NOREN .
PGT (CS)

PRE-BOARD EXAM. -1 2024-25

CLASS : XII

SUBJECT : COMPUTER SCIENCE

Time : 3 Hours

Max. Marks : 70

General Instructions:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

SECTION-A (21 X 1 = 21 MARKS)

1. **State True or False: -** "Variable declaration is implicit in Python." 1 **False**

2. **Select the correct output of the code:** 1

S= "last#ball"

print(S.strip("l"))

(a) 'ast#ba'

[P.T.O.]

(a) ast#ba   (b) ast#bal

(c) last#ba   (d) ast#ball

3   **Evaluate the following expression:**

16 - (4 + 2) * 5 + 2**3 * 4

(a) 54   (b) 46   (c) 18   (d) 32   1

4   **Select the correct output of the code:**

Text = "Python Programming"

print(Text.split('P')

(a) ['ython', 'rogramming']   (b) [' ', 'ython ', 'rogramming']

(c) [' ', 'ython', 'programming']   (d) ['python', 'rogramming']

5   **What will be the output of the following code snippet:**

str = 'Welcome to Python world"

print(str[: : -3])   1

6   Which of the following will give an error in Python for a tuple **t=(4, 'a', 7.8)**

(a) print(sum(t))   (b) t=(1,2,3)

(c) a,b,c = t   (d) print(len(t))   1

7   If mdict is a dictionary as defined below, then which of the following statements will raise an exception?   1

mdict = {'red': 100, 'black': 200, 'white': 300}

(a) mdict.get(300)   (b) mdict['red']=20

(c) print(mdict['black', 'white'])   (d) print(str(mdict))

8   **Predict the output:**   1

L = [23,4,7,12,2]

L1 = L. sort ()

L. insert (2,16)

print (L, '&', L1)

(a) [2,4,7,12,16,23] & [2,4,7,12,23]

(b) [2,4,16,7,12,23] & [2,4,16,7,12,23]

(c) [2,4,7,12,16,23] & None

(d) None of these

9　Predict the output for the following code snippet: 　1

t = 4,

print(type(t))

(a) <class 'int'>　　　　　　(b) <class 'tuple'>

(c) No output　　　　　　　(d) error

10. The syntax of seek () is:　　　　　　　　1

file_object.seek (offset [, reference point])

What is the default value of reference_point?

(a) 0　　　　　(b) 1　　　　　(c) 2　　　　　(d) 3

11　State whether the following statement is True or False:　1

"Every syntax error is an exception but every exception cannot be a syntax error."　True

12. Write the output of the following Python code:　　1

a = 20　　30

def call (x):

　　global a

　　x+ = a　　= 30+20)x=50

　　return x　　50

x = 15　　50/5

print(call (30), end= '$')　　50$

(a) 35$　　　　　　(b) 45$

(c) 50$　　　　　　(d) 65$

13　Write the SQL query to add a primary key to an existing column 'ADNO' in the table 'SRecord'.→ Alter table SRecord add primary k

14. Fill in the blank:　　　　　　　　　1

Order by clause is used with SELECT statement to display data in a sorted form with respect to a specified column.

15　Fill in the blank:　　　　　　　　　1

Cordinality is a number of tuples in a relation.

[P.T.O.]

ZZZ-1207   4

(a) Attribute   (b) Degree   1

(c) Domain   (d) Cardinality

16   Which SQL statement do we use to find out the total number of records present in the table ORDERS?   1

    (a) Select * from ORDERS;

    (b) Select count(*) from ORDERS;

    (c) Select find(*) from ORDERS;

    (d) Select sum(*) from ORDERS;

17   What does HTTPS stand for?

    (a) Hyper Text Protocol Secure

    (b) Hypertext Transfer Protocol Secure

    (c) Hidden Text Transfer Protocol Station

    (d) Hypertext Transfer Protocol Station   1

18   Which of the following options is the correct unit of measurement for network bandwidth?

    (a) KB   (b) bit

    (c) Hz   (d) Km   1

19   **Fill in the blank:**

TCP/IP stands for __Transmission & Control Protocol | Internet Protocol__ (1)

Q20 and Q21 are Assertion(A) and Reason(R) based questions. Mark the correct choice as:

(A)   Both A and R are true and R is the correct explanation for A

(B)   Both A and R are true and R is not the correct explanation for A

(C)   A is True but R is False

(D)   A is False but R is True

20   **Assertion (A)** : To use a function from a particular module, we need to import the module.

