM School;
 - SELECT MAX(Marks) FROM School;
- If we want to display whole the table student, i.e, all column and rows in the table. Write the query to display the same.

23. Ronit has received a email.csv file which has email addresses of all students in the school. It has name and domain separated by semicolon. He has to print the addresses on the screen separated by @ sign. As a programmer, help him to successfully execute the given task. [5]

e.g. of email.csv

```
yuvna      gmail.com
nihir      msn.com
```

Expected Output on Screen

```
yuvna@gmail.com
nihir@msn.com
```

Program

 a csv

with b ('email.csv') as csvfile:
data = csv.reader(csvfile, c)

```
for d in data:
    print( row[0], row[1], e )
```

- Name the command he should use to include csv library.
- Name the command he should use to access the file
- How should he use to indicate there is tab in between name and domain?
- What variable should be read from the data in for statement?
- What should he use to include @ in between name and domain in the print statement.

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]

```
def main():
    r=input('enter any radius:')
    a=math.pi * math.pow(r,2)
    print "Area=",a
```

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

26. Give Full forms of the following? [2]

1. UDP,
2. HTTP,
3. DNS,
4. TLS

27. What is the difference between DROP and DELETE Command in SQL? [2]

28. Convert the following for loop into while loop. [2]

```
for i in range(5):
    for j in range(i):
        print ('$',end=' ')
    print (' ')
```

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

```
score=40
while score>1:
    score=score//2-1
    print(score)
```

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

```
S="salute to the army"
```

```
def manip(string):
    count = 3
    while True :
        if string[0]=='s':
            string=string[2:]
        elif string[-1]=='y':
```

```

        string=string[:4]
    else:
        count+=1
        break
    print (count)
    return (string)
S = manip(S)
print (S)

```

31. Consider the following code: If y has the value 2 after executing the above program fragment, then what do you know about the initial value of x? [2]

```

if x > 3:
    if x <= 5:
        y = 1
    elif x != 6:
        y = 2
    else:
        y = 3
else:
    y = 4

```

32. What is the importance of a primary key in a table ? Explain with a suitable example. [2]

33. What is NIC device and a MAC Address? [2]

Section- II

34. Write a program to convert decimal number to binary. [3]

Ans.

```

i= 1
B_num= 0
D_num= int (input("Enter the decimal to be converted:"))
while D_num > 0:
    rem= D_num % 2
    B_num= B_num + (i * rem)
    D_num= D_num // 2
    i= i * 10
print("The binary of the given number is:", B_num )

```

35. Write a program to display all the records in a file “python.txt” along with line/record number?

OR

A text file “PYTHON.TXT” contains alphanumeric text. Write a program that reads this text file and prints only the numbers or digits in the file. [3]

36. Consider the following tables GAMES and PLAYER and answer this question :

Table : Games

Gcode	GameName	Type	Number	Prize Money	Schedule Date
101	Carom Board	Indoor	2	5000	23-Jan-2004
102	Badminton	Outdoor	2	12000	12-Dec-2003
103	Table Tennis	Indoor	4	8000	14-Feb-2004
104	Chess	Indoor	2	9000	01-Jan-2004
108	Lawn Tennis	Outdoor	4	25000	19-Mar-2004

Table : Player

Pcode	Name	Gcode
1	Nabi Ahmad	101
2	Ravi Sahai	108
3	Jatin	101
4	Nazneen	103



Give the output of the following SQL queries:

[3]

1. SELECT COUNT(DISTINCT Number) FROM GAMES;
2. SELECT MAX(ScheduleDate), MIN(ScheduleDate) FROM GAMES
3. SELECT * FROM Games WHERE PrizeMoney BETWEEN 5000 AND 10000 ;

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

[3]

MemberName String
Age integer

OR

Evaluate the following postfix notation of expression :

[3]

20, 10, +, 5, 2, *, -, 10, /

Section III

38. Simply Coding is an online training company for IT related courses. The company is setting up their new campus in Delhi. You as a network expert have to study the physical locations of various blocks and the number of computers to be installed. In the planning phase, provide the best possible answers for the queries (i) to (v) raised by them.

[5]

Physical Location of the Building

Admin
20 computers

Conference
120 computers

Faculty
40 computers

Block to Block Distances(in Mtrs.)

From	To	Distance
Admin	Faculty	100
Admin	Conference	80
Conference	Faculty	60

1. Suggest the most appropriate block, where Simply Coding should plan to install the server.
2. Suggest the most appropriate block to block cable layout to connect all three blocks for efficient communication.
3. Which type of network out of the following is formed by connecting the computers of these three blocks?
 - LAN
 - MAN
 - WAN
4. Suggest the placement of i) modem ii) Hub/Switch in the network.
5. Which wireless channel out of the following should be opted by Simply Coding to connect to students from all over the world?
 - Infrared
 - Microwave
 - Satellite

39. 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

Write SQL commands for the following statements:

[5]

1. To display the name of all Workers in descending order of DOB.
2. To display NAME and DESIGN of those Workers, whose PLEVEL is either P001 or P002
3. To display the content of all the workers table, whose DOB is in between '19-JAN- 1984' and '18-JAN-1987'.
4. To display most recent join date of worker.

5. To add a new row with the following:
19, 'DayaKishore', 'Operator', 'P003', '19- Sep-2008', '11-Jul-1984'
40. A binary file "STUDENT.DAT" has structure (rollno, Name, marks). Write a function update() in Python that would take in roll no of a student and revised marks. Update the binary file as per data given by user. [5]