

PRACTICE PAPER-3(TERM-2)

XII-COMPUTER SCIENCE (083)

Time allowed: 2 hours

Maximum Marks: 35

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. Differentiate between enqueue and dequeue. (2)

| Enqueue | Dequeue |
|--|--|
| This adds an element to the end of the queue and we can use append() to add element at the end or rear of the queue. | This removes or deletes the element from the beginning of the queue. We use pop(0) to remove element from the first place. |

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.

Ans. (i) Hyper Text Markup Language, Uniform Resource Locator
(ii) Infrared

Q3. (i) Which SQL logical operator is used to compare a value with a NULL value? (2)

(ii) Which SQL logical operator is used to search for the presence of a row in a specified table that meets a certain criterion?

Ans. (i) IS NULL (ii) EXISTS

Q4. How can one create a cursor object? Which property can be used to output the number of rows resulting from the SQL Query? (2)

Ans. You can create cursor object using the cursor() method of the Connection object/class. The rowcount property is used to output the number of rows resulted from the SQL query.

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

Table Store_Items:

| Item_Id | Item_Name | Item_Brand | CategoryID | Price | Unit |
|---------|-----------|------------|------------|-------|-------|
| 1010 | Milk | Verka | Cat1 | 20 | litre |
| 1012 | Curd | Amul | Cat1 | 50 | kg |
| 1003 | Lassi | Vita | Cat1 | 30 | litre |
| 1024 | Chaach | Amul | Cat1 | 20 | litre |
| 1006 | Eggs | None | Cat2 | 48 | dozen |
| 1007 | Gur | None | Cat3 | 40 | kg |
| 1008 | Honey | None | Cat3 | 200 | litre |
| 1009 | Salt | None | Cat4 | 21 | kg |

- (a) Identify the candidate keys of the table.
 (b) Which field should be made the primary key? Justify your answer.

Ans. (a) Item_Id and Item_Name are the candidate keys
 (b) Item_Id should be made the primary key as it uniquely identifies each record of the table.

(SECTION B)

Each question carries 3 marks

Q8. Create a function enqueue() to add multiples of 3 up to 30 to a queue. Then dequeue all the items of this queue using dequeue(), this function returns the deleted item each time or otherwise it displays an appropriate error message. Display the numbers from the queue in a single line. (3)

Ans. #Adding elements to the queue
 def enqueue(data):
 queue.append(data)
 #Removing elements from the queue
 def dequeue():
 if len(queue)>0:
 return queue.pop(0)
 return ("Queue Empty!")
 # executable code
 queue=[]
 for x in range(3,30,3):
 enqueue(x)
 for i in range(len(queue)):
 print(dequeue(),end=" ")

Q9. (i) Write the SQL statement to change the Price of Milk from 25 to 30 in the table STORE_ITEMS given below. (3)

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

**(ii) Write the category DDL, DML or DCL for the following commands
GRANT, DROP TABLE, INSERT INTO, UPDATE...SET, REVOKE**

Ans. (i) UPDATE STORE_ITEMS SET Price=25 WHERE Item_Id='1001';

(ii) DDL: DROP TABLE

DML: INSERT INTO, UPDATE. . .SET

DCL: GRANT, REVOKE

Q10. Ravish is a Database Admin who joins a Technology company DataSys. The company has a database to which Ravish wants to add another table. What will be the SQL commands for creating the table while checking whether the table COUNTRIES already exists. (3)

The following are the details of the table structure:

| | |
|-------------------|----------------------------|
| COUNTRY_ID | CHAR(5) PRIMARY KEY |
| COUNTRY_NAME | VARCHAR(20) |
| ADDRESS | VARCHAR(30) |
| CITY | VARCHAR(20) |
| CITY_CODE | CHAR(5) |
| CURRENCY | DECIMAL(10,0) |

Ans. The SQL commands are:

```
CREATE TABLE IF NOT EXISTS COUNTRIES (
COUNTRY_ID CHAR(5) PRIMARY KEY,
COUNTRY_NAME VARCHAR(20),
ADDRESS VARCHAR(20),
CITY VARCHAR(20),
CITY CODE CHAR(5),
CURRENCY DECIMAL(10,0));
```

(SECTION C)

Each question carries 4 marks

Q11. Write the SQL statement to display all the information asked in queries (a-d) based on the tables below: (4)

SALESPERSON TABLE

| salesperson_id | name | city | incentive |
|----------------|--------------|-----------|-----------|
| 1001 | Nitin Jairam | Delhi | 0.12 |
| 1002 | Gaurav Jha | Kolkata | 0.13 |
| 1007 | Vinita S | Hyderabad | 0.11 |
| 1003 | Jockim Lobo | Bangalore | 0.15 |
| 1005 | Arun Mehta | Bhopal | 0.14 |
| 1006 | Vinny Noom | Mumbai | 0.12 |

ORDER TABLE

| order_No | purch_amt | order_date | customer_id | sales person_id |
|----------|-----------|------------|-------------|-----------------|
| 30001 | 1500 | 2019-10-15 | 2002 | 1003 |
| 30002 | 2400 | 2019-09-05 | 2005 | 1002 |
| 30003 | 2100 | 2019-11-25 | 2001 | 1007 |
| 30004 | 3200 | 2019-10-07 | 2006 | 1003 |
| 30005 | 3520 | 2019-08-12 | 2003 | 1005 |
| 30006 | 2600 | 2019-03-01 | 2004 | 1007 |
| 30007 | 2100 | 2019-11-25 | 2007 | 1001 |
| 30008 | 3200 | 2019-10-07 | 2006 | 1003 |
| 30009 | 3520 | 2019-08-12 | 2003 | 1005 |
| 30010 | 2600 | 2019-03-01 | 2001 | 1007 |

- a) Delete the record from order table where order number is 30009
- b) Write an SQL statement to display customer_id and salesperson_id from order table where purch_amount is between 1000 and 2500.
- c) Write a query to display all the columns from salesperson sort the result in an ascending order by the name and incentive.

d) Write an SQL statement to display salesperson_id and sum of purch_amount from order table grouped by customer_id.

Ans. a) DELETE FROM order WHERE order_no=30009;

b) SELECT customer_id, salesperson_id FROM order WHERE purch_amount BETWEEN 1000 AND 2500;

c) SELECT * FROM salesperson ORDER BY name, incentive;

d) SELECT salesperson_id, SUM(purch_amt) FROM order GROUP BY customer_id;

Q12. What is network Topology, explain with examples of topologies. (4)

Ans. Network Topology is the geographical, physical or logical arrangement of computer networking devices. Topology is the way in which the various nodes or computers of a network are linked together or the actual layout of the computer network hardware.

Some Network Topologies are: Bus Topology, Ring Topology, Star Topology, Mesh Topology and Tree Topology.

Q13. National Skill Training Academy has four 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 National Skill Training 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.

Ans. (i) Optic Fibre and Star Topology.

(ii) Wing B as it has the maximum number of computers

(iii) Firewall with the server in Wing B.

(iv) A High bandwidth Broadband Connection and Wi-Fi Router.