    Reason (R) : import statement can be written anywhere in the program, before using a function from that module.   1

21   **Assertion(A)** : In SQL, the aggregate function AVG() calculates the average value on a set of values and produce a single result.

[P.T.O.]

Reason(R) : The aggregate functions are used to perform some fundamental arithmetic tasks such as Min(), Max(), Sum() etc... 1

SECTION-B (7 X 2=14 MARKS)

22 Mithilesh has written a code to input a number and evaluate its factorial and then finally print the result in the format: "The factorial of the <number> is <factorial value>" His code is having errors. Rewrite the correct code and underline the corrections made.

```
f = 0

num = input("Enter a number: ")

n = num

while num > 1 :

        f = f * num

num - = 1

else :

        print ("The factorial of: ", num , "is", f)                    2
```

23 **Predict the output of the following:**   2
```
for i in range (1, 15, 2):
temp = i
if i % 3 = = 0:
temp = i + 1
elif i % 5 = = 0:
continue
elif i = = 11:
break print(temp, end = '$')
```

1$4$2$10$

24 **If L = [3,5,2,7,8,12,2,19] and L1 = [4,6,3,2,7,12,9] then**   2

(i) (A) Write a statement to merge both the lists.
→ L.extend (L1)

OR

(B) Write a statement to sort the elements in place of list L.   L.sort( )

(ii)   (A) Write a statement to get a new list SL with the elements of L1 in descending order.   ii) SL = sorted (L1, reverse =True)

OR

OR

L.insert (5, L1[-1])

[P.T.O.]

(B)   Write a statement to insert the last element of list L1 in the list L at 5th index.

25   Identify the correct output(s) of the following code. Also write the minimum and the maximum possible values of the variable b.

```
import random
a="Wisdom"
b=random.randint(1,6)
for i in range(0,b,2):
    print(a[i],end='#')
```

(handwritten: min = 1, max = 6)

(handwritten: (A, C))

(A) W#   (B) W # i #

(C) W # s #   (D) W # i # s #

26   What is the difference between primary key and alternate key? Give example of each.   2

27   (i) (A) Write the command to add a column **Percentage** in the table **Marks**. Where the data should be entered as decimal number i.e. 78.3

(handwritten: Alter table marks add column Percentage decimal(3,1);)

OR

(B) Write the constraint that will provide value to a column if no value is inserted in that column. *(handwritten: → Default Constraint)*

(ii)   (A) Write the command to change the name of a column from **Comm** to **Commission** in the table **Product.**

(handwritten: Alter table Product change Comm Commission decimal(4,2);)

OR

(handwritten: Alter table Product Rename column Comm to Commission)

(B)   Write the constraint that will allow null value but not duplicate values in the column of a table. *(handwritten: unique constraint)*

28   **Write the full form of the following:**   2

(i) SMTP *(handwritten: → Simple Mail Transfer Protocol)*   (ii) VOIP *(handwritten: Voice over Internet Protocol)*

SECTION-C (3 X 3 = 9 MARKS)

29   (A) Write a function **uld_count()** that will display the counting of all the upper case alphabets, lower case alphabets and digits from a text file **"Para.txt"**.   3

(handwritten:)
```
f=open("Para.txt","r")
a=f.read()
U=L=D=0
for
```

[P.T.O.]

For ex — if Para. txt contains the following content

He lives in AB-66, AB Type Quarters.

Then the function should display:

Upper case alphabets — 7

Lower case alphabets — 18

Digits - 2

OR

(B) Write a method/function **countwords()** in Python to read contents from a text file 'DECODE.TXT' to count and return the occurrence of those worlds which are having 5 or more characters.

For ex -if DECODE.TXT content is :

These days I am reading a motivational book.

The method/function should display

The words having 5 or more characters are 3.

