



**INDIAN SCHOOL MUSCAT
FIRST PRE-BOARD EXAMINATION
COMPUTER SCIENCE**

CLASS: XII

Sub. Code: 083

Time Allotted: 3 Hrs.

14.03.2021

Max. 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 has 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**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. Which of the following are Keywords in Python? 1
(a) break (b) check (c) range (d) While
2. Find the output - 1
A = [17, 24, 15, 30]
A.insert(2, 33)
print (A [-4])
3. Which of the following are valid operator in Python: 1
(a) */ (b) is (c) ^ (d) like
4. Which of the following statements will create a tuple? 1
(a) Tp1 = ("a", "b") (b) Tp1= (3) * 3
(c) Tp1[2] = ("a", "b") (d) None of these

5. The name of the current working directory can be determined using _____ method. 1
6. What is the significance of site packages in Python? 1
7. What will be the result of the following code? 1


```
d1 = {"abc" : 5, "0" : 21, 0 : "def" }
```

(a) abc (b) 21 (c) {"abc":5} (d) def
8. Find the output of the following: 1


```
>>>S = 1, (2,3,4), 5, (6,7)
>>> len(S)
```
9. What is an IP address? 1
10. Aman received a mail from Income Tax department on clicking "Click –Here", he was taken to a site designed to imitate an official looking website, such asIncometax.gov. He uploaded some important information on it. Identify and explain the cybercrime being discussed in the above scenario. 1
11. Identify the valid statement for list L=[1,2,"a"]:
 (a) L.remove("2")
 (b) L.del(2)
 (c) del L[2]
 (d) del L["a"] 1
12. What do you mean by domain of a relation? 1
13. Write the expanded form of GPRS? 1
14. Which is not a constraint in SQL? 1
 - a. Unique
 - b. Distinct
 - c. Primary key
 - d. check
15. What is a cursor? 1
16. What is meant by parameterized query? 1
17. What is the output of the following? 1


```
d = {0: 'a', 1: 'b', 2: 'c'}
for x, y in d.items():
    print(x, y, end = '')
```
18. Suppose list1 = [0.5 * x for x in range(0,4)], list1 is 1
 - a) [0, 1, 2, 3]
 - b) [0, 1, 2, 3, 4]
 - c) [0.0, 0.5, 1.0, 1.5]
 - d) [0.0, 0.5, 1.0, 1.5, 2.0]

19. If column “salary” of table “EMP” contains the dataset {10000, 15000, 25000, 10000, 25000}, what will be the output of following SQL statement?
SELECT SUM(DISTINCT SALARY) FROM EMP;
a) 75000 b) 25000 c) 10000 d) 50000
20. What is the IT act? 1
21. Name the most economic transmission media suited for networking computers in hilly areas. 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 table and answer the question (a) to (e) (Any 04)

TABLE: VISITOR

VisitorID	VisitorName	ContactNumber
V001	ANAND	9898989898
V002	AMIT	9797979797
V003	SHYAM	9696969696
V004	MOHAN	9595959595

- (a) Write the name of most appropriate columns which can be considered as candidate keys? 1
 (b) Out of selected candidate keys, which one will be the best to choose as Primary key? 1
 (c) What is the degree and cardinality of the table? 1
 (a) Insert the following data into the attributes VisitorID, VisitorName and ContactNumber respectively in the given table VISITOR. 1

VisitorID = “V004”, VisitorName= “VISHESH” and ContactNumber= 9907607474

- (e) Remove the table VISITOR from the database HOTEL. Which command will he use from the following:

- i) DELETE FROM VISITOR; 1
 ii) DROP TABLE VISITOR;
 iii) DROP DATABASE HOTEL;
 iv) DELETE VISITOR FROM HOTEL;

23. Hrithik Roshan of class 12 is writing a program to create a CSV file “emp.csv”. He has written the following code to read the content of file emp.csv and display the employee record whose name begins from “S” also show no. of employee with first letter “R” out of total record. As a programmer, help him to successfully execute the given task.

