

2022

COMPUTER SCIENCE

Full Marks : 30

Time : 4 hours

SET-I (One)

(Answer question 1 and 2 from Group-A and One question from Group-B)

GROUP – A

(PYTHON PROGRAMMING :: 8 MARKS)

1. Write a program to enter the length and breadth of a rectangle and calculate its area. 4

OR

Write a program to reverse a given three digit number. 4

2. Write a program to print the time table of any given number. 4

OR

Write a program to print n natural numbers and find their sum. 4

GROUP – B

(SQL COMMANDS :: 4 MARKS)

3. Create the table 'Accessories' based on the following structure: 4

Field Name	Datatype	Size	Constraint
A_No	Char	3	Primary Key, not null
Aname	Varchar	20	
Price	Number	(5, 2)	

(2)

Insert the following records into the table

A01	Motherboard	15,000
A02	Hard disk	4,000
A03	Keyboard	300
A04	Mouse	300
A05	Keyboard	400

Display the name and price of all the accessories in ascending order of the price. 4

OR

Create the table Marks using appropriate datatypes size and constraints using SQL commands. 4

Student_id, Student Name, Unit Test I, Unit Test 2.

Insert at least 4 records and display the table.

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SET-II (Two)

(Answer question 1 and 2 from Group-A and One question from Group-B)

GROUP – A

(PYTHON PROGRAMMING :: 8 MARKS)

1. Write a program that accepts radius of a circle and prints its area. 4

OR

Write a program to display a menu for calculating area of a circle or calculating perimeter of a circle. 4

2. Write a program that takes a string with multiple words and then capitalizes the first letter of each word. 4

OR

Write a program to create a list of integers. Calculate and print the sum of all the even numbers in the list.

GROUP – B

(SQL COMMANDS :: 4 MARKS)

3. Create the table 'Student' with the following structure 4

FIELD NAMES	DATA TYPES	SIZE	CONSTRAINTS
St_id	Char	(3)	Primary Key, not null.
St_name	Varchar	30	
Class	Char	1	
Section	Char	1	

Insert at least four records and display the columns St_name and section.

(2)

Or

Create the table Teacher using appropriate data types size and constraints using SQL commands.

4

Tid	T NAME	Dept.	Salary
104	Amanda	Maths	32,000
105	Samir	Scince	35,000
106	Malcom	Geography	40,000
107	Tony	Maths	40,000

Display the table in ascending order of names.

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SET-III (Three)

(Answer question 1 and 2 from Group-A and One question from Group-B)

GROUP – A

(PYTHON PROGRAMMING :: 8 MARKS)

1. Write a Python program to print the following pattern. 4

```
1
2 6
3 7 10
4 8 11 13
5 9 12 14 15
```

OR

Write a program to display a menu for calculating area of a circle or calculating perimeter of a circle by giving the radius as input. 4

2. Write a program to obtain principal amount, rate of interest and time from the user and calculate simple interest. 4

OR

Create a dictionary whose keys are the month names and values are the number of days in the corresponding months. Display the dictionary 4

(2)

GROUP – B
(SQL COMMANDS :: 4 MARKS)

3. Create the table student info in the given structure.

4

Column Name	Data Type	Size
St_id	Number	3
St_name	Varchar	30
Address	Varchar	30
Date of Birth	Date	
Phone No.	Number	10

Insert at least 4 records and display the records in ascending order of student name.

OR

Create the table Employee in the structure given below :

4

Column Name	Datatype	Size	Constraint
Emp id	Number	3	Primary Key
Emp name	Varchar	30	
Department	Varchar	10	
Salary	Number	(5, 2)	

Insert 4 records and display the total salary of all the employees.

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COMPUTER SCIENCE

Full Marks : 30

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SET-IV (Four)

(Answer question 1 and 2 from Group-A and One question from Group-B)

GROUP – A

(PYTHON PROGRAMMING :: 8 MARKS)

1. Write a program to calculate the factorial of a given number. 4

OR

Write a program to generate even numbers upto a given range and find their sum. 4

2. Write a program to generate the following pattern. 4

```
* * * * *
*           *
*         *
*       *
*     *
*   *
* *
*
```

OR

Write a program to display the fibonacci series upto 'n' number of terms. 4

(2)

GROUP – B
(SQL COMMANDS :: 4 MARKS)

3. Create a table having the following fields, using appropriate data types and constraints

4

Patient_id, Patient Name, Department, Doctor, Phone No.

Insert at least 4 records and display all records.

