

Pre Board Examination 2020-21
SUBJECT: Computer Science(083)
CLASS: XII

Time: 3 Hrs

Marks: 70

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 sub- parts. An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
 - a. Section-I is short answer questions of 2 marks each in which two question have internal options.
 - b. Section-II is long answer questions of 3 marks each in which two questions have internal options.
 - c. 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

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

1. Find out the Invalid Identifier from the following
 - a) Book b) False c) My.Data d) 5cb
2. What output will display of `print(M[-5:])` from `M=[12,43,-4,-5,6,8,12,9]`
3. What do you mean by CSV file.
4. Identify the Invalid arithmetic operator.
 - (a) + (b) // (c) and (d) **
5. Suppose a tuple T is declared as `T = (10, 12, 43, 39)`, which of the following is incorrect?
 - a) `print(T[1])` b) `T[2] = -29` (c) `print(max(T))` (d) `print(len(T))`
6. Declare a dictionary to store students information with keys [1,2,3] and name ['Akash', 'Bikash', 'Arati']
7. csv file can be created or edited using _____
8. Name the built-in mathematical function / method that is used to return an absolute value of a number.
9. _____ is a standard protocol for accessing e-mail from local server.
10. _____ is a set of communications rules that allow two or more network devices to communicate..
11. 'Manish copied data from server of an organization and selling it to the other organisation' - what type of cyber crime is committed by Manish.
12. In SQL _____ is used to put condition with group by clause.
13. In SQL, what is the role of IS NOT NULL Operator.
14. Give example of single row and multiple row function each.
15. Which of the following is not a DDL statement.
 - (a) Select (b) Alter (c) Drop (d) Create
16. Which transmission media is best for most populated area.

17. Which of the is an example of mutable data type
 (a) String (b) List (c) tuple (d) None of these
18. Name the protocol used for upload or download a file.
19. In SQL, write the query to display the list of Database file stored in.
20. The Select clause _____ is used to collect those rows that have same value in a specified column.
21. Rearrange the following terms in increasing order of data transfer rates
 UTP, thicknet , multimode

Section-II

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

22. A Computer Store ‘ABC’ is considering to maintain their inventory using SQL to store the data. As a database administer, Simran has decided that : 5
- Name of the database - Inventory
 - Name of the table - Mydata
 - The attributes of STORE are as follows: Productcode , Brandname, ProductName, Quantity,Price
 - (a) Write the appropriate attribute for primary key.
 - (b) Write the data type of product code that store data like A001, B002
 - (c) To display the Productcode with produuctname which price not lies between 5000 to 10000
 - (d) To display the different brandname of table Mydata.
 - (e) To increase the price of all product by 100.

23. Ranjan Kumar of class 12 is reading data from a CSV file “innovators.csv” which will contain some data with headings [sno, name, contribution] He has written the following code. As a programmer, help him to successfully execute the given task. 5

```
import _____ //line 1
file=open(“innovators.csv”, _____) //line2
rec=csv._____(file) //line 3
for c in ____: //line 4
    print(c)
file._____ //line5
```

Fill up the blanks. (each line carries 1 mark)

Part-B

Section -I

24. Rewrite the following code after removing syntax error: 2
- ```
Num=input(“Enter number”)
for i in range (1, Num)
 if Num%i = 0 :
 print Num*2
 else:
 print(Num*3)
```

25. Difference between shareware and freeware 2

OR

List the difference between server side scripting and client side scripting.

26. Expand the following term

- (a) CDMA                      (b)GPRS                      (c) WLL                      (d) HTTPS

27. What is local and global variable? Is global is keyword in python? 2

OR

What do you mean by keyword argument? Explain with example.

