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KENDRIYA VIDYALAYA SANGATHAN, AHMEDABAD REGION
कक्षा बारहवीं प्री बोर्ड II परीक्षा 2025
PRE BOARD II EXAMINATION for Class XII 2025
SUBJECT : COMPUTER SCIENCE (083)

SET B

TIME: 3 HOURS

MAX. MARKS: 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
In Python, a dictionary is an ordered collection of items(key:value pairs). | 1 |
| 2 | In SQL, what is the difference between equi join and natural join ? | 1 |
| 3 | What will be the output of following expression?
(5<10) and (10< 5) or (3<18) and not 8<18
a) True b) False c) Error d) No output | 1 |
| 4 | What will be the output of the following code?
L = ["My", "Computer", "Lab"]
print(L[0][0] + L[1][-1])
a) Cr b) cb c) Mr d) Mb | 1 |
| 5 | What will be output of the following code snippet?
Msg='Wings of Fire!'
print (Msg[-12: -14:2]) | 1 |
| 6 | What will be the output of the following Python code?
student = {"name": "Rohan", "grade": "A", "subject": "Maths"}
print(student.get("age", "Data Not Available"))
a) Rohan b) Data Not Available c) None d) A | 1 |
| 7 | The following expression will evaluate to
print(2+(5%5)**2**1/5+2)
a) 4.6 b) 4.0 c) 5.4 d) 5.0 | 1 |

- 8 Consider the given SQL Query: 1
SELECT job_title, AVG(salary) FROM employees HAVING AVG(salary) > 50000
GROUP BY job_title;
Aarav executes the above query but does not get the correct output.
Write the correction.
- 9 What will be the output of the following Python code? 1
try:
 x = int("abc")
except ValueError:
 print("Value Error occurred!")
except Exception:
 print("Some other error!")
- a) Value Error occurred! b) Some other error!
c) abc d) Nothing is printed
- 10 Which of the following options will not result in an error when performed on 1
types in python where tp = (5,2,7,0,3) ?
- a) Tp[1] = 2 b) tp.append(2)
c) tp1 = tp+tp d) tp.sum()
- 11 What possible output is expected to be displayed on the screen at the time of 1
execution of the following Python program?
- import random
nums = [5, 15, 25, 35, 45]
start = random.randint(1, 2)
end = random.randint(2, 3)
for i in range(start, end + 1):
 print(nums[i], end="#")
- a) 5#15#25#
b) 15#35#
c) 15#25#35#45#
d) 25#
- 12 Which of the following is used to create the structure of a web page? 1
a) HTML b) CSS c) JavaScript d) FTP
- 13 Which SQL command can change the cardinality of an existing relation? 1
a) Insert b) Delete c) Both a) & b) d) Drop
- 14 What is the output of the expression? 1
St1="wonder@land@city"
print(St1.partition("@"))
- a) ("wonder", "@", "land", "@", "city")
b) ["wonder", "@", "land@city"]
c) ["wonder", "land", "city"]
d) Error

- 15 In SQL, a table initially contains 4 columns and 8 rows. If 3 more columns and 2 more rows are added to the existing table, what will be the updated cardinality of the table? 1
a) 6 b) 7 c) 10 d) 11
- 16 Which statement is used to modify column name in a table? 1
(a) CHANGE (b) MODIFY (c) UPDATE (d) ALTER
- 17 The protocol used identify the corresponding url from ip address is _____ 1
a)IP b)HTTP c)TCP d)FTP
- 18 The device used to convert analog signal to digital signal and vice versa is .. 1
a)Amplifier b)Router c)Modem d)Switch
- 19 What will be the output of the following code: 1
sal = 5000
def inc_sal(per):
 global sal
 inc = sal * (per / 100)
 sal += inc
inc_sal(10)
print(sal,end='%')
sal=6000
print(sal,end='\$')
a) 5000%6000\$ b) 5500.0%6000\$
c) 5000.0\$6000% d) 5500%5500\$

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): The expression "hello".upper() in Python will modify the original string. 1
Reason (R) : The upper() method converts all characters of a string to uppercase and updates the same string object.
- 21 Assertion (A) : Both WHERE and HAVING clauses are used to specify conditions. 1
Reason(R) : The WHERE and HAVING clauses are interchangeable.

