BRAIN INTERNATIONAL SCHOOL

PRACTICE PAPER 1

Class: XII Max.Marks:70

Subject: Computer Science Time : 3 hrs.

General Instructions:

(i) This question paper contains 37 questions.
(ii) All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.
(iii) The paper is divided into 5 Sections – A, B, C, D and E.
(iv) Section A, consists of 21 questions (1 to 21). Each question carries1 mark.
(v) Section B, consists of 7 questions (22 to 28). Each question carries 2 marks.
(vi) Section C, consists of 3 questions (29 to 31). Each question carries 3 marks.
(vii) Section D, consists of 4 questions (32 to 35). Each question carries 4 marks.
(viii) Section E, consists of 2 questions (36 to 37). Each question carries 5 marks.
(ix) All programming questions are to be answered using Python Language only.
(x) In case of MCQs, text of the correct answer should also be written.

Section-A (21 x 1 = 21 Marks)

	State whether the following statement is True or False : 'All elements in a tuple must be of same type.'	1
	What will be the output of the following code? S="PRE BOARD@2025" print(S[-4:2:-2]) a. RO b. 2DAB c. 2DA d. @O25	1
3	**Which among the following offers maximum data transfer rate in a network?** a. Fiber Optics b.Twisted Paired Cable c. Coaxial Cable d.UTP	1
4	**Which among the following methods allow you to place the file pointer anywhere in a file?** a. seek() b. tell() c. read() d. write()	1
5	If, T = [1,2,4], [5,3],(1,"ravi"),[4,5] What will be the output of the statement: print(type(T)) ? a. <class 'tuple'> b <class 'list'> c. <class 'str'> d. <class 'dict'>	1
6	**Which among the following SQL command is used to view the structure of a table?** a. VIEW b. DESCRIBE c. SHOW d. SELECT	1
7	**Which of the following aggregate functions ignore null values?** a.count () b. count (*) c. avg () d. sum ()	1
8	**What will the output of the following expression** ? print((100.0/4+(3+2.55)))	1
9	**Which of the following is not a correct output on execution of the following code.** import random p=[30,40,50,60,70,80] a=random.randint(1,3) b=random.randint(2,4) for c in range(a,b+1):	1

	print(p[c],end="$") a. 40$50$ b. 50$ c. 60$ d.80$	
10	**Identify the incorrect function header?** a.def fun(x=1,y) b.def fun(x=1,y,z=2) c.def fun(x=1,y=1,z=2) d.def fun(x=1,y=1,z=2,w)	1
11	**Which among the following is used to create a reference in multiple tables?** a. Unique b. Foreign c. Not null d.Candidate key.	1
12	**_____ communication technology delivers both voice and multimedia communication over the internet protocol.**	1
13	**Identify SQL aggregate function to find mean of numerical values in a column?** a. mean( ) b.average( ) c. Avg( ) d. Count( )	1
14	**Find the output of the following code fragment?** S='All the best for 2026 Board exams' P=S.partition('for') print(P)	1
15	**Which protocol facilitates remote login to any PC** a. SMTP b. FTP c. VOIP d.TELNET	1
16	**Which of the following queries removes the contents of table emp without deleting its structure?** a.DELETE TABLE emp; b. DROP TABLE emp; c. REMOVE TABLE emp; d.DELETE FROM emp;	1
17	**If ,** Emp1={"salary":10000,"dept":"sales","age":24,"name":"john"} **What will be the output of Emp1.keys() ?** a. (['salary', 'dept', 'age', 'name']) b.dict(['salary', 'dept', 'age', 'name']) c. [10000,'sales',24,'john'] d. dict_keys(['salary', 'dept', 'age', 'name'])	1
18	**What will the output of the following expression ?** 7<4 or 6>3 and not 10==10 or 17>4 a.True b. False c. None d. Null	1
19	**What will be the output of the following Python fragement?** a=100 def fun(p): global a a=a*10 print(a,"#",p) fun(10) print(a) a. 1000 # 10 b. 10 # 1000 c.1000 # 10 d. 1000 # 10 10 1000 10 1000	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.	1