28. What will be the possible outcome(s) executed by the following program and specify the maximum and minimum value for N 2

```
import random
nav=['left', 'front', 'right', 'back']
num = random.randint(1,3)
navg=""
for c in range (num,1,-1):
 navg=navg+nav[c]
print(navg)
```

- (i) backright            (ii) backrightfroot    (iii) back    (iv) leftfrontright

29. Define foreign key with the help of example. 2

30. (a) What is the package used for creating a python database connectivity application? 1

(b) Which method is used to check whether mysql connected with python? 1

31. Give output of the following code (ignore errors if any) 2

```
i=5
j=7
x=0
i=i+(j-i)
x=j+i
print x, ":", i
j=j**2
x=j+i
i=i+1
print i, ":", j
```

32. Consider the following table

Teacher :

| Tno | Tname   | Subject  | Class Taught |
|-----|---------|----------|--------------|
| 101 | Hirak   | Comp.Sc. | XI,XII       |
| 102 | Subhash | Maths    | X,IX         |
| 103 | Chanda  | Eng      | XI           |

(i) Identify the Suitable Primary key. 1

(ii) What is the degree and cardinality of teacher table. 1

33. Find and write the output of the following Python code: 2

```
Data =['D','o',' ','I','t',' ','@',' ','1','2','3',' ','!']

for i in range (len(Data)-1):

 if (Data[i].isupper()):
 Data[i]=Data[i].lower()
 elif (Data[i].isspace()):
 Data[i]=Data[i+1]
print Data
```

## Section-II

34. Write a user defined function in python that accept a string as a parameter and display the those words from the string that starts with capital vowel. 3

Support str= Exam Of Class Eleven

It will display Exam Of Eleven

35. Define a function AUcounter() that count and display number of A and U present in a text file 'A.txt' e.g.CARRY OVERCOAT AND UMBRELLA WHEN IT RAINS 3

It will display A: 4

U : 1

OR

Write a user-defined function named **Count()** that will read the contents of text file named "**Report.txt**" and count the number of lines which starts with either „I“ or „M“ . 3

E.g. In the following paragraph, there are 2 lines starting with „I“ or „M“:

*“India is the fastest growing economy.*

*India is looking for more investments around the globe.*

*The whole world is looking at India as a great market.*

*Most of the Indians can foresee the heights that India is capable of reaching.”*

36. Consider the following table 3

Table : Transaction

| ID  | Name     | Amount | Dept         |
|-----|----------|--------|--------------|
| 101 | Nimisha  | 78000  | HRD          |
| 102 | Krishanu | 65000  | Front Office |
| 103 | Risha    |        | HRD          |
| 104 | Tanmay   | 98000  | HRD          |
| 105 | Nirmoy   | 15000  | Front Office |

What output will produce by the following to statement

(i) Select Dept, sum(amount) from transaction group by Dept ;

(ii) Select avg(amount) from transaction;

(iii) Select name, dept from Transaction where name like ‘\_i%’;

37. Write a function in python, MakePush(Package) and MakePop(Package) to add a new Package and delete Package from a List of Package Description, considering them to act as push and pop operations of the Stack data structure. 3

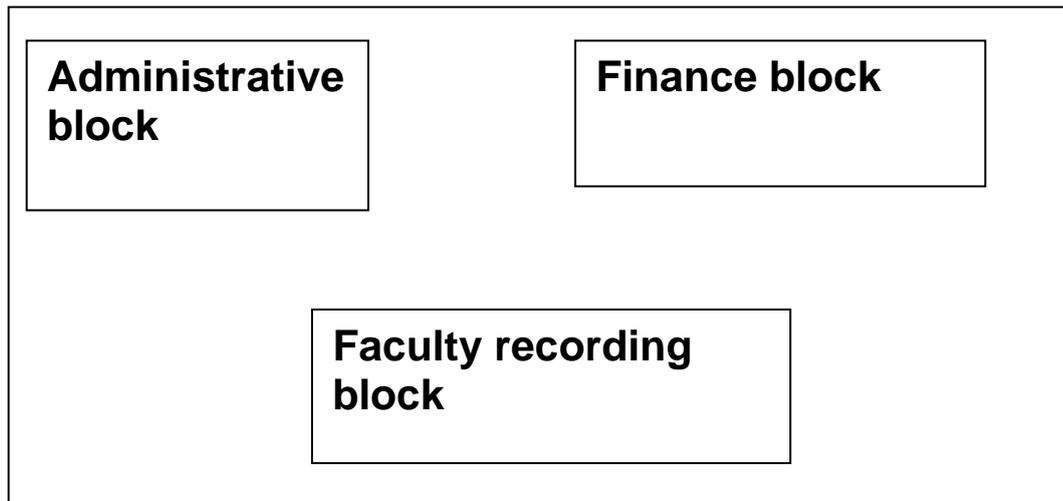
OR

Convert the following Infix expression to its equivalent Postfix expression, showing the stack contents for each step of conversion. 3

