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कक्षा बारहवीं प्री बोर्ड-1 परीक्षा 2025

PRE BOARD - I EXAMINATION for Class XII 2025

SUBJECT : COMPUTER SCIENCE (083)

TIME: 3 HOURS

M.M.: 70

सामान्य निर्देश/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

- 1 State True or False: 1
"In a Python program, if a break statement is given in a nested loop, it terminates the execution of all loops in one go."
- 2 Which of the following is an invalid datatype in Python? 1
a) Set b) None c) Integer d) Real
- 3 The following expression will evaluate to 1
print(2+(3%5)**1**2/5+2)
a) 5 b) 4.6 c) 5.8 d) 4
- 4 Which among the following is a DML command? 1
a) Create b) Update c) Alter d) Drop
- 5 What will be output of the following code snippet? 1
Msg='Wings of Fire!'
print (Msg[-9: :2])
- 6 Write the output of the following Python code : 1
for k in range(7,14,4):
print (k , '@')
- 7 What will be the output of the following Python statement: 1
print(20>3 and 5 or not 0)
- 8 SUM(), AVG() and COUNT() are examples of _____ functions. 1

- 9 What will be the output of the following Python code? 1
- ```
try:
 x = 18 // 0
except Exception:
 print("Exception occurred!")
except ZeroDivisionError:
 print("Division by zero error!")
```
- 10 Given the following dictionaries: 1
- ```
dict_exam = {"Exam": "Pre-Board", "Year": 2025}
dict_result = {"Marks": 500, "Pass_Marks": 165}
```
- Which statement will merge the contents of both dictionaries?
- dict_exam.update(dict_result)
 - dict_exam + dict_result
 - dict_exam.add(dict_result)
 - dict_exam.merge(dict_result)
- 11 What possible output is expected to be displayed on the screen at the time of execution of the Python program from the following code? 1
- ```
Import random
word='Inspiration'
Lot=2*random.randint(2,4)
for I in range(Lot,len(word),3):
 print(word[i],end='$')
```
- i\$a\$i\$n\$
  - i\$n\$
  - i\$t\$n\$
  - a\$i\$n\$
- 12 Which of the following statement(s) would give an error during execution of the following code? 1
- ```
Tup = (10,20,30,40,50,60)
print(tup) #Statement 1
print(tup[3]+50) #Statement 2
print(max(tup)) #Statement 3
tup[4]=80 #Statement 4
```
- Statement 1
 - Statement 2
 - Statement 3
 - Statement 4
- 13 Which SQL command can change the cardinality of an existing relation? 1
- Alter
 - Delete
 - Update
 - Drop
- 14 What is the output of the expression? 1
- ```
food='Chinese Continental'
print(food.split('C'))
```
- (' ', 'hinese ', 'ontinental')
  - [' ', 'hinese ', 'ontinental']
  - ('hinese ', 'ontinental')
  - ['hinese ', 'ontinental']
- 15 In SQL, a relation consists of 6 columns and 5 rows. If 2 columns and 3 rows are deleted from the existing relation, what will be the updated degree of a relation? 1
- Degree: 4
  - Degree: 8
  - Degree: 8
  - Degree: 2



- 16 Fill in the blank: \_\_\_\_\_ command is used to remove primary key from a table in SQL.  
a) update                      b) remove                      c) alter                      d) drop
- 17 Fill in the blank: \_\_\_\_\_ is a communication methodology designed to deliver both voice and multimedia communications over Internet protocol.  
a) VoIP                      b) SMTP                      c) PPP                      d) HTTP
- 18 Fill in the blank: In case of \_\_\_\_\_ switching, before a communication starts, a dedicated path is identified between the sender and the receiver.
- 19 Which among the following is not a Web Browser?  
a) Mozilla Firefox                      b) Google Chrome  
c) Windows Firewall                      d) Microsoft Edge

**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):** A primary key must be unique and cannot have NULL values.  
**Reasoning (R):** The primary key uniquely identifies each row in the table.
- 21 **Assertion(A):** List is an immutable data type  
**Reasoning(R):** When an attempt is made to update the value of an immutable variable, the old variable is destroyed and a new variable is created by the same name in memory.

## SECTION B

- 22 A. Differentiate between Type Conversion and Type Casting with example.  
**OR**  
B. Differentiate between Mutable and Immutable data types with example.
- 23 Give two examples of each of the following:  
(i) Relational operator    (ii) Membership operator
- 24 Rewrite the following code in Python after removing all the syntax errors.  
Underline each correction done in the code.

```
define fun1():
 30 = num
 for k range(0,num):
 if k%4=0:
 print(k*4)
 else:
 print(k+3)
```

- 25 Write a user defined function in Python named showGrades(S) which takes the dictionary S as an argument. The dictionary S contains Name:[Eng,Math,Science] as key:value pairs. The function displays the corresponding grade obtained by the students according to the following grading rules: 2

| Average of Eng,Math,Science | Grade |
|-----------------------------|-------|
| $\geq 90$                   | A     |
| $< 90$ but $\geq 60$        | B     |
| $< 60$                      | C     |