20	**Assertion (A):** A try block can have multiple except statements. **Reason (R):** The code executes all the matching exception	1
21	**Assertion (A)** : Unique key constraint defined on a column cannot have NULL values. **Reason (R)** : An attribute identified as the Primary key cannot have DUPLICATE values.	1
	Section-B (7 x 2 = 14 Marks)	
22	**Rewrite the following code after removing all syntax error(s). Underline each correction done in the code.** p=15 for c in range(0,p) If c%4==0: print (c*4) Elseif c%5=0: print (c+3) else: print(c+10)	2
23	**Write the Built -in Functions for the following statements.** (i) To insert an element 20 at the Third position, in the list L1. (ii) To delete an element 10 from a list. Or **Predict the output of the following Python code:** S= "Viksit Bharat!" P=S.split("i") print(len(P)) print(P[-1])	2

24	**Predict the output of the Python code given below:**
	def Gamma(N):
	while N:
	a=N.pop()
	if a%4>2:
	print(a,end='#')
	else:
	break
	NUM=[19,25,12,43,35]
	Gamma(NUM)
	print(NUM)
	OR
	Predict the output of the Python code given below:
	T1 = tuple("Warangal@25")
	T2,new_list =T1[-10:7],[]
	for i in T2:
	if i not in 'aeiou':
	j=T1.index(i)
	new_list+=[j]
	print(new_list)
		2

25	**Write the suitable SQL queries for the following** i. To delete a primary key from a table **Emp** ii. To open a database named **SCHOOL.** **OR** b. Differentiate between count( ) and count(*) in SQL with a suitable example.	2

26	Write a user defined function **DoubleNum( )** to double the multiples of 6 from a list of integers named Nums and also return its sum. For example : If the list Nums contains **[25,24,35,20,72,41]** The function should display Twice of Sum: **192** OR Write a function **Half_List(L)**, to accept a list L as argument and to return another list named 'SList' that stores the Half of all Non-Zero Elements of L. For example: If L contains [9,14,0,18,0,6,0] Then SList will have - [4.5,7.0,9.0,3.0]	2
27	a. **Expand the following:** (i) POP (ii) HTTPS b. Write one advantage and one disadvantage of star topology.	2

28	Write the output of the following code:
	`def divide_numbers(x, y):`
	`  try:`
	`  result = x / y`
	`  except ZeroDivisionError:`
	`  print("Error: Division by zero is not allowed.")`
	`  else:`
	`  print("Division result:", result)`
	`  finally:`
	`  print("End of division operation.")`
	`divide_numbers(20, 2)`
	`divide_numbers(20, 0)`
		2

	Section-C (3 x 3 = 9 Marks)	

29	Write the output for the following python code:
	`def Change_text(Text):`
	`  T=" "`
	`  for K in range(len(Text)):`
	`  if Text[K].isupper():`
	`  T=T+Text[K].lower();`
	`  elif K%2==0:`
	`  T=T+Text[K].upper()`
	`  else:`
	`  T=T+T[K-1]`
	`  print(T)`
	`Text="PM*Shri*KV*25"`
	`Change_text(Text)`
	OR
	Give output of the following:
	`def ChangeLst():`
	`  L=[]`
	`  L1=[]`
	`  L2=[]`
	`  for i in range(1,10):`
	`  L.append(i)`
	`  for i in range(10,1,-2):`
	`  L1.append(i)`
		3

```
    for i in range(len(L1)):
        L2.append(L1[i]+L[i])
    L2.append(len(L)-len(L1))
    print(L2)
ChangeLst()
```

30 Write a function **COUNTTEXT( ),** which reads a text file Book.txt and displays all the words of the file whose length is more than 3 or all words starting with 'A' or 'a'. 3

For example, if the Book.txt file contains "**India is my country. They are studying**".

Then the output should be: **India, country, They, are, studying**

OR

Write a function **COUNTWORD( ),** which counts all the words from the text file Story.txt whose last character is 'y'.

For example, if the Story.txt file contains **"India is my country. They are studying**".

