

HS/XI/A.Sc.Com./IP/23**2023****INFORMATICS PRACTICES****(Theory)***Full Marks : 70**Time : 3 hours**The figures in the margin indicate full marks for the questions**General Instructions :*

- (i) Write all the answers in the Answer Script.
- (ii) Attempt all the Questions.

1. Choose the correct answer from the following : $1 \times 6 = 6$

- (i) A computer memory measurements of 3 kb is = _____ bytes
 - (a) 3000
 - (b) 3024
 - (c) 3072
 - (d) None of these.

- (ii) If $a = 4$, $b = 3$, and $c = 2$, what is the output of the given code

```
a += b + c
```

```
print (a)
```

- (a) 8
- (b) 9
- (c) 10
- (d) 11.

- (iii) The _____ method adds an item to the end of the list

- (a) insert () method
- (b) append () method
- (c) Join ()
- (d) extend () method.

- (iv) Which of the following statement is not true for DBMS?

- (a) It is a collection of interrelated data
- (b) It provides data management
- (c) It consist a set of rules that define valid data
- (d) It stores all the data in one small file.

(3)

- (v) Which of the following is not SQL data types?
- (a) BLOB
 - (b) DECIMAL
 - (c) STRING
 - (d) DATE.
- (vi) Which of the following is not the application of Machine Learning?
- (a) Facial Recognition
 - (b) Surveillance System
 - (c) “Self Driving” Vehicles
 - (d) Drones.

2. Answer the following questions : 1 × 6 = 6

- (i) Define operating system.
- (ii) What is the purpose of primary key in DBMS?
- (iii) Evaluate the expression $6.2 // 2$
- (iv) Define the term “database constraint”.
- (v) Name an AI, who has been awarded as citizenship of Saudi Arabia
- (vi) What do you mean by virtual reality?

(4)

3. Answer the following questions 2 × 6 = 12

- (i) Define Cache Memory and ‘Cache hit’.
- (ii) Give the output of the following code:
$$a, b = 15, 3$$
$$d = a \% b$$
$$\text{print}(d)$$
- (iii) What is data manipulation language (DML)? Name any two DML commands.
- (iv) Explain SELECT command with Syntax.
- (v) Write SQL statement to change the existing column name ‘ENAME’ of the table ‘Employee’ to EMP_NAME.
- (vi) Differentiate between public and private cloud.

4. Answer the following in *three* or *four* sentences (any two) : 3 × 2 = 6

- (i) What is system utilities software? Name four commonly used utility software.
- (ii) What is application software? Discuss the two categories of Application software.
- (iii) Differentiate between interpreter and compiler.

(5)

5. Answer the following questions (*any four*) : $3 \times 4 = 12$

(i) What is Relational Operator in Python? How strings are compared using relational operator. Give example.

(ii) What will be the output for the following code:

```
x = 10
x = x + 10
x = x - 5
print (x)
x, y = x - 2, 22
print (x, y)
```

(iii) Write a Python program to check a given number whether it is positive, negative or zero.

(iv) What will be the output of the following code?

```
List1 = [ 23,11, 3, 14, 9 ]
strlist = sorted (List 1)
print (strlist [-1])
print (strlist [-2])
```

(v) What are the built-in core data types of Python?

(6)

6. Answer the following questions (*any four*) : $3 \times 4 = 12$

(a) Write SQL command for the following table (student) as *directed* below:

Table : Student

St_No	Class	Name	Activity-1	Grade-1	Activity-2	Grade-2
101	7	Annu	Cricket	A	Gardening	B
102	9	June	Tennis	C	Dancing	B
103	6	Bhabok	Swimming	C	Dancing	C
104	8	Andrew	Cricket	B	Cooking	A
105	8	Juban	Football	A	Singing	C
106	9	Kerlang	Tennis	A	Gardening	B
107	10	John	Football	B	Cooking	A

(i) Display the names of students who are getting grade 'C' in either Activity-1 or Activity-2.

(ii) Display all the students names starts with a letter 'A'.

(iii) Select all the student number "St_No", scored grade 'A' in grade-1.

(b) Create the following table

Sales

Item_No	Item_Name	Quantity	Rate	Total

(7)

(i) Write an SQL queries to create the given table 'sales', with constraints specified below:

(a) Unique constraint : Item_No

(b) Primary constraint : Item_Name, Rate

(ii) Insert two records in to the table.

(c) What are the limitations of file system that can be overcome by a relational DBMS?

(d) Differentiate between the following SQL commands:

(i) ALTER and UPDATE

(ii) DELETE and DROP.

(e) What is a constraint? What are the different types of constraints?

7. Answer the following questions: $4 \times 2 = 8$

(a) Write a Python program to find the largest among three numbers entered through Key board during run-time. 4

OR

Explain the following list methods: 4

(i) remove ()

(ii) append ()

(iii) extend ()

(iv) pop ().

(8)

(b) What do you mean by looping control in a program? Write a Python program to find the multiplication table for a given number. 4

OR

Write a Python program to find the sum of all even natural number and all odd natural numbers separately within a given range. 4

8. Answer the following questions: $4 \times 2 = 8$

(a) Briefly explain the different categories of commands available in SQL. 4

OR

Write the SQL statements for the following: 4

(i) List the details of those employees who have four letter name in EMPLOYEE table.

(ii) List the details of all employees whose annual salary is between 25,000-40,000.

(iii) To add a column 'mobile_no' with data type bigint in Employee table.

(iv) Delete the records of those employee whose address is 'Shillong' and age is greater than 60.

(9)

- (b) What is data inconsistency? How is it related to data redundancy? Explain with examples. 4

OR

Define the terms:

- (i) Relation
- (ii) Attribute
- (iii) Degree
- (iv) Cardinality.

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