SECTION B

- 22 A. Differentiate list and tuple with respect to mutability. Give suitable example to illustrate the same . 2
OR
B. Explain the difference between break and continue statements in Python with a suitable example.

- 23 Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. 2
- ```
p=30
for c in range(0,p)
 if c%4==0:
 print (c*4)
 elseif c%5==0:
 print (c+3)
 else
 Print(c+10)
```
- 24 A. (Answer using Python built-in methods/functions only): 2
- I. Write a statement to count the occurrences of 4 in L1.
- II. Write a statement to sort the elements of list L1 in ascending order.
- OR
- B. Predict the output of the following Python code:
- ```
Str="Computer Science with Python"
print(Str.partition("with"))
print(Str.find("e",10,20))
```
- 25 A. Write a function update_price () in Python that accepts a dictionary items 2
and two parameters — item_name and new_price.
If the item_name exists in the dictionary, update its price with new_price.
If it does not exist, print "Item not found".
- OR
- B. Write a Python function add_item() that accepts a list items and an element new_item. The function should add the element to the list only if it does not already exist. If the element already exists in the list, print "Item already exists" instead of adding it.
- 26 Predict the output of the Python code given below : 2
- ```
emp = {"East": [500,900],"West": [700,800],"North": [700,800],"South": [800,700]}
value = []
for n in emp:
 r1 = emp[n]
 x = (r1[0] + r1[1]) / 2
 if x > 700:
 value.append(n)
print(value)
```
- 27 A. Write suitable commands to do the following in MySQL. 2
- I. Delete the values from table DATA.
- II. Open a database named SQP
- OR
- B. Differentiate between alter and update query in SQL with a suitable example.

- 28 A. Define the following terms: 2  
 I. Repeater  
 II. Modem
- OR**
- B.  
 I. How is it easier to diagnose fault in Star topology than in Bus topology ?  
 II. Mala is a bit confused between the terms Web server and Web browsers.  
 Help her in understanding both the terms with the help of suitable example.

### SECTION C

- 29 A. Write a Python function that count the lines start with the word "the" in a file "xyz.txt" and display it at the end. 3  
 OR  
 B. Write a Python function that count total number of vowels in a file "abc.txt"
- 30 There is a stack named Uniform that contains records of uniforms Each record is represented as a list containing uid, uame, ucolour, useize, uprice. 3  
 Write the following user-defined functions in python to perform the specified operations on the stack Uniform :  
 I Push\_Uniform(new\_uniform):adds the new uniform record onto the stack  
 II Pop\_Uniform(): pops the topmost record from the stack and returns it. If the stack is already empty, the function should display "underflow".  
 III Peep(): This function display the topmost element of the stack without deleting it.if the stack is empty,the function should display 'None'.
- 31 A. Predict the output of the following Python code: 3  

```
s1="LTC-26"
s2=""
i=0
while i<len(s1):
 if s1[i]>='0' and s1[i]<='9':
 Num=int(s1[i])
 Num-=1
 s2=s2+str(Num)
 elif s1[i]>='A' and s1[i]<='Z':
 s2=s2+s1[i+1]
 else:
 s2=s2+'^'
 i+=1
print(s2)
```

 OR  
 B. Predict the output of the Python code given below:  

```
T= ["20", "50", "30", "40"]
Counter=3
Total= 0
for I in [1,2,3,4]:
 newT=T[Counter]
 Total= float (newT) + I
 print(Total)
 Counter=Counter-1
```

## SECTION D

- 32 Consider the following table named Vehicle and state the query or state the output