Then the output should be: 3

31 A Dictionary containing records of students marks in computer science as 3

D = {"Ravi":38,"Ramya":99,"Somu":78,"Jeetesh":67,"Sangeetha":95}

Write the following user-defined functions to perform operations on a stack named **Dist** to:

i. **Push_element()** – To push name of the students whose marks are more than 70 into the stack named **Dist.**

ii. **Pop_element()** – To pop the items from the stack named **Dist** and display them. Also, display "Stack Empty" message when there are no elements in the stack.

Section-D (4 x 4 = 16 Marks)

32 Consider the following table CAR: 4

CAR

C_CODE	C_NAME	MAKE	COLOUR	CAPACITY	CHARGES
105	Fortuner	Toyota	White	7	1500
245	Nexon	Tata	Black	5	1000
130	Duster	Renault	Green	6	2000
225	Kwid	Renault	Red	5	2500
120	Seltos	Kia	Black	6	4000
207	Sonet	Kia	Blue	5	2500

a. Write the output of the queries (i) to (iv) based on the table, Car given below:

i. SELECT DISTINCT(COLOUR) FROM CAR;

ii. SELECT * FROM CAR WHERE MAKE LIKE "%a";

iii. SELECT C_NAME,CHARGES FROM CAR WHERE CAPACITY>5 ORDER BY CNAME;

iv. SELECT SUM(CHARGES) FROM CAR WHERE CAPACITY BETWEEN 6 AND 7;

OR

b. Write the following queries:

i. To display all records of black colored cars from CAR table.

ii. To display name of the car and its capacity in ascending order of capacity.

iii. To display average charges of cars which are belongs to kia group.

iv. To display car name and charges of 6 seater cars.

33 "employee.csv" is a csv file consisting of records stored in the form of a list having fields eid, name and salary that stores employee id, employee name and employee salary respectively of an employee. 4

Write user defined function in Python to

i. **add( )** – To accept and add data of an employee to 'employee.csv'.

ii. **search( )**- To count and display number of records of employees whose salary is more than 60000.

34 **Write the SQL queries (a) to (d) based on the relations Teacher and Placement.** 4

Teacher

T_ID	Name	Age	Department	Salary	Gender	DOJ
10	Srikanth	40	Computer Sci.	78000	Male	2010-07-29
11	Shilpa	35	Mathematics	56000	Female	2015-02-20
12	Manushri	30	Arts	45000	Female	2017-05-05
13	Sai Sathvik	32	Computer Sci.	72000	Male	2016-10-20
14	Narsimha	50	Arts	85000	Male	2007-01-30
15	Srinivas	45	Computer Sci.	76000	Male	2008-05-21
16	Srilatha	42	History	60000	Female	2011-09-15

Placement

PID	Department	City
101	Computer Sci.	Hyderabad
102	Mathematics	Bangalore
103	Arts	Chennai
104	History	Mumbai

a) To display teacher names and their salaries whose names ending with letter 'a'.
b) To display name of the teachers, department and City from the above tables of female teachers.
c) To increase the salary of computer science department teachers by 5%.
d) To display all details of teachers with their placement from the above tables.

OR

To display minimum salary and maximum salary in each department.

35 A MYSQL database named ITEMDB contains a table ITEMS having the following attributes 4

Itemno - int(10)
Itemname - varchar(20)
Price - float
Qty - int(10)

Write a Python program to display all records from the ITEMS table where Price is greater than 500.

Consider the following details to establish Python-MySQL connectivity:

Host: **localhost**, User: **root**, Password: **Pencil**

Section-E (2 X 5 = 10 Marks)

