

## SAMPLE PAPER -2

### COMPUTER SCIENCE (083) - XII

### TERM - 2

**Maximum Marks: 35**
**Time: 2 hours**

#### General Instructions

- The question paper is divided into 3 sections – A, B and C
- Section A, consists of 7 questions (1-7). Each question carries 2 marks.
- Section B, consists of 3 questions (8-10). Each question carries 3 marks.
- Section C, consists of 3 questions (11-13). Each question carries 4 marks.
- Internal choices have been given for question numbers 7, 8 and 12.

#### Section -A

**Each question carries 2 marks**

**Q1.** Write the name of the operations that can be applied on stacks. Also write the name of functions that are used to perform the task. **2**

**Q2. (i)** Expand the following: **1**

HTML, URL

**(ii)** Which is the transmission medium for TV remotes? **1**

Infrared, Coaxial cable, Optical fibre, Microwave, Ethernet cable.

**Q3. (i)** Which constraint specifies the values in the column must be unique? **1**

**(ii)** Which constraint specified with a column uniquely identifies each row in a table? **1**

**Q4. (i)** Which method returns the next row from the result set as tuple? **1**

**(ii)** How can one create a cursor object? Which property can be used to output the number of rows resulting from the SQL Query? **1**

**Q5.** Write the output of the queries (a) to (d) based on the table store\_items, given below: **2**

Item_Id	Item_Name	Item_Brand	GST	Price	Unit
1001	Milk	Verka	Cat1	25	litre
1002	Curd	Verka	Cat1	50	kg
1003	Lassi	Verka	Cat1	30	litre
1004	Chaach	Amul	Cat1	20	litre

1005	Unpacked Paneer	None	Cat1	100	kg
1006	Eggs	None	Cat2	48	dozen
1007	Gur	None	Cat3	40	kg
1008	Honey	None	Cat3	200	litre
1009	Salt	Tata	Cat4	21	kg
1010	Sugar	None	Cat7	60	kg
1011	Tea	Tata	Cat8	370	kg
1012	Edible Oils	Various Brands	Cat13	100	litre
1013	Roasted Coffee Beans	Bru	Cat8	100	kg

- a) SELECT Sum(Price) FROM store\_items WHERE GST in ("Cat1", "Cat2");
- b) SELECT count(Distinct Item\_Brand) FROM store\_items;
- c) SELECT Item\_Name FROM store\_items where Unit Like "d%";
- d) SELECT \* FROM store\_items WHERE Price>=200 AND Item\_Brand!="None";

**Q6. (i)** Which clause aggregates the base data?

1

Which clause filters the aggregated data?

**(ii)** Give one point of difference between an equi-join and a natural join.

1

**Q7. i)** Consider the table Employee with the following records:

2

**Table: Employee**

ECODE	NAME	DESIG	SGRADE	DOJ	DOB
101	Sneha Bhardwaj	EXECUTIVE	S01	2003-03-23	1980-01-13
102	Ravi Chander	HEAD-IT	S02	2010-02-12	1987-07-22
103	Sunita Kumari	RECEPTIONIST	S03	2009-06-20	1983-02-24
108	Ravi Kumar	GM	S04	2006-08-11	1984-03-03
107	Priyam Sen	Head-IT	S05	2004-12-29	1984-03-03

**(a)** In table Employee, identify which of the two columns are uniquely identified each row? Which key can be made with these columns?

**(b)** What is the cardinality and degree of the Employee table?

**OR**

**ii)** Consider the table Salary and answer the following questions:

SNO	SGRADE	SALARY
1	S01	28000
2	S02	45000
3	S03	25000
4	S04	90000
5	S05	50000

(a) How can we access records from both the tables Employee and Salary?

(b) How many rows and columns will be there after the cartesian product of these two tables?

