COMPUTER SCIENCE – Code No. 083
SAMPLE QUESTION PAPER*
Class - XII - (2025-26)

Time Allowed: 3 Hrs. **Maximum 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.

Q No.	Section-A (21 x 1 = 21 Marks)	Marks
1	State if the following statement is True or False: Using the statistics module, the output of the below statements will be 20: import statistics statistics.median([10, 20, 10, 30, 10, 20, 30])	1
2	What will be the output of the following code? L = ["India", "Incredible", "Bharat"] print(L[1][0] + L[2][-1]) a) IT b) it c) It d) iT	1
3	Consider the given expression: print(19<11 and 29>19 or not 75>30) Which of the following will be the correct output of the given expression? a) True b) False c) Null d) No output	1
4	In SQL, which type of Join(s) may contain duplicate column(s)?	1
5	What will be the output of the following Python code? str= "Soft Skills" print(str[-3::-3]) a) lSf b) Stkl c) StKi d) l	1
6	Write the output of the following Python code : for k in range(7,40,6): print (k + '-')	1
7	What will be the output of the following Python statement: print(10-3**2**2+144/12)	1
8	Consider the given SQL Query: SELECT department, COUNT(*) FROM employees HAVING COUNT(*) > 5 GROUP BY department;	1

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	Saanvi is executing the query but not getting the correct output. Write the correction.	

9	What will be the output of the following Python code?
	try:
	  x = 10 / 0
	except Exception:
	  print("Some other error!")
	except ZeroDivisionError:
	  print("Division by zero error!")
	a) Division by zero error! b) Some other error!
	c) ZeroDivisionError d) Nothing is printed
		1

10	What will be the output of the following Python code? my_dict = {"name": "Alicia", "age": 27, "city": "DELHI"} print(my_dict.get("profession", "Not Specified")) a) Alicia b)DELHI c)None d)Not Specified	1
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? import random L=[10,30,50,70] Lower=random.randint(2,2) Upper=random.randint(2,3) for K in range(Lower, Upper+1): print(L[K], end="@") a) 50@70@ b) 90@ c) 10@30@50@ d) 10@30@50@70@	1

12	What will be the output of the following Python code?
	i = 5
	print(i,end='@@')
	def add():
	  global i
	  i = i+7
	  print(i,end='##')
	add()
	print(i)
	a) 5@@12##15 b) 5@@5##12 c) 5@@12##12 d)12@@12##12
		1

13	Which SQL command can change the cardinality of an existing relation? a) Insert b) Delete c) Both a) & b) d) Drop	1
14	What is the output of the given Python code? st='Waterskiing is thrilling!' print(st.split("i")) a) ['Watersk', 'ng ', 's thr', 'll', 'ng!'] b) ['Watersk', '', 'ng ', 's thr', 'll', 'ng!'] c) ['Watersk', 'i', 'ng ', 's thr', 'll', 'ng!'] d) Error	1
15	In SQL, a relation consists of 5 columns and 6 rows. If 2 columns and 3 rows are added to the existing relation, what will be the updated degree of a relation? a) Degree: 7 b) Degree: 8 c) Degree: 9 d) Degree: 6	1
16	Which SQL command is used to remove a column from a table in MySQL? a) UPDATE b) ALTER c) DROP d) DELETE	1