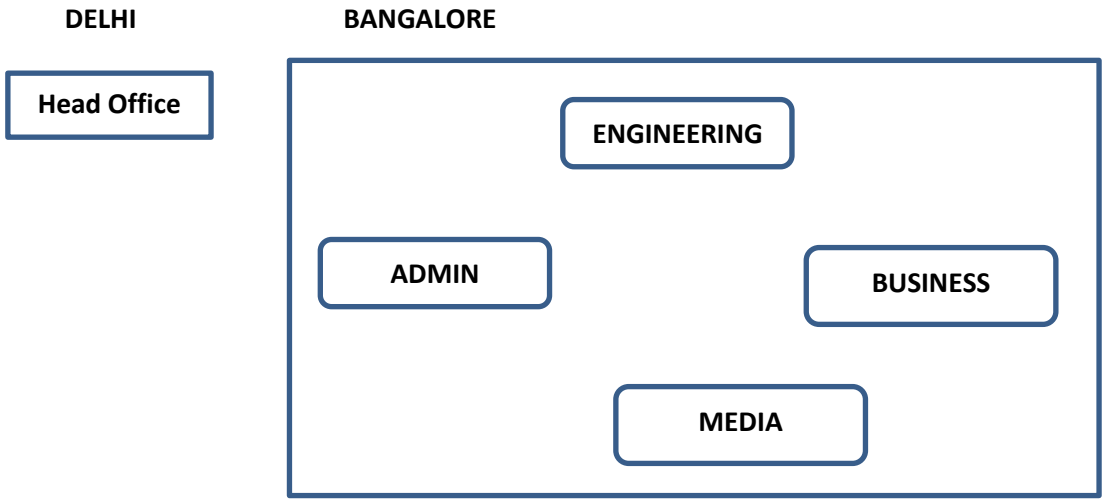
36 Mr. Srikanth, IT developer of a company, requires to maintain records of employees in the format [E_ID, E_Name, Desig, Salary]. 5

Ex: [[101,"Ravi","PGT",98000],[102,"Roja",TGT",89000],…….]

Write Python functions to:

i. **Add_emp():-**to input data for employees and write it to a binary file EMP.DAT.
ii. **Update_sal():-**to increase salary of all PGT's by 10% and update it in EMP.DAT.

37	ABC company is an educational institution. It is planning to setup its campus at Bangalore with its head office at Delhi. The Bangalore campus has 4 buildings – ADMIN, ENGINEERING,BUSINESS and MEDIA.	5



Block to Block distances (in Mtrs.):

FROM	TO	DISTANCE
ADMIN	ENGINEERING	65 m
ADMIN	BUSINESS	90 m
ADMIN	MEDIA	60 m
ENGINEERING	BUSINESS	45 m
ENGINEERING	MEDIA	70 m
BUSINESS	MEDIA	55 m
DELHI HEAD OFFICE	CHENNAI CAMPUS	2175 m

No.of Computers in each of the blocks/Center is as follows:

ADMIN	90
ENGINEERING	65
BUSINESS	40
MEDIA	12
DELHI HEAD	30

a. Suggest the most suitable place (i.e Building) to house the server of this organization with a suitable reason.
b. What network type (out of LAN,MAN,WAN) for connecting Head office to Bangalore office?
c. Suggest an efficient device from the following to be installed in each of the building to connect all the computers.
   i.Gateway ii. Hud/Switch iii.Repeater iv.Modem
d. Suggest and draw a cable layout of connections between the buildings in Bangalore office.
e. Which wireless medium can be used to connect the head office at DELHI with the campus in BANGALORE.

OR

Which protocol is required to transfer the files from head office to Bangalore office.

BRAIN INTERNATIONMAL SCHOOL

PRACTICE PAPER 2

CLASS - XII **MAX. MARKS - 70**

SUB - COMPUTER SCIENCE **TIME - 3 HOURS**

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, the 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 10: import statistics statistics.median([10, 20, 10, 30, 10, 10, 20, 30])	1
2	What will be the output of the following code? L = ["Kendriya", "Vidyalaya", "Sangathan"] print(L[1][0] + 2*L[2][-1]) a) Vnn b) Kn c) Type Error d) Vn	1
3	Consider the given expression: print(not {}==True and 29>19 and 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) produces output where cardinality of the final table is the multiplication of cardinalities of both the tables (which are being joined)	1
5	What will be the output of the following Python code? str= "A Communication" print(str[-3:0:-3]) a) icuoA b) icuo c) iim_ d) Error	1
6	Write the output of the following Python code : for k in range(2,-8,-2): print (k * 2)	1

7	What will be the output of the following Python statement: print(8-2**3**2+500)	1
8	Consider the given SQL Query: SELECT CLASS, COUNT(*) FROM employees HAVING COUNT(*) > 5 GROUP BY CLASS WHERE CLASS IN (9,10,11,12); Rabina is executing the query but not getting the correct output. Write the correction.	1