Consider the following CSV file (emp.csv):

1,Arun,3500
 2,Ravi,4000
 3,Ben,5000
 4,Ronan,2500

```

:
import _____ # Line 1
def SNames():
    with open(_____) as csvfile: # Line 2
        myreader = csv._____(csvfile, delimiter=',') # Line 3
        count_rec=0
        count_s=0
        for row in myreader:
            if row[1][0].lower()=='r':
                print(row[0],',',row[1],',',row[2])
                count_s+=1
                count_rec+=1
            print("Number of 'R' names are ",count_s,"/",count_rec)

```

- (a) Name the module he should import in Line 1 1
- (b) In which mode, Varun should open the file to print data. 1
- (c) Fill in the blank in Line 2 to open the file. 1
- (d) Fill in the blank in Line3 to read the data from a csv file. 1
- (e) Write the output he will obtain while executing the above program. 1

Part – B

Section-I

23. How is equi-join different from natural-join? Give example. 2
24. What is the difference between hub and switch? Which is more preferable in a large network of computers and why? 2

OR

Differentiate between WAN and MAN. Also give an example of WAN.

25. Expand the following terms: a) POP b. WiFi c. CDMA d. XML 2
26. What do you mean by scope of a variable in Python? What are LEGB rules? 2

OR

Differentiate between keyword arguments and positional types of formal arguments in Python, with example.

27. Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code. Also write the output obtained after the corrections. 2
 marks={"hin"-30,"eng"-40,"math"-50}
 For key in Marks
 print(marks[key])
28. Consider the following code and find out the possible output(s) from the options given below. Justify your answer 2

```

import random as r
print(10 + r.randrange(10,15) , end = ' ')
print(10 + r.randint(10,15) , end = ' ')
print(10 + r.randrange(10,15) , end = ' ')
print(10 + r.randint(10,15))

```

- a) 25 25 25 21 b) 23 22 22 25 c) 23 22 25 20 d) 21 25 20 24

29. Define a)Degree of a relation b) tuple in a relation 2
30. Differentiate between the file modes 'a' and 'w' in text files. 2
31. Answer the following : 2
- a. Explain the join function of string with an example.
 - b. Name two functions from module urllib.
32. What is the difference between order by and group by in SQL? Explain with example. 2
33. Find and write the output of the following Python code: 2
- ```
def chess():
 Moves= [4, 7, 9, 13]
 Queen=Moves
 Moves[2]+=19
 L=len(Moves)
 for i in range (L):
 print("Now@", Queen[L-i-1], "#", Moves [i])
chess()
```

### Section- II

34. Write a Python function **Binary\_search(Arr,d)** to search for a number in a sorted list of numbers using binary search method assuming the list is sorted in ascending order. The list **Arr** and the number to search, **d** are passed as arguments to the function            3
35. Write a function **endswith()** in Python that prints words which ends with letter 's' or 'p' present in a text file '**Frost.txt**'.            3

If 'Frost.txt' contents are as:

Woods are lovely dark and deep  
But I have promises to keep  
And miles to go before I sleep

**Output should be :**

Woods deep promises keep miles sleep

**OR**

Write a function filter(oldfile, newfile) that copies all the lines of a text file "**source.txt**" onto "**target.txt**" except those lines which starts with "@" sign.

36. Consider the following tables COMPANY and MODEL. Write SQL commands for the statements 3

**Table: COMPANY**

| CompID | CompName | CompHQ    | ContactPerson |
|--------|----------|-----------|---------------|
| 1      | Titan    | Okhla     | C.B. Ajit     |
| 2      | Ajanta   | Najafgarh | R. Mehta      |
| 3      | Maxima   | Shahdara  | B. Kohli      |
| 4      | Seiko    | Okhla     | R. Chadha     |
| 5      | Ricoh    | Shahdara  | J. Kishore    |

**Table: MODEL**

| Model_ID | Comp_ID | Cost | DateOfManufacture |
|----------|---------|------|-------------------|
| T020     | 1       | 2000 | 2010-05-12        |
| M032     | 4       | 7000 | 2009-04-15        |
| M059     | 2       | 800  | 2009-09-23        |
| A167     | 3       | 1200 | 2011-01-12        |
| T024     | 1       | 1300 | 2009-10-14        |

- a) Select COUNT(DISTINCT CompHO) from Company;
- b) Select CompName, „Mr.“, ContactPerson from Company where CompName like „%a“;
- c) Select Model\_ID, Comp\_ID, Cost, CompName, ContactPersonfrom Model, Company where Model.Comp\_ID = Company.Comp\_IDand Comp\_ID > 2;