4

Table:- Vehicle

| VID | LicensePlate | VType       | Owner        | Cost | Contact    | State          |
|-----|--------------|-------------|--------------|------|------------|----------------|
| 1   | MH12AB1234   | Car         | Raj Kumar    | 65   | 9876543210 | Maharastra     |
| 2   | DL3CDE5678   | Truck       | Arjith Singh | 125  | 8765432109 | New Delhi      |
| 3   | KA04FG9012   | Motor cycle | Prem Sharma  |      | 9123456789 | Karnataka      |
| 4   | TN07GH3456   | SUV         | Shyad Usman  | 65   | 9987654321 | Tamil Nadu     |
| 5   | KA01AB1234   | Car         | Devid jhon   | 65   | 9876543210 | Karnataka      |
| 6   | TN02CD5678   | Truck       | Anjali Iyer  | 125  | 8765432109 | Tamil Nadu     |
| 7   | AP03EF9012   | Motor cycle | Priya Reddy  |      | 9123456789 | Andhra Pradesh |

A. Write the following queries:

- To display number of different vehicle type from the table vehicle
- To display number of records entered vehicle type wise whose minimum cost is above 80
- To set the cost as 45 for those vehicles whose cost is not mentioned
- To remove all motor cycle from vehicle

OR

B. Predict the output of the following:

- SELECT VTYPE,AVG(COST) FROM VEHICLE GROUP BY VTYPE;
- SELECT OWNER ,VTYPE,CONTACT FROM VEHICLE WHERE OWNER LIKE "P%";
- SELECT COUNT(\*) FROM VEHICLE WHERE COST IS NULL;
- SELECT MAX(COST) FROM VEHICLE;

- 33 Abhishek is making a software on "Countries & their Capitals" in which various records are to be stored/retrieved in CAPITAL.CSV data file. It consists of some records. As a programmer, you have to help him to successfully execute the program.

4

A. Write a function in Python named AddNewRec(Country,Capital) to append following records in the file "CAPITAL.CSV".

```
["FRANCE","PARIS"]
["SRILANKA","COLOMBO"]
```

B. Write a function in Python named ShowRec( ) that will show all the contents of CAPITAL.CSV

- 34      Pranav 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 Star\_Rating equals to 5.  
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 after 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      MySQL database named MyDB has a product\_inventory table in MySQL which contains the following attributes: 4
- Item\_code: Item code (Integer)
  - Product\_name: Name of product (String)
  - Quantity: Quantity of product (Integer)
  - Cost: Cost of product (Integer)

Consider the following details to establish Python-MySQL connectivity:

- Username: admin
- Password: computer24
- Host: localhost

Write a Python program to change the Quantity of the product to 91 whose Item\_code is 208 in the product\_inventory table.

## SECTION E

- 36 Ms. Neha, a librarian at a public library, needs to maintain records of books. Each record should include: Book\_ID, Title, Author, and Price. 2+3

Write the Python functions to:

- I. Input book data and append it to a binary file named Books.dat.
- II. Update the price of all books written by "Ruskin Bond" to ₹500.

- 37 ABC Inc. is planning a new campus in Kolkatta while maintaining its headquarters in Bengaluru. The campus will have four buildings: HR, Finance, IT, and Logistics. As a network expert, you are tasked with proposing the best network solutions for their needs based on the following: 5

Distance between the buildings

| From    | To        | Distance (in meters) |
|---------|-----------|----------------------|
| HR      | Finance   | 50                   |
| HR      | IT        | 175                  |
| HR      | Logistics | 90                   |
| Finance | IT        | 60                   |
| Finance | Logistics | 70                   |
| IT      | Logistics | 60                   |

Number of Computers in Each Block:

| Block     | Number of Computers |
|-----------|---------------------|
| HR        | 60                  |
| Finance   | 40                  |
| IT        | 90                  |
| Logistics | 35                  |

- I. Suggest the best location for the server in the Kolkatta campus and explain your reasoning.
- II. Suggest the placement of the following devices:
  - a) Repeater
  - b) Switch
- III. Suggest and draw a cable layout of connections between the buildings inside the campus.
- IV. The organisation plans to provide a high-speed link with its head office using a wired connection. Which of the cables will be most suitable for this job?
- V. A. What is the use of VoIP?

OR

- B. Which type of network (PAN, LAN, MAN, or WAN) will be formed while connecting the Kolkatta campus to Bengaluru Headquarters?