9	What will be the output of the following Python code?
	try:
	  value = int("abc")
	except ZeroDivisionError:
	  print("Zero Division error!")
	except Exception:
	  print("Some other error!")
	except ValueError:
	  print("Conversion error!")
	
	a) Division by zero error! b) Some other error!
	c) Conversion error! d) Nothing is printed
		1

10	What will be the output of the following Python code? my_dict = {"name": "Alicia", "age": 27} my_dict.update({"Age": 28, "city": "Delhi"}) print(my_dict) a) {"name": "Alicia", "age": 27, "city": "Delhi"} b) {"name": "Alicia", "age": 28, "city": "Delhi"} c) {'name': 'Alicia', 'age': 27, 'Age': 28, 'city': 'Delhi'} d) Error	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 nums = [5, 15, 25, 35, 45] start = random.randint(1, 2) end = random.randint(2, 4) for i in range(start, end + 1): print(nums[i], end="#") a) 5#15# b) 15#35# c) 15#25#35#45# d) 35#45#	1

12	What will be the output of the following Python code?
	x = 8
	print(x, end='$$')
	def modify():
	  global x
	  x = x * 2
	  print(x, end='@@')
	modify()
	print(x)
		1

	a) 8$$16@@16 b) 8$$16@@8 c) 8$$16@@16@@ d) 8$$16@@8$$	
13	Which SQL command can change the Degree of an existing relation? a) Alter b) Update c) Both a) & b) d) Degree Can't be changed	1
14	What is the output of the given Python code? st='CBSE 2022-2023' print(len(st.split("2"))) a) 3 b) 4 c) 5 d) 6	1
15	In SQL, a relation consists of 6 columns and 6 rows. If 3 columns and 3 rows are added to the existing relation, what will be the updated Cardinality of a relation? a) 7 b) 8 c) 9 d) 6	1
16	Which SQL command will **NEVER** change the cardinality or Degree of a table? a) UPDATE b) ALTER c) INSERT d) DELETE	1
17	Which of the following Networking Protocol is used for remote login. a) SMTP b) FTP c) POP3 d) TELNET	1
18	Which of the following statements is correct about using a Router and a Gateway in a computer network? A) A router connects multiple networks and directs data between them, while a gateway connects networks using different protocols. B) A router and a gateway perform the same function and can be used interchangeably. C) A router connects devices within same network, while a gateway connects wireless networks. D) A router connects two networks while gateway disconnects different networks.	1
19	Which of the following is primarily used to define the structure and store or transport data in a web application? A) HTML B) CSS C) JavaScript D) XML	1
Q20 and Q21 are Assertion(A) and Reason(R) based questions. Mark the correct choice as: Both A and R are True and R is the correct explanation for A. Both A and R are True and R is not the correct explanation for A. A is True but R is False. A is False but R is True.		
20	**Assertion (A):** The expression {"a": 1, "b": 2}.update({"c": 3}) in Python will modify the original dictionary. **Reason (R)**: The update() method adds key-value pairs to a dictionary and modifies it in place.	1
21	**Assertion (A):** A foreign key can have duplicate values and can also be NULL. **Reason (R):** A foreign key establishes a link between two tables, referring to the primary key of another table.	1
Q No.	**Section-B (7 x 2=14 Marks)**	**Marks**
22	A. Explain the difference between mutable and immutable data types in Python with a suitable example. **OR** B. Explain the difference between local and global variables in Python with a suitable example.	2

23	The code provided below is intended to find the sum of all elements present in the list. Rewrite it after removing all the errors. Also, underline all the corrections made. define list_sum(numbers) total = 0 For i in numbers: total =+ i return total Print(list_sum([1,2,3,4]))	2
24	A. (Answer using Python built-in methods/functions only): I. Write a statement to remove the first occurrence of "banana" from a list named fruits. II. Write a statement to count how many times the word "apple" appears in a string named text. **OR** B. Predict the output of the following Python code: text="We shall overcome some day" print(text.partition("me")) print(text.split("me"))	2
25	A. Write a function replace_element(L, old, new) that replaces the first occurrence of old with new in list L. If old is not found, print "Element not found". **OR** B. Write a Python function delete_contact(phone_book, name) that accepts a dictionary phone_book and a name. The function should remove a contact with the parameter 'name' from the dictionary. If the contact doesn't exist, print "Contact not found". Note: Dictionary has name as key and phone number as value.	2