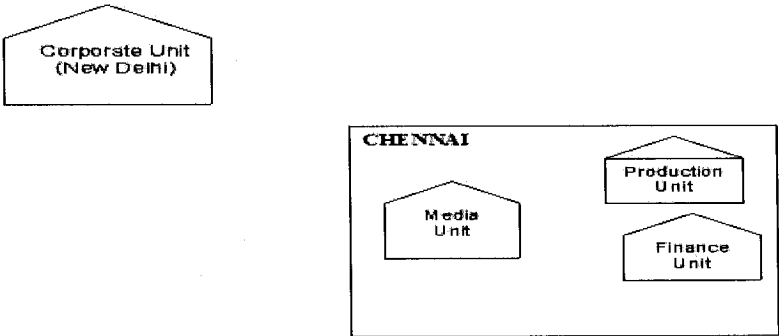
37. Write AddCustomer(Customer) method in Python to add a new customer, considering it to act as a 3  
PUSH operation of the stack datastructure. Also display the contents of the Stack after PUSH  
operation. Details of the Customer are : CID and Name.

OR

Write RemoveCustomer(Customer) method in Python to remove a Customer, considering it to act as  
a POP operation of the stack datastructure. Also return the value deleted from stack.

**Section-III**

38. “China Middleton Fashion” is planning to expand their network in India, starting with two cities 5  
in India to provide infrastructure for distribution of their product. The company has planned to set up their  
main office units inChennai at three locations and have named their offices as “Production Unit”, “Finance  
Unit” and “Media Unit”. The company has its corporate unitin New Delhi. A rough layout of the same is as  
follows:



| From       | To             | Distance |
|------------|----------------|----------|
| Production | Finance Unit   | 70 Mtr   |
| Production | Media Unit     | 15 KM    |
| Production | Corporate Unit | 2112 KM  |
| Finance    | Media Unit     | 15 KM    |

|                 |     |
|-----------------|-----|
| Production Unit | 150 |
| Finance Unit    | 35  |
| Media Unit      | 10  |
| Corporate Unit  | 30  |

39. Consider the following tables:

| ItemNo | Item             | Scode | Qty | Rate | LastBuy   |
|--------|------------------|-------|-----|------|-----------|
| 2005   | Sharpner Classic | 23    | 60  | 8    | 31-Jun-09 |
| 2003   | Ball Pen 0.25    | 22    | 50  | 25   | 01-Feb-10 |
| 2002   | Gel Pen Premium  | 21    | 150 | 12   | 24-Feb-10 |
| 2006   | Gel Pen Classic  | 21    | 250 | 20   | 11-Mar-09 |
| 2001   | Eraser Small     | 22    | 220 | 6    | 19-Jan-09 |
| 2004   | Eraser Big       | 22    | 110 | 8    | 02-Dec-09 |
| 2009   | Ball Pen 0.5     | 21    | 180 | 18   | 03-Nov-09 |

| Scode | Sname              |
|-------|--------------------|
| 21    | Premium Stationary |
| 23    | Soft Plastics      |
| 22    | Tetra Supply       |

- To display details of all the items in the Store table indescending order of LastBuy.
- To display Itemno and item name of those items from store table whose rate is more than 15 rupees.
- To display the details of those items whose supplier code is 22 or Quantity in store is more than 110 from the table Store.
- To display minimum rate of items for each Supplier individually as per Scode from the table

Store.

- v) To display ItemNo, Item Name and Sname from the tables with their corresponding matching Scode.

40.

A binary file "Items.dat" has structure as [ Code, Description, Price ].

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- i. Write a user defined function MakeFile( ) to input multiple items from the user and add to Items.dat
- ii. Write a function SearchRec(Code) in Python which will accept the code as parameter and search and display the details of the corresponding code on screen from Items.dat.

**OR**

A binary file "Account.dat" has structure (Acct\_Number, Acct\_Type, AcctHolderName, Balance).

- i. Write a user defined function CreateFile() to input data for a record and add to Account.dat .
- ii. Write a function CountBalanceAbove(BAL) in Python that would read contents of the file "Account.dat" and display the details of those accounts in which Balance is more than BAL. Also display number of such accounts.

**End of the Question Paper**