## Section – B

Each question carries 3 marks

**Q8.** Coach Abhishek stores the races and participants in a dictionary. Write a program, with separate user defined functions to perform the following operations: 3

- Push the names of the participants of the dictionary onto a stack, where the distance is more than 100.
- Pop and display the content of the stack. For example:

If the sample content of the dictionary is as follows:

Races = {100: 'Varun', 200: 'Javed', 400: 'Kabeer', 800: 'Mitra'}

The output from the program should be:

**Mitra Kabeer Javed**

OR

A linear stack called status contains the following information :

- (i) Phone number of Employee
- (ii) Name of Employee

Write the following methods to perform given operations on the stack status :

- (i) **Push\_element ( )** To Push an object containing Phone number of Employee and Name of Employee into the stack.
- (ii) **Pop\_element ( )** To Pop an object from the stack and to release the memory.

**Q9.** (i) A table Transport is created with the following columns: 1

**Bus\_No, Bus\_route, Area, No\_of\_students, Helper\_Name, Charges**

Write an SQL command to increase the Bus charges by 12% for all students.

(ii) Write the category DDL, DML or DCL for the following commands

2

**GRANT, DROP TABLE, INSERT INTO, UPDATE...SET, REVOKE**

**Q10.** Sahil wants to create a database **HARDWARE** which has a table **RENTAL**. He wants to make sure that city name is unique and no field is left empty in the table. Write the SQL commands for the fields given below.

3

RENTAL_ID	INT	PRIMARY KEY
RENTAL_DATE	DATETIME	NOT NULL
INVENTORY_ID	VARCHAR(6)	NOT NULL
CUSTOMER_ID	VARCHAR(6)	NOT NULL
RETURN_DATE	DATETIME	NOT NULL
CITY	VARCHAR(6)	UNIQUE NOT NULL

## Section C

**Each question carries 4 marks**

**Q11.** A database called ecompany has two tables COMPANY and CUSTOMER with the following records.

Write SQL commands for the queries (a)-(d) based on the two tables COMPANY and CUSTOMER

4

**TABLE: COMPANY**

PID	NAME	CITY	PRODUCTNAME
2101	APPLE	DELHI	WATCH
2102	SAMSUNG	BANGALORE	MOBILE
2103	PANASONIC	DELHI	TV
2104	SONY	MUMBAI	MOBILE
2105	LENOVO	INDORE	TABLET
2106	DELL	MUMBAI	LAPTOP

**TABLE: COUSTOMER**

CUSTID	NAME	UNITPRICE	QTY	PID
101	REENA SONI	60,000	10	2102
102	MICHAEL PAUL	50,000	20	2106
103	MEETALI SINGH	70,000	15	2101
104	PARUL SOHAL	55,000	3	2103
105	RAJESH DESWAL	45,000	7	2104

- Write an SQL statement to display the name of the companies in reverse alphabetical order.
- To add one more column to the table customer called TOTAL\_PRICE which can have up to two decimal places.
- Write an SQL statement to count the products city wise.

d) Write an SQL statement to display the customer name, product of the unit price and quantity, product name where the name of the city is Mumbai.

**Q12. (i)** What is of Network? What is the geographical scope of LAN, MAN and WAN? **2**

**OR**

What do you understand by HTTP? How is it related to World Wide Web.

(ii) How is a Gateway different from a Switch? **2**

**Q13.** Learnpython4cbse Academy has for wings A, B, C, D **4**

Distance between various wings are given below:

Wing A to Wing B-100m

Wing A to Wing C-200m

Wing A to Wing D-400m

Wing B to Wing C-300m

Wing B to Wing D-100m

Wing C to Wing D-450m

Number of Computers installed at various wings are as follows:

Wing A-20

Wing B-150

Wing C-50

Wing D-25

(i) Suggest the best wired medium and the cable layout to efficiently connect various wings of Learnpython4cbse Academy.

(ii) Name the most suitable wing where the Server should be installed. Justify your answer.

(iii) Suggest a device/software and its placement that would provide data security for the Academy.

(iv) What will be needed to provide wireless Internet access to all smartphone/laptop users in the Academy.