26	Predict the output of the Python code given below :
	scores = {"A": (40, 60), "B": (80,90), "C": (70, 75)}
	high = []
	for s in scores:
	avg = sum(scores[s]) / 2
	if avg > 70:
	high.append(s)
	print(high)
		2

27	A. Write suitable commands to do the following in MySQL. I. Select the Database(school_db) to work upon it. II. Add a column 'ID' which will be the primary key of the table(students) Assume: The Table does not have a primary key. **OR** B. Differentiate between Update and Alter query in SQL with a suitable example.	2
28	A. Define the following terms: I. Router II. Repeater **OR** B. I. Expand the following terms: TCP/IP and SMTP II. Differentiate between HTML and XML.	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 begins with "KV" 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 count lines which have a vowel (A, E, I, O, U) irrespective of their case.	3
30	A list containing records of students as L = [("Riya", 85), ("Amit", 42), ("Sneha", 76), ("Raj", 33)] Write the following user-defined functions to perform operations on a stack named Student to: **Push_element()** – To push an item containing the student name and marks of students scoring 50 or more into the stack. **Output:** [('Riya', 85), ('Sneha', 76)] **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:** ('Sneha', 76) ('Riya', 85) Stack Empty	3

31	Predict the output of the following Python code:
	
	`code = "Oh! Kolkata-25"`
	`new_code = ""`
	`for ch in code:`
	`  if ch.isdigit():`
	`  new_code = new_code + str(int(ch) + 1)`
	`  elif ch.isalpha():`
	`  new_code = new_code + ch.lower()`
	`  else:`
	`  new_code = new_code + "#"`
	`print(new_code)`
	OR
	
	Predict the output of the following Python code:
	
	`cities = ["Ahmedabad","Mumbai","Kolkata","Pune","Chennai", "Agra", "Bhopal"]`
	`result = []`
	`for city in cities:`
	`  if city[0] in "AEIOUaeiou":`
	`  if city[-1] not in "AEIOUaeiou":`
	`  result.append(city[-1].upper())`
	`  else:`
	`  result.append(city[-1].lower())`
	
	`print(result)`
		3

<table>
<tr><th>Q No.</th><th>Section-D (4 x 4 = 16 Marks)</th><th>Marks</th></tr>
<tr><td>32</td><td>Consider the following table ORDERS:
<table>
<tr><th>OrderID</th><th>CustomerName</th><th>City</th><th>Product</th><th>Quantity</th><th>Amount</th></tr>
<tr><td>O101</td><td>Ravi</td><td>Delhi</td><td>Laptop</td><td>2</td><td>90000</td></tr>
<tr><td>O102</td><td>Sneha</td><td>Mumbai</td><td>Mouse</td><td>5</td><td>2500</td></tr>
<tr><td>O103</td><td>Aman</td><td>Delhi</td><td>Laptop</td><td>1</td><td>45000</td></tr>
<tr><td>O104</td><td>Reena</td><td>Kolkata</td><td>Keyboard</td><td>3</td><td>3600</td></tr>
<tr><td>O105</td><td>Aarav</td><td>Delhi</td><td>Mouse</td><td>6</td><td>3000</td></tr>
<tr><td>O106</td><td>Meena</td><td>Mumbai</td><td>Laptop</td><td>2</td><td>92000</td></tr>
</table>
Write SQL queries for the following:
I. To display the details of all orders placed from Delhi in descending order of amount.
II. To count the distinct product names from the ORDERS table.
III. To display the total quantity ordered for each product in Delhi
IV. To display product names and their total quantities ordered only for those products where total quantity exceeds 10
OR
B. Predict the output of the following:
V. Select customername, city from orders where customername like 'a%';
VI. Select city, count(*) from orders group by city order by city;
VII. Select product, sum(quantity) from orders group by product having sum(quantity) > 5;
VIII. Select city, count(orderid) from orders group by city having count(orderid) >= 2</td><td>4</td></tr>
<tr><td>33</td><td>A csv file "record.csv" contains the data where each record consists of a list with field elements as empid(int), name(string) and salary(int) to store employee id, employee name and employee salary respectively.
Write user defined functions in Python that defines the following:
(i) ADD() – To accept and add data of an employee to a CSV file ‘record.csv’.
(ii) COUNTR() – To count the number of records present in the CSV file named ‘record.csv’ whose salary is more than 100000 and empid is of 5 digit.</td><td>4</td></tr>
<tr><td>34</td><td>Afreen is managing a company and needs to access certain information from the table Departments and Employee for an upcoming survey. Help her to extract the required information by writing the appropriate SQL queries as per the tasks mentioned below:
Table: Departments
<table>
<tr><td>D_ID</td><td>Dept_Name</td><td>Location</td></tr>
<tr><td>1</td><td>HR</td><td>Delhi</td></tr>
<tr><td>2</td><td>IT</td><td>Mumbai</td></tr>
<tr><td>3</td><td>Finance</td><td>Kolkata</td></tr>
<tr><td>4</td><td>Marketing</td><td>Chennai</td></tr>
<tr><td>5</td><td>R&D</td><td>Bengaluru</td></tr>
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</table>