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17	_____ is a protocol used for retrieving emails from a mail server. a) SMTP b) FTP c) POP3 d) PPP	1
18	Which of the following is correct about using a Hub and Switch in a computer network? a) A hub sends data to all devices in a network, while a switch sends data to the specific device. b) A hub sends data only to the devices it is connected to, while a switch sends data to all devices in a network. c) A hub and switch function the same way and can be used interchangeably. d) A hub and switch are both wireless networking devices.	1
19	Which of the following is used to create the structure of a web page? a) CSS b) HTML c) JavaScript d) FTP	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): The expression (1, 2, 3, 4).append(5) in Python will modify the original sequence datatype. Reason (R): The append() method adds an element to the end of a list and modifies the list in place.	1
21	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.	1
Q No.	**Section-B (7 x 2=14 Marks)**	**Marks**
22	A. Explain the difference between explicit and implicit type conversion in Python with a suitable example. **OR** B. Explain the difference between break and continue statements in Python with a suitable example.	2
23	The code provided below is intended to remove the first and last characters of a given string and return the resulting string. However, there are syntax and logical errors in the code. Rewrite it after removing all the errors. Also, underline all the corrections made. define remove_first_last(str): if len(str) < 2: return str new_str = str[1:-2] return new_str result = remove_first_last("Hello") Print("Resulting string: " result)	2
24	A. (Answer using Python built-in methods/functions only): I. Write a statement to find the index of the first occurrence of the substring "good" in a string named review. II. Write a statement to sort the elements of list L1 in descending order.	2

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	OR B. Predict the output of the following Python code: text="Learn Python with fun and practice" print(text.partition("with")) print(text.count("a"))	
25	A. Write a function remove_element() in Python that accepts a list L and a number n. If the number n exists in the list, it should be removed. If it does not exist, print a message saying "Element not found". **OR** B. Write a Python function add_contact() that accepts a dictionary phone_book, a name, and a phone number. The function should add the name and phone number to the dictionary. If the name already exists, print **"Contact already exists"** instead of updating it.	2

26	Predict the output of the Python code given below :
	emp = {"Arv": (85000,90000),"Ria": (78000,88000),"Jay": (72000,80000),"Tia": (80000,70000)}
	selected = [ ]
	for name in emp:
	salary = emp[name]
	average = (salary[0] + salary[1]) / 2
	if average > 80000:
	selected.append(name)
	print(selected)
		2

27	A. Write suitable commands to do the following in MySQL. I. View the table structure. II. Create a database named SQP **OR** B. Differentiate between drop and delete query in SQL with a suitable example.	2
28	A. Define the following terms: I. Modem II. Gateway **OR** B. I. Expand the following terms: HTTP and FTP II. Differentiate between web server and web browser.	2
Q No.	**Section-C (3 x 3 = 9 Marks)**	**Marks**
29	A. Write a Python function that displays the number of times the word "Python" appears in a text file named "Prog.txt". **OR** B. Write and call a Python function to read lines from a text file STORIES.TXT and display those lines which doesn't start with a vowel (A, E, I, O, U) irrespective of their case.	3
30	A list containing records of products as L = [("Laptop", 90000), ("Mobile", 30000), ("Pen", 50), ("Headphones", 1500)] Write the following user-defined functions to perform operations on a stack named Product to:	3

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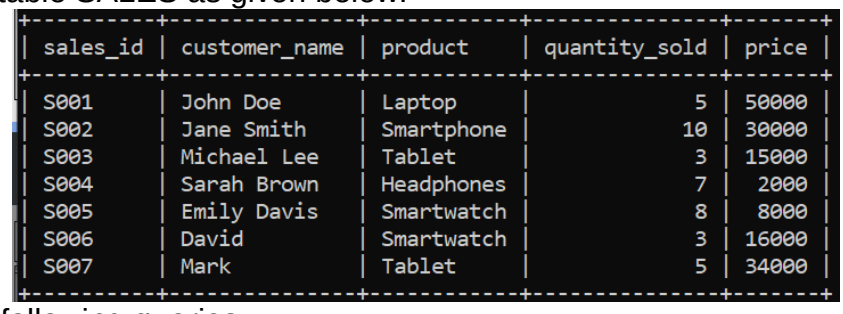
	I. Push_element() – To push an item containing the product name and price of products costing more than 50 into the stack. Output: [('Laptop', 90000), ('Mobile', 30000), ('Headphones', 1500)] II. Pop_element() – To pop the items from the stack and display them. Also, display "Stack Empty" when there are no elements in the stack. Output: ('Headphones', 1500) ('Mobile', 30000) ('Laptop', 90000) Stack Emply	