OR

Create the following table "Employee" using appropriate data types, sizes and constraint for the table:

4

Emp. No.	Emp. Name	Designation	Date of Joining	Salary
1450	Mira	Manager	1999-12-18	38,400
1451	Kuldeep	Sales Manager	2000-07-04	22,500
1452	James	Salesman	2002-11-07	20,000
1453	Sanjay	Clerk	2001-06-10	25,000
1454	Andrew	Clerk	1996-12-01	28,000

Print the maximum salary and average salary of employees.

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SET-V (Five)

(Answer question 1 and 2 from Group-A and One question from Group-B)

GROUP – A

(PYTHON PROGRAMMING :: 8 MARKS)

1. Write a Python program to calculate the volume and surface area of a sphere without using math module constant

4

$$\text{volume} = \frac{4}{3}\pi r^3, \text{Area} = 4\pi r^2$$

OR

Write a Python program to print the following pattern.

4

1

2 2

3 3 3

4 4 4 4

5 5 5 5 5

2. Write a program to check if a given string is a palindrome or not.

4

OR

Write a program to create a list of numbers and print them in reverse order.

4

(2)

GROUP – B
(SQL COMMANDS :: 4 MARKS)

3. Create the following table using appropriate data types, sizes and constraints with the following Field names :

4

Pat_id, Name, Gender, Address, Phone, Doctor Code.

Insert at least 5 rows of data and list all patient details who are treated by the same doctor.

OR

Create the following table

4

Sports Coaching :

St_id	Name	Sports	Fees
42	Sujit	Cricket	1000
80	Ronald	Football	2000
99	Jyoti	Badminton	1000
82	Manoj	Badminton	1000
104	John	Football	2000

Display the records in ascending order of student names and count and display the number of students attending Football coaching.

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SET-VI (Six)

(Answer question 1 and 2 from Group-A and One question from Group-B)

GROUP – A

(PYTHON PROGRAMMING :: 8 MARKS)

1. Write a Python program to display the multiplication table of a given number. 4

OR

Write a program to input the principal amount, rate of interest and time from the user and calculate the simple Interest. 4

2. Given a list of integers. Write a Python code to calculate and display the sum of all odd numbers in the list. 4

OR

Write a program to find the sum of the series : 4

$$1^2 + 3^2 + 5^2 + \dots + n^2 \text{ (input } n\text{).}$$

(2)

GROUP – B
(SQL COMMANDS :: 4 MARKS)

3. Create the table "teacher"

4

T No	T Name	Address	Salary	Department
T01	Samuel	G-35 Saliman Bagh	22,000	Computer
T02	John	Sec-5 Dwarka	21,000	History
T03	Joby	East Patel Nagar	18,900	Computer
T04	Pretum	Ashok Vihar	24,000	Maths
T05	Kaber	Ramesh Nagar	10,000	Computer

– Display the details of teachers belonging to the computer department

– List the teacher table in ascending order of teacher name.

OR

Create the table Books using appropriate Data types, size and constraints.

4

Book No.	Book Title	Author	Publisher	Price
1001	Waterfire Saga	Jennifer Donnelly	Disney Pub	1260
1231	Here and Now	Ann Brashares	Delacorte Books	1400
1048	Jane, the Fox and Me	Fanny Britt	Groundwood	1700
1498	Sing Sweet Nightingale	Erica Cameron	Spencer Hills	700

Display all records of the table.

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Full Marks : 30

Time : 4 hours

SET-VII (Seven)

(Answer question 1 and 2 from Group-A and One question from Group-B)

GROUP – A

(PYTHON PROGRAMMING :: 8 MARKS)

1. Write a Python program to find the area of a triangle using 4

$$s = \frac{a+b+c}{2} \quad \text{Area} = \sqrt{s(s-a)(s-b)(s-c)}$$

OR

Write a Python program that accepts marks in 6 subjects and gives out the average marks. 4

2. Write a Python program to print the following pattern : 4

#

#

#

#

#

OR

Write a program to generate first 10 terms of a fibonacci series. 4

(2)

GROUP – B

(SQL COMMANDS :: 4 MARKS)

1. Create the following table "Scores"

4

Name	Age	Score	Grade
Riya	16	70	B
Suman	15	85	A
Sangeeta	16	90	A+
Priyal	17	73	B
Neraj	16	93	A+
Sohail	15	64	C

– Display the table and sort the display in descending order of score values

–List students details who obtained a score of 80 and above.

OR

Create the following table with the given structure.

4

Product Table:

Field Names	Datatypes	Size	Constraint
P_Code	int	3	Primary Key, Not null
P_name	Varchar	20	Not null
Supplier	Varchar	20	
Quantity	int	3	Check (quantity>20).
Price	Number	(6,2)	
City	Varchar	15	

Insert about 4 rows of data and print all rows.

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