$P/Q+(R-T)*U$

## SECTION-III

38. Rovenza communications international (RCI) is an online corporate training provider company for IT related courses. The company is setting up their new campus in Kolkata. You as a network expert have to study the physical locations of various blocks and the number of computers installed. In the planning phase, provide the best possible answers to the queries (i) to(v) raised by them. 5



**BLOCK TO BLOCK DISTANCE (IN METRES)**

| From                 | To                      | Distance |
|----------------------|-------------------------|----------|
| Administrative Block | Finance Block           | 60       |
| Administrative Block | Faculty Recording Block | 120      |
| Finance Block        | Faculty Recording Block | 70       |

**Expected computers to be installed in each block**

| Block                   | Computers |
|-------------------------|-----------|
| Administrative Block    | 30        |
| Finance Block           | 20        |
| Faculty Recording Block | 100       |

- (i) Suggest the most appropriate block, where RCI should plan to install the server.
- (ii) Suggest the most appropriate block to block cable layout to connect all three blocks for efficient communication.
- (iii) Which type of network out of the following is formed by connecting the computers of these three blocks?  
 a) LAN                      b) MAN                      c) WAN
- (iv) Which wireless channel out of the following should be opted by RCI to connect to students from all over the world?  
 a) Infrared                      b) Microwave                      c) satellite
- (v) Suggest a device/software and its placement that would provide data security for the entire network of the School.

39. Write SQL statements for the q.no (i) to (iv) and output for (v)

1 X 5 = 5

Table: Employees

| Empid | Firstname | Lastname | Address           | City      |
|-------|-----------|----------|-------------------|-----------|
| 010   | Ravi      | Kumar    | Raj nagar         | GZB       |
| 105   | Harry     | Waltor   | Gandhi nagar      | GZB       |
| 152   | Sam       | Tones    | 33 Elm St.        | Paris     |
| 215   | Sarah     | Ackerman | 440 U.S. 110      | Upton     |
| 244   | Manila    | Sengupta | 24 Friends street | New Delhi |

|     |        |          |                  |            |
|-----|--------|----------|------------------|------------|
| 300 | Robert | Samuel   | 9 Fifth Cross    | Washington |
| 335 | Ritu   | Tondon   | Shastri Nagar    | GZB        |
| 400 | Rachel | Lee      | 121 Harrison St. | New York   |
| 441 | Peter  | Thompson | 11 Red Road      | Paris      |

Table: EmpSalary

| Empid | Salary | Benefits | Designation |
|-------|--------|----------|-------------|
| 010   | 75000  | 15000    | Manager     |
| 105   | 65000  | 15000    | Manager     |
| 152   | 80000  | 25000    | Director    |
| 215   | 75000  | 12500    | Manager     |
| 244   | 50000  | 12000    | Clerk       |
| 300   | 45000  | 10000    | Clerk       |
| 335   | 40000  | 10000    | Clerk       |
| 400   | 32000  | 7500     | Salesman    |
| 441   | 28000  | 7500     | salesman    |

Write the SQL commands for the following :

- (i) To show firstname,lastname,address and city of all employees living in paris
- (ii) To display the content of Employees table in descending order of Firstname.
- (iii) To display the firstname,lastname and total salary of all managers from the tables Employee and empsalary , where total salary is calculated as salary+benefits.
- (iv) To display the maximum salary among managers and clerks from the table Empsalary.
- (v) To display the average salary of Clerk

40. Write a function in python to search and display details of all those students, whose stream is "HUMANITIES" from pickled file "Student.dat". Assuming the pickled file is containing some students in the form of a dictionary with keys [rno, name, stream, salary] 5

OR

A binary file "Book.dat" has structure [BookNo, Book\_Name, Author, Price]. 5

- i. Write a user defined function *CreateFile()* to input data for a record and add to Book.dat .
- ii. Write a function *CountRec(Author)* in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat"

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