31	A. Predict the output of the following Python code:
	s1="SQP-25"
	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 following Python code:
	wildlife_sanctuary = ["Kaziranga", "Ranthambhore", "Jim Corbett", "Sundarbans", "Periyar", "Gir", "Bandipur"]
	output = [ ]
	for sanctuary in wildlife_sanctuary:
	if sanctuary[-1] in 'aeiou':
	output.append(sanctuary[0].upper())
	print(output)
		3

Q No.	**Section-D (4 x 4 = 16 Marks)**	**Marks**
32	Consider the table SALES as given below:  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.	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

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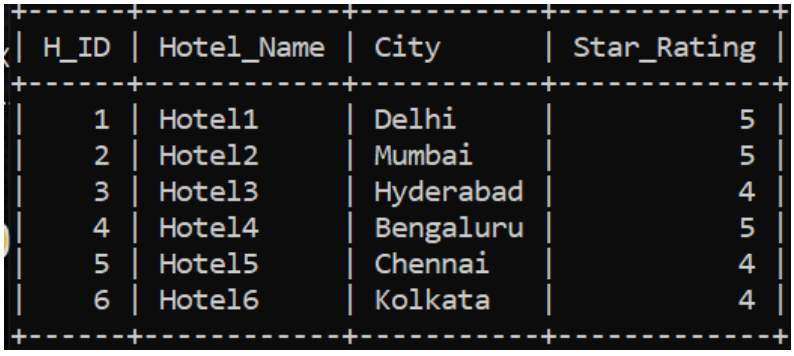
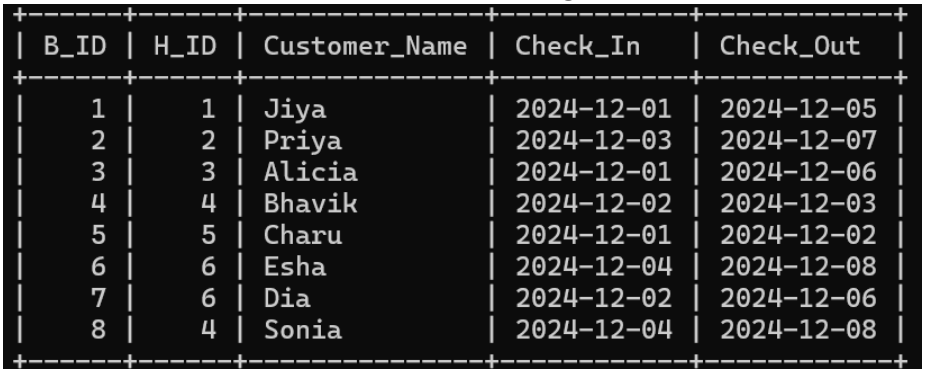
	III. To display the distinct Product names from the SALES table. IV. To display the records of customers whose names end with the letter 'e'. **OR** B. Predict the output of the following: I. SELECT * FROM Sales where product='Tablet'; II. SELECT sales_id, customer_name FROM Sales WHERE product LIKE 'S%'; III. SELECT COUNT(*) FROM Sales WHERE product in ('Laptop', 'Tablet'); IV. SELECT AVG(price) FROM Sales where product='Tablet';	
33	Raj is the manager of a medical store. To keep track of sales records, he has created a CSV file named Sales.csv, which stores the details of each sale. The columns of the CSV file are: Product_ID, Product_Name, Quantity_Sold and Price_Per_Unit. Help him to efficiently maintain the data by creating the following user-defined functions: I. Accept() – to accept a sales record from the user and add it to the file Sales.csv. II. CalculateTotalSales() – to calculate and return the total sales based on the Quantity_Sold and Price_Per_Unit.	4
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: **Table: Hotels**  **Table: Bookings** 	4