For example : Consider the following dictionary:

`S={"NIDHI":[92,86,64],"PRINCE":[65,42,43],"PRACHI":[92,90,88]}`

The output should be :

NIDHI – B

PRINCE – C

PRACHI – A

- 26 (A) Consider the following list L1 and write Python statement for the following questions: 2

`L1=['english','physics','chemistry','cs','biology']`

- (i) (A) To insert subject "maths" as last element  
(ii) To display the list in reverse alphabetical order

**OR**

- (B) (i) To remove the first element of list  
(ii) To Find the index position of element 'cs'

- 27 (A) Write the SQL commands to perform the following tasks: 2
- (i) View the list of tables in the database, SCHOOL.  
(ii) View the structure of the table, STUDENT.

**OR**

(B) Differentiate between Drop and Delete commands in SQL with suitable examples.

- 28 (A) Define the following terms: 2
- I. Modem  
II. Router

**OR**

- (B)
- I. Expand the following terms: SMTP and POP3  
II. Differentiate between web server and web browser.



### SECTION C

- 29 (A) Write a Python function that displays all the lines containing the word 'vote' from a text file "Elections.txt". For example, if the file contains : 3

In an election many people vote to choose their representative.  
The candidate getting the maximum share of votes stands elected.  
Normally, one person has to vote once.  
The process of voting may vary with time and region.

**Then the output should be :**

In an election many people vote to choose their representative.  
Normally, one person has to vote once.

**OR**

(B) Write a Python function that displays the number of times the word "Python" appears in a text file named "Prog.txt".

- 30 Consider a list named Nums which contains random integers. Write the following user defined functions in Python and perform the specified Operations on a stack named BigNums. 3

(i) PushBig(): It checks every number from the list Nums and pushes all such Numbers which have 5 or more digits into the stack, BigNums.

(ii) PopBig(): It pops the numbers from the stack, BigNums and displays them. The function should also display "Stack Empty" when there are no more numbers left in the stack.

For example: If the list Nums contains the following data:

Nums=[213,10025,167,254923,14,1297653,31498,386,92765]

Then on execution of PushBig(), the stack BigNums should store:  
[10025,254923,1297653,31498,92765]

And on execution of PopBig(), the following output should be displayed:

92765  
31498  
1297653  
254923  
10025  
Stack Empty

- 31 (A) Write the output on execution of the following Python code: 3

```
S="Racecar Car Radar"
```

```
L=S.split()
```

```
for W in L:
```

```
 x=W.upper()
```

```
 if x==x[::-1]:
```

```
 for I in x:
```

```
 print(I,end="*")
```

```
 else:
```

```
 for I in W:
```

```
 print(I,end="#")
```

```
print()
```

**OR**

(B) Write the output on execution of the following Python code:

```
text="LearningCS"
L=len(text)
ntext=""
for i in range (0,L):
 if text[i].islower():
 ntext=ntext+text[i].upper()
 elif text [i].isalnum():
 ntext=ntext+text[i]
 else:
 ntext=ntext+'@@'
print(ntext)
```

#### SECTION D

32 Consider the table SALES as given below:

4

| sales_id | customer_name | product    | quantity_sold | price |
|----------|---------------|------------|---------------|-------|
| S001     | John Doe      | Laptop     | 5             | 50000 |
| S002     | Jane Smith    | Smartphone | 10            | 30000 |
| S003     | Michael Lee   | Tablet     | 3             | 15000 |
| S004     | Sarah Brown   | Headphones | 7             | 2000  |
| S005     | Emily Davis   | Smartwatch | 8             | 8000  |
| S006     | David         | Smartwatch | 3             | 16000 |
| S007     | Mark          | Tablet     | 5             | 34000 |

(A) Write the following queries:

- I. To display the total quantity sold for each product whose total quantity sold exceeds 12.
- II. To display the records of SALES table sorted by Product name in descending order.
- III. To display the distinct Product names from the SALES table.
- IV. To display the records of customers whose names end with the letter 'e'.

OR

(B) Predict the output of the following:

- I. SELECT \* FROM Sales where product='Tablet';
- II. SELECT sales\_id, customer\_name FROM Sales WHERE product LIKE 'S%';
- III. SELECT COUNT(\*) FROM Sales WHERE product in ('Laptop', 'Tablet');
- IV. SELECT AVG(price) FROM Sales where product='Tablet';

33 Charvi is a Python programmer working in a computer hardware company. She has to maintain the records of the peripheral devices. She created a csv file named Peripheral.csv, to store the details.

4

The structure of Peripheral.csv is: [P\_id, P\_name, Price]

Where P\_id is Peripheral device ID (integer) P\_name is Peripheral device name (String) and Price is Peripheral device price (integer). Charvi wants to write the following user defined functions :

Add\_Device() : to accept a record from the user and add it to a csv file, Peripheral.csv

Count\_Device() : To count and display number of peripheral devices whose price is less than 1000.