Table: Employees

E_ID	E_Name	D_ID	Join_Date	Salary
101	Riya	1	2023-02-12	55000
102	Aarav	3	2023-04-20	75000
103	Meena	2	2023-06-15	60000
104	Rahul	4	2023-07-25	45000
105	Priya	1	2023-09-10	58000
106	Karan	5	2023-10-05	72000
107	Sneha	2	2023-03-18	64000

I. To display the names of employees working in departments located in 'Delhi'.
II. To display the department name, employee name and salary for employees working in 'Mumbai' or 'Kolkata'.
III. To delete all employee records who joined before '2023-04-01' with salary less than 65000
IV. A. To display the natural join for the two tables.

OR

B. To display the cartesian product for the two tables.

35 A MySQL database named LibraryDB has a table books_info which contains the following attributes: 4

Book_ID: Book identification number (Integer)

- Title: Title of the book (String)
- Author: Author name (String)
- Price: Price of the book (Integer)

Consider the following details to establish Python–MySQL connectivity:

- Username: library_admin
- Password: lib@2025
- Host: localhost

Write a Python program to update the Price by giving a 10% discount where Author name starts with 'A'

Q No.	Section-E (2 X 5 = 10 Marks)	Marks
36	Mrs. Swapna, principal at a school, needs to maintain records of students. Each record should include: Stud_ID, Stud_Name, Class and Attendance. Write the Python functions to: 1. Input Student data as long as the user wishes to enter and write all data in binary file. 2. Delete all records where attendance is less than 50%.	2+3
37	KVS is planning a new campus at Melbourne while maintaining its headquarters in Delhi. The campus will have four buildings: Academics, Payroll, Admin and Innovation. As a network expert,	5

you are tasked with proposing the best network solutions for their needs based on the following:

From	To	Distance (in meters)
Academics	Payroll	50
Academics	Admin	175
Academics	Innovation	90
Payroll	Admin	60
Payroll	Innovation	70
Admin	Innovation	60

Number of Computers in Each Block:

Block	Number of Computers
Academics	60
Payroll	40
Admin	90
Innovation	35

1. Suggest the most suitable location to house the server in the Melbourne campus and explain your reasoning.
2. Suggest the placement of the following devices:
   a) Modem b) Repeater
3. Suggest and draw a cable layout of connections between the buildings inside the campus.
4. Which of the wired cables will be most economical for connecting all the blocks at Melbourne campus.
5. A. What would be your recommendation for enabling live visual communication between the Admin Office at the Melbourne campus and the Delhi HQ from the following options, also mention which networking protocol will be used for enabling the correct option.
   a) Video Conferencing
   b) Email
   c) Telephony
   d) Instant Messaging

   OR

   B. Which type of network (PAN, LAN, MAN, or WAN) will be formed while connecting the Melbourne campus to Delhi Headquarters and why?