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

B_ID	H_ID	Customer_Name	Check_In	Check_Out
1	1	Jiya	2024-12-01	2024-12-05
2	2	Priya	2024-12-03	2024-12-07
3	3	Alicia	2024-12-01	2024-12-06
4	4	Bhavik	2024-12-02	2024-12-03
5	5	Charu	2024-12-01	2024-12-02
6	6	Esha	2024-12-04	2024-12-08
7	6	Dia	2024-12-02	2024-12-06
8	4	Sonia	2024-12-04	2024-12-08

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<table>
<tr><td></td><td>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.</td><td></td></tr>
<tr><td>35</td><td>MySQL database named WarehouseDB has a product_inventory table in MySQL which contains the following attributes:
• 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_user
• Password: warehouse2024
• 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.</td><td>4</td></tr>
<tr><td>Q No.</td><td>Section-E (2 X 5 = 10 Marks)</td><td>Marks</td></tr>
<tr><td>36</td><td>Mr. Ravi, a manager at a tech company, needs to maintain records of employees. Each record should include: Employee_ID, Employee_Name, Department and Salary.
Write the Python functions to:
I. Input employee data and append it to a binary file.
II. Update the salary of employees in the "IT" department to 200000.</td><td>2+3</td></tr>
<tr><td>37</td><td>XYZNova Inc. is planning a new campus in Hyderabad 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:
<table>
<tr><th>From</th><th>To</th><th>Distance (in meters)</th></tr>
<tr><td>HR</td><td>Finance</td><td>50</td></tr>
<tr><td>HR</td><td>IT</td><td>175</td></tr>
<tr><td>HR</td><td>Logistics</td><td>90</td></tr>
<tr><td>Finance</td><td>IT</td><td>60</td></tr>
<tr><td>Finance</td><td>Logistics</td><td>70</td></tr>
<tr><td>IT</td><td>Logistics</td><td>60</td></tr>
</table>
Number of Computers in Each Block:
<table>
<tr><th>Block</th><th>Number of Computers</th></tr>
<tr><td>HR</td><td>60</td></tr>
<tr><td>Finance</td><td>40</td></tr>
<tr><td>IT</td><td>90</td></tr>
</table></td><td>5</td></tr>
</table>

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		Logistics | 35	
	I.	Suggest the best location for the server in the Hyderabad 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 Hyderabad campus to Bengaluru Headquarters?	

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COMPUTER SCIENCE – Code No. 083
MARKING SCHEME
Class - XII - (2025-26)

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General Instructions:

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- In-case of MCQ, text of the correct answer should also be written.

Q No.	Section-A (21 x 1 = 21 Marks)	Marks
1	**Answer:** True **(1 mark for correct answer)**	1
2	**Answer:** c) It **(1 mark for correct answer)**	1
3	**Answer:** b) False **(1 mark for correct answer)**	1
4	**Answer:** Equi-Join or Cartesian Join **(1 mark for correct answer)**	1
5	**Answer:** a) lSf **(1 mark for correct answer)**	1
6	**Answer:** Error as unsupported operand type(s) for +: 'int' and ‘str' **(1 mark for the correct answer)**	1
7	**Answer:** -59.0 **(1 mark for the correct answer)**	1

8	**Answer:** SELECT department, COUNT(*) FROM employees GROUP BY department HAVING COUNT(*) > 5; **(1 mark for correct answer)**	1
9	**Answer:** b) Some other error! **(1 mark for correct answer)**	1
10	**Answer:** d) Not Specified **(1 mark for correct answer)**	1
11	**Answer:** a) 50@70@ **(1 mark for correct answer)**	1
12	**Answer:** c) 5@@12##12 **(1 mark for correct answer)**	1
13	**Answer:** c) Both a) & b) **(1 mark for correct answer)**	1
14	**Answer:** b) ['Watersk', '', 'ng ', 's thr', 'll', 'ng!'] **(1 mark for correct answer)**	1
15	**Answer:** a) Degree: 7 **(1 mark for correct answer)**	1
16	**Answer:** b) ALTER **(1 mark for correct answer)**	1
17	**Answer:** c) POP3 **(1 mark for correct answer)**	1
18	**Answer:** a) A hub sends data to all devices in a network, while a switch sends data to the specific device **(1 mark for correct answer)**	1