30   (A) A dictionary, **d_city** contains the records in the following format:

{state:city}

Define the following functions with the given specifications:

   (i)   **push_city(d_city)** : It takes the dictionary as an argument and pushes all the cities in the stack **CITY** whose states are of more than 4 characters.

   (ii)   **pop_city()**: this function pops the cities and displays "Stack empty" when there are no more cities in the stack.

   (iii)   **peep(d_city)** : This function displays the topmost element of the stack without deleting it. If the stack is empty the function should display 'None'.

OR

(B) You have a stack named **BooksStack** that contains records of books. Each book record is represented as a list containing book_title, author_name, and publication_year. Write the following user-defined functions in Python to perform the specified operations on the stack **BooksStack**:

[P.T.O.]

(I) **push_book(BooksStack, new_book):** This function takes the stack **BooksStack** and a new book record **new_book** as arguments and pushes the new book record onto the stack.

(II) **pop_book(BooksStack):** This function pops the topmost book record from the stack and returns it. If the stack is already empty, the function should display "Underflow".

(III) **peep(BookStack):** This function displays the topmost element of the stack without deleting it. If the stack is empty, the function should display 'None'.

31 Consider the following table:

TABLE : RENT_CAB

Vcode	VName	Make	Color	Charges
101	Big car	Carus	White	15
102	Small Car	Ploestar	Silver	10
103	Family car	Windspeed	Black	20
104	Classic	Studio	White	30
105	Luxury	Trona	Red	9

Based on the given table, write SQL queries for the following:

(A)

(i) Count the number of cars of different colors.
Select Color, count(*) from Rent_Cab group by Color

(ii) Display all the details in the descending order of charges.
Select * from Rent_cab order by Charges desc

(iii) Display the vcode, vname of the cars whose make has letter 'o' in their name. Select Vcode, VName from Rent_cab where make like '%o%'

OR

(B) (i) Increase the charges of all the cabs by 10%.
Update Rent_cab set charges = charges...

(ii) Delete all the cabs whose maker name is 'Carus'
Delete from Rent_cab where make = 'Carus'

(iii) Display the sum of charges of all cars color-wise.
Select Color, sum(charges) from Rent_cab group by color

SECTION-D (4 X 4 = 16 MARKS)

[P.T.O.]

32 (A) (i) Explain Catching exceptions using try and except block.

(ii) Give an example code to handle ZeroDivisionError using try and except block. The code should display the message "Denominator can't be zero" in case of ZeroDivisionError exception, and the message "Some other error occurred" in case of any other exception.

OR

(B) (i) When is IOError exception raised in Python?

(ii) Give an example code to handle IOError using try and except block. The code should display the message "File not found" in case of IOError exception, and the message "Some other error occurred" in case of any other exception. 4

33 Mr. Mahesh is a Python programmer working in a school. He has to maintain the records of the sports students. He has created a csv file named **sports.csv** to store the details. The structure of **sports.csv** is :**[sport_id, competition, prize_won]**

Where **sport_id** is sport id (integer)

Competition is competition name (string)

Prize_won is ("Gold", "Silver", "Bronze")

Mr. Mahesh wants to write the following user defined functions:

Add_details(): to accept the details of student and add to a csv file, **"sports.csv"**.

Count_Medal(): to display the name the competitions in which students have won "Gold_medal".

Help him in writing the code of both the functions. 4

34 Consider the tables **Games** and **Players** given below: 4

TABLE GAMES

Gcode	GameName	Type	Number	Prize Money
101	Carrom Board	Indoor	2	5000
102	Badminton	Outdoor	2	12000
103	Table Tennis	Indoor	4	Null
104	Chess	Indoor	2	9000
105	Lawn Tennis	Outdoor	4	25000

TABLE : PLAYERS

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

Write SQL queries for the following:

(i) Display the game type and average number of games played in each type. *select type, avg(Number) from Games Group by type.*

(ii) Display prize money, name of the game and name of the players from the tables games and players. *Select prizemoney, Gamename, name from Games, Player Gam____*

(iii) Display the type of games without repetition. *Select Distinct Type from Games*

(iv) (A) Display the name of the games and prize money of those games whose prize money is known. *Select Gamename, prizemo from Games where prizemo is not null.*

OR

(B) To display the cartesian product of these two tables. *select * for Games, Player*

35 Sunil wants to write a function **ADRecord()** in Python to insert a record and display the records of the items whose price is between 200 to 300 in the table named **Stall** in MySQL database named **Maintain** .