- 34 Pranil is managing a Travel Database and needs to access certain information from the Hotels and Bookings tables for an upcoming tourism survey. Help him extract the required information by writing the appropriate SQL queries as per the tasks mentioned below:

4

**Table -Hotels**

| H_ID | Hotel_Name | City      | Star_Rating |
|------|------------|-----------|-------------|
| 1    | Hotel1     | Delhi     | 5           |
| 2    | Hotel2     | Mumbai    | 5           |
| 3    | Hotel3     | Hyderabad | 4           |
| 4    | Hotel4     | Bengaluru | 4           |
| 5    | Hotel5     | Chennai   | 5           |
| 6    | Hotel6     | Kolkata   | 4           |

**Table – Bookings**

| B_ID | H_ID | Customer Name | Check In   | Check Out  |
|------|------|---------------|------------|------------|
| 1    | 1    | Jiya          | 2024-12-03 | 2024-12-05 |
| 2    | 2    | Priya         | 2024-12-01 | 2024-12-07 |
| 3    | 3    | Alicia        | 2024-12-02 | 2024-12-06 |
| 4    | 4    | Bhavik        | 2024-12-03 | 2024-12-08 |
| 5    | 5    | Charu         | 2024-12-03 | 2024-12-09 |
| 6    | 6    | Esha          | 2024-12-04 | 2024-12-06 |
| 7    | 4    | Dia           | 2024-12-04 | 2024-12-08 |
| 8    | 1    | Sonia         | 2024-12-02 | 2024-12-08 |

- I. To display a list of customer names who have bookings in any hotel of 'Delhi' city.
- II. To display the booking details for customers who have booked hotels in 'Mumbai', 'Chennai', or 'Kolkata'.
- III. To delete all bookings where the check-in date is before 2024-12-03.
- IV. A. To display the Cartesian Product of the two tables.

OR

- B. To display the customer's name along with their booked hotel's name.

- 35 Rehan wants to write a program in Python to update the quantity to 20 of the records whose item code is 111 in the table named shop in MySQL database named Keeper.

4

The table shop in MySQL contains the following attributes :

- Item\_code: Item code (Integer)
- Item\_name: Name of item (String)
- Qty: Quantity of item (Integer)
- Price: Price of item (Integer)

Consider the following to establish connectivity between Python and MySQL:

Username: admin

Password : Shopping

Host: localhost

### SECTION E

- 36 (A) Differentiate between Binary Files and CSV Files.  
 (B) A file, PASSENGERS.DAT, stores the records of passengers using the following structure : [PNR, PName, BRDSTN, DESTN, FARE]

5  
(1+4)



where :

PNR – Passenger Number (string type)  
Pname – Passenger Name (string type)  
BRDSTN – Boarding Station Name (string type)  
DESTN – Destination Station Name (string type)  
FARE– Fare amount for the journey (float type)

Write user defined functions in Python for the following tasks :

(i) Create() – to input data for passengers and write it in the binary file PASSENGERS.DAT.

(ii) SearchDestn(D) –to read contents from the file PASSENGERS.DAT and display the details of those Passengers whose DESTN matches with the value of D.

- 37 Karnavati Design and Training Institute is setting up its center in Jaipur with four specialized units for Design, Media, HR and Training in separate buildings. The physical distances between these units and the number of computers to be installed in these units are given as follows.

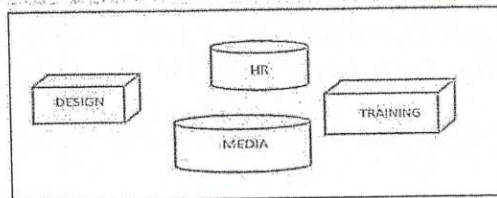
You as a network expert, have to answer the queries as raised by the administrator as given in (i) to (v).

Shortest distances between various locations in meters :

|                              |     |
|------------------------------|-----|
| Design Unit to Media Unit    | 60  |
| Design Unit to HR Unit       | 40  |
| Design Unit to Training Unit | 60  |
| Media Unit to Training Unit  | 100 |
| Media Unit to HR Unit        | 50  |
| Training Unit to HR Unit     | 60  |

Number of computers installed at various locations are as follows:

|               |     |
|---------------|-----|
| Design Unit   | 40  |
| Media Unit    | 50  |
| HR Unit       | 110 |
| Training Unit | 40  |



- Suggest the most suitable place (i.e., Unit/Building) to install the server of this Institute with justification.
- Suggest an ideal layout for connecting these Unit/Building for a wired connectivity.
- Suggest the devices to be installed in each of these buildings for connecting computers installed within each of the units out of the following :  
Modem, Switch, Gateway, Router
- Suggest an efficient as well as economic wired medium to be used within each unit for connecting computer systems out of the following network cable:  
Co-axial Cable, Ethernet Cable, Single Pair Telephone Cable.
- The institute is planning to connect its admission office in Bangalore, which is 1960km from institute. Which type of network out of LAN, MAN or WAN will be formed ? Justify your answer.

OR

- Differentiate between PAN and LAN