19	**Answer:** b) HTML **(1 mark for correct answer)**	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	**Answer:** d) A is False but R is True **(1 mark for correct answer)**	1
21	**Answer:** a) Both A and R are true and R is the correct explanation for A **(1 mark for correct answer)**	1
Q No.	**Section-B (7 x 2=14 Marks)**	**Marks**

22	**Answer:**
	A. Implicit Conversion: Python automatically converts one data type to another.
	
	Example:
	x = 10
	y = 3.5
	result = x + y # x is implicitly converted to float
	Explicit Conversion: The user manually converts one data type to another using functions like int(), float().
	Example:
	x = "10"
	y = int(x) # Explicit conversion from string to integer
	
	(1 mark for correct difference)
	(1/2 mark for each correct example)
	OR
	B. Break exits the loop entirely, while continue skips the current iteration and moves to the next one.
	Example of break:
	for i in range(5):
	  if i == 2:
	  break # Exits the loop
	  print(i)
	Output:
	1
	Example of continue:
	for i in range(5):
	  if i == 2:
		2

	continue # Skips printing 2
	print(i)
	Output:
	1
	3
	4
	5
	(1 mark for correct difference)
	(1/2 mark for each correct example)	

23	**Answer:** **def** remove_first_last(str): if len(str) < 2: return str new_str = str[1:**-1**] return new_str result = remove_first_last("Hello") **print**("Resulting string: "**,** result) **(1⁄2 mark each for correcting 4 mistakes)**	2
24	**Answer:** A. I. index = review.find("good") **(1 mark for correct answer)** II. L1.sort(reverse=True) **(1 mark for correct answer)** **OR** B. ('Learn Python ', 'with', ' fun and practice') **(1 mark for correct answer)** 3 **(1 mark for correct answer)**	2

25	**Answer:**
	A.
	def remove_element(L, n):
	if n in L:
	L.remove(n)
	print(L)
	else:
	print("Element not found")
	OR
	B.
	def add_contact(phone_book, name, number):
	if name in phone_book:
	print("Contact already exists")
	else:
	phone_book[name] = number
	print("Contact added successfully")
	(1/2 mark for function definition)
	(1½ marks for the correct/similar logic)
		2

26	**Answer:** ['Arv', 'Ria'] **(2 marks for the correct output)**	2

27	**Answer:** A. I. Desc table_name; or describe table_name; II. Create database SQP; (1 mark for each correct answer.) **OR** B. The DELETE query removes all the records or specific records from a table, preserving the table structure. Example: DELETE FROM Employees WHERE EmployeeID = 5; The DROP query removes the entire table or database along with its data. Example: DROP TABLE Employees; **(1 mark for correct difference)** **(1/2 mark for each correct example)**	2
28	**Answer:** A. I. A modem is a device that helps connect your computer or other devices to the internet. It converts digital signals from your device into analog signals that can travel through phone lines or other networks, and vice versa. II. A gateway is a device that connects two different networks and helps them communicate with each other. It translates the data between different network types, allowing them to work together. **(1 mark for each correct definition)** **OR** B. I. HTTP: Hypertext Transfer Protocol and FTP: File Transfer Protocol (1/2 mark for each correct expansion.) II. A web server stores and delivers web pages to users over the internet. A web browser requests and displays these web pages on the user's device. **(1 mark for correct point of difference)**	2
Q No.	**Section-C (3 x 3 = 9 Marks)**	**Marks**

29	**Answer:**
	A.
	
	def count_python():
	count = 0
	with open("Prog.txt", 'r') as file:
	text = file.read()
	words = text.split()
	for word in words:
	if word.lower() == "python":
	count += 1
	print("The word Python appears", count, "times.")
	