The table **Stall** in MySQL contains the following attributes:

I_code: item code (integer)

I_name : name of item (string)

Quan : quantity of the item (integer)

Amount : price of item (integer)

Consider the following to establish connectivity between Python and MySQL:

Username – Administrator

Password – market

Host – localhost

SECTION-E (2 X 5 = 10 MARKS)

36 Rakesh is working in an educational Institute. He needs to manage the records of various students. For this he wants the following

[P.T.O.]

information of each student to be stored:
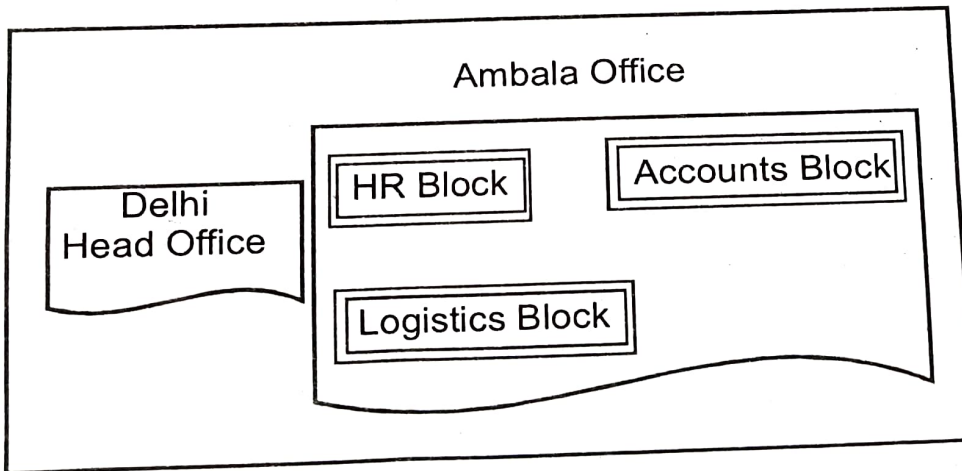
Student_id – integer

student_Name – string

Father_name – string

Percentage – float

You, as a programmer of the institute, have been assigned to do this job for Rakesh. Suggest:

(I)   What type of file (text file, csv file, or binary file) will you use to store this data? Give one valid reason to support your answer.

(II)   Write a function to input the data of a student and append it in the file that you suggested in part (I) of this question.

(III) Write a function to read the data from the file that you suggested in part (I) of this question and display the data of all those students whose percentage is more than 85.   5

37   Logistic Technologies Ltd. is a Delhi based organisation which is expanding its office set-up to Ambala. At Ambala office campus, they are planning to have 3 different blocks for HR, Accounts and Logistics related work. Each block has a number of computers, which are required to be connected to a network for communication, data and resource sharing.

As a network consultant, you have to suggest the best network related solutions for them for issues/problems raised in (i) to (v), keeping in mind the distances between various block/ locations and other given parameters.

Distance between various blocks/locations:

HR block to Accounts blocks	400 meters
Accounts block to Logistics block	200 meters
Logistics block to HR block	150 meters
Delhi head office to Ambala office	220 km

Number of computers installed at various blocks are as follows:

HR block	70
Accounts block	40
Logistics block	30

(i) Suggest the most appropriate block/location to house the SERVER in the Ambala office. Justify your answer. *HR block as more.*

(ii) Suggest the best wired medium to efficiently connect various blocks within the Ambala office compound. *optical fibre*

(iii) Draw an ideal cable layout (block to block) for connecting these blocks for wired connectivity.

(iv) The company wants to schedule an online conference between the managers of Delhi and Ambala offices. Which protocol will be used for effective voice communication over the Internet? *VoIP*

(v) (A) Which kind of network (PAN, LAN, MAN, WAN) will it be between Delhi office and Ambala office? *WAN*

OR

(B) Is there a requirement of a repeater in the given cable layout? Why/ Why not?

Yes → 70 meter