	(1/2 mark for correct function header)
	(1/2 mark for correctly opening the file)
	(1/2 mark for correctly reading from the file)
	(1/2 mark for splitting the text into words)
	(1/2 mark for correct use of counter variable)
		3

	(1/2 mark for displaying the result)
	OR
	B.
	def display_non_vowel_lines():
	  with open("STORIES.TXT", "r") as file:
	  print("Lines that don't start with a vowel:")
	  lines = file.readlines()
	  for line in lines:
	  if line[0].lower() not in 'aeiou':
	  print(line)
	display_non_vowel_lines()
	(1/2 mark for correct function header)
	(1/2 mark for correctly opening the file)
	(1/2 mark for correctly reading from the file)
	(1 mark for correctly displaying the desired lines)
	(1/2 mark for correctly calling the function)	

30	**Answer:**
	I.
	L = [("Laptop", 90000), ("Mobile", 30000), ("Pen", 50), ("Headphones", 1500)]
	product = []
	def Push_element(L):
	  for i in L:
	  if i[1] > 50:
	  product.append(i)
	  print(product)
	
	II.
	def Pop_element(product):
	  while product:
	  print(product.pop())
	  else:
	  print("Stack Emply")
	
	(1½ marks for each correct part)
		3

31	**Answer:** A. QP-^14 **(3 marks for the correct output)** **OR** B. ['K', 'R'] **(3 marks for the correct output)**	3
Q No.	**Section-D (4 x 4 = 16 Marks)**	**Marks**
32	**Answer:** A. I. SELECT Product, SUM(Quantity_Sold) FROM SALES GROUP BY Product HAVING SUM(Quantity_sold) > 12; II. SELECT * FROM SALES ORDER BY Product DESC; III. SELECT DISTINCT Product FROM SALES; IV. SELECT * from SALES where Customer_Name like "%e";	4

(4 x 1 mark for each correct query)

OR

B.

I.

sales_id	customer_name	product	quantity_sold	price
S003	Michael Lee	Tablet	3	15000
S007	Mark	Tablet	5	34000

II.

sales_id	customer_name
S002	Jane Smith
S005	Emily Davis
S006	David

III.

COUNT(*)
3

IV.

AVG(price)
24500.0000

(4 x 1 mark for each correct query)

33 **Answer:** 4

I.

```
import csv
def Accept():
    product_id = input("Enter Product ID: ")
    product_name = input("Enter Product Name: ")
    quantity_sold = int(input("Enter Quantity Sold: "))
    price_per_unit = float(input("Enter Price Per Unit: "))
    with open('Sales.csv', 'a', newline='') as file:
        writer = csv.writer(file)
        writer.writerow([product_id, product_name, quantity_sold, price_per_unit])
    print("Sales record added successfully.")
```

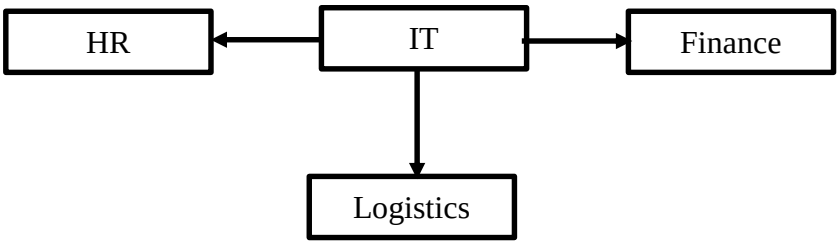
(1/2 mark for correctly taking user input)
(1/2 mark for opening the file in append mode)
(1/2 mark for correctly creating the writer object)

	(1/2 mark for correctly using writerow() of writer object)
	
	II.
	def CalculateTotalSales():
	  total_sales = 0.0
	  with open('Sales.csv', 'r') as file:
	  reader = csv.reader(file)
	  for row in reader:
	  total_sales += int(row[2]) * float(row[3])
	  print("Total Sales is:", total_sales)
	
	(1/2 mark for opening in the file in right mode)
	(1/2 mark for correctly creating the reader object)
	(1/2 mark for correctly checking the condition)
	(1/2 mark for correctly displaying the total sales)
	
	Note (for both parts (I) and (II)):
	Ignore import csv as it may be considered the part of the complete program.	

34	**Answer:** I. SELECT Customer_Name FROM Hotels, Bookings WHERE Hotels.H_ID = Bookings.H_ID AND City = 'Delhi'; II. SELECT Bookings.* FROM Hotels, Bookings WHERE Hotels.H_ID = Bookings.H_ID AND City IN ('Mumbai', 'Chennai', 'Kolkata'); III. DELETE FROM Bookings WHERE Check_In < '2024-12-03'; IV. A. SELECT * FROM Hotels, Bookings; **OR** B. SELECT Customer_Name, Hotel_Name FROM Hotels, Bookings WHERE Hotels.H_ID = Bookings.H_ID; **(4 x 1 mark for each correct query)**	4
35	**Answer:** import mysql.connector connection = mysql.connector.connect(host='localhost',user='admin_user',password='warehouse2024',database='WarehouseDB') cursor = connection.cursor() update_query = "UPDATE product_inventory SET Quantity = 91 WHERE Item_code = 208" cursor.execute(update_query) connection.commit() print("Data updated successfully.") cursor.close() connection.close() **(1/2 mark for correctly importing the connector object)** **(1/2 mark for correctly creating the connection object)** **(1/2 mark for correctly creating the cursor object)**	4

	(1 mark for correct creation of update query) **(1 mark for correctly executing the query with commit)** **(1/2 mark for correctly closing the connection)**	
Q No.	**Section-E (2 X 5 = 10 Marks)**	**Marks**

36	**Answer:**
	I.
	import pickle
	def append_data():
	  with open("emp.dat", 'ab') as file:
	  employee_id = int(input("Enter Employee ID: "))
	  employee_name = input("Enter Employee Name: ")
	  department = input("Enter Department: ")
	  salary = float(input("Enter Salary: "))
	  pickle.dump([employee_id, employee_name, department, salary], file)
	  print("Employee data appended successfully.")
	
	(1/2 mark for correctly defining the function header)
	(1/2 mark for correctly opening the file in append mode)
	(1/2 mark for correctly taking user input)
	(1/2 mark for using dump() method of the pickle module)
	
	II.
	def update_data():
	  updated = False
	  employees = []
	  with open("emp.dat", 'rb') as file:
	  try:
	  while True:
	  employee = pickle.load(file)
	  if employee[2] == "IT":
	  employee[3] = 200000
	  updated = True
	  employees.append(employee)
	  except EOFError:
	  pass
	  with open("emp.dat", 'wb') as file:
	  for employee in employees:
	  pickle.dump(employee, file)
	  if updated:
	  print("Salaries updated for IT department.")
	  else:
	  print("No employee found in the IT department.")
	
	(1/2 mark for correctly defining the function header)
	(1/2 mark for correctly opening the file)
	(1 mark for using load() with while loop and try-except block)
	(1 mark for checking the condition and updating the value)
		2+3

	Note: Note (for both parts (I) and (II)): (i) Ignore import pickle as it may be considered the part of the complete program.	
37	**Answer:** I. Block IT should house the server as it has maximum number of computers. II. a) Repeater is to be placed between Block IT to Block HR as distance between them is more than 100 metres. b) Switch is to be placed in each and every building. III. Draw the star topology cable layout.  IV. Optical Fibre V. A. Voice over Internet Protocol (VoIP) is a technology that allows users to make phone calls and other communications over the Internet instead of a traditional phone line. **OR** B. WAN will be formed. **(5 x 1 mark for each correct part)**	5