

Self Assessment Paper

General Instructions

- (i) This question paper contains two parts A and B. Each part is compulsory.
- (ii) Both Part A and Part B have choices.
- (iii) Part A has 2 sections :
 - (a) Section - I is short answer questions, to be answered in one word or one line.
 - (b) Section - II has two case studies based questions. Each case study has 4 case-based sub parts.
An examinee is to attempt any 4 part out of the 5 subparts.
- (iv) Part B is Descriptive.
- (v) Part B has 3 sections.
 - (a) Section-I is short answer questions of 2 marks each in which two questions have internal options.
 - (b) Section-II is long answer question of 3 marks each in which two questions have internal options.
 - (c) Section-II is very long answer question of 3 marks each in which one questions has internal options.

Part-A (Section-I)

Attempt any 15 questions from questions 1 to 21

1. System is the resource manager of the Computer System. 1
2. Find the secondary memory from the following. 1
ROM, DVD, Magnetic Tape, RAM, Cache, Memory Card 1
3. Interpreter is a type of software 1
 - (a) Application software (b) System software
 - (c) Device driver (d) Translator
4. Read Only Memory is Memory. 1
 - (a) Volatile (b) Non-volatile
 - (c) Secondary (d) Registers
5. Python is an open source programming language 1
 - (a) Yes (b) No
6. Predict the Output 1
a = 2
b = "String"* a
print (b)
7. Find the error 1
a=5
c = Ram * (a+1)
print(c)

- (a) Missing semicolon (b) Invalid operator
(c) Undefined variables (d) Invalid identifiers
8. Those operators which work on two operands are known as 1
9. Write the output from the following code.
- ```
x = 'abhi'
y = 'Zoom'
if (x > y) :
 print (x + y)
else :
 print (y*2)
```
- (a) ZoomZoom (b) abhiZoom  
(c) abhiabhi (d) Zoomabhi 1
10. Which statement is not true regarding dictionary?  
(a) Dictionary keys are Immutable (b) Dictionary is called associative array.  
(c) Dictionary values cannot be changed (d) Dictionary is an unordered collection. 1
11. Which property of a relation is used to represent number of rows?  
(a) Key (b) Attribute  
(c) Degree (d) Cardinality 1
12. The primary key of a relation can be said to be a ..... super key. 1
13. The system hides certain details of how data is stored, created and maintained. This statement belongs to  
(a) Data Abstraction (b) Data Updating  
(c) Data Storing (d) Data Concept 1
14. In a ..... Model data and relationship are represented by a collection of tables. 1
15. Rows of relations are generally termed as tuples.  
(a) True (b) False 1
16. The full of DML is.....  
(a) Distributed Meta Language (b) Data Manipulation Language  
(c) Definition Maintenance Language (d) None of these 1
17. Which operator is used to match any value in the list of values in SQL? 1
18. The query to select all details of an employee from Table Employee, whose age is from 25 to 35 using SQL logical operators. 1
19. Robots that resemble humans are known as ..... 1
20. Which is not the example of Robotics?  
(a) Sophia (b) Drone  
(c) Media player (d) Welding Robot 1
21. The term artificial intelligence was coined in the years ..... 1

### (Section-II)

Both the case study based questions (22 & 23) are compulsory. Attempt any four sub parts from each question. Each sub question carries 1 mark.

22. Consider the following dictionary Opposite:

```
opposite={"Good": "Bad", "White": "Black", "Up": "Down", "Right": "Wrong"}
```

- (a) To print the opposite of 'Black' the code should be:  
(i) print (opposite.get("Black")) (ii) print(opposite["Black"])  
(iii) print(opposite[2][1]) (iv) None of these 1
- (b) print (opposite.keys()) will print  
(i) dict\_keys(['Good', 'White', 'Up', 'Right'])  
(ii) dict\_values(['Bad', 'Black', 'Down', 'Wrong'])  
(iii) Error  
(iv) dict\_keys(1,2,3,4) 1

(c) print (len (opposite)) will print

(i) 8

(ii) 4

(iii) 33

(iv) 10

1

(d) print ("Wrong" in opposite), the output will be

(i) True

(ii) False

(iii) Yes

(iv) No

1

(e) The output of the segment will be

del opposite ["Good"]

print opposite

(i) {'Good': Null, 'White': 'Black', 'Up': 'Down', 'Right': 'Wrong'}

(ii) {Null: 'Bad', 'White': 'Black', 'Up': 'Down', 'Right': 'Wrong'}

(iii) {'White': 'Black', 'Up': 'Down', 'Right': 'Wrong'}

(iv) wrong statement

1

23. Write SQL queries for the questions that follow based on table Student where Stu\_ID is primary key.

| Stu_ID | Stu_Name | Subject     | Marks (%) | Address             |
|--------|----------|-------------|-----------|---------------------|
| 101    | Rahul    | Mathematics | 80        | Jain Nagar, Meerut  |
| 102    | Neha     | Science     | 85        | LalKurti, Meerut    |
| 103    | Vivek    | Mathematics | 90        | Sastri Nagar, Delhi |
| 104    | Vipul    | Commerce    | 82        | Bagphat, Meerut     |
| 105    | Priyanka | Science     | 91        | Modipuram, Delhi    |
| 106    | Ruchi    | Commerce    | 75        | Laxmi Nagar, Delhi  |

(a) SELECT Stu\_Name, Subject, Marks FROM Student ORDER BY Stu\_Name ASC;

(i) Will display student name, subject and their marks in increasing order

(ii) Will display student name, subject and their marks in decreasing order

(iii) Wrong command

(iv) None

1

(b) To display the details of those students whose name is started from 'V'.

(i) SELECT \* FROM Student WHERE Stu\_Name LIKE 'V%';

(ii) SELECT Stu\_ID, Stu\_Name, Subject, Marks, Address FROM Student WHERE Stu\_Name LIKE 'V%';

(iii) Both i and ii.

(iv) SELECT \* FROM Student WHERE Stu\_Name IN 'V%';

1

(c) To display student name, marks, address of those students whose marks greater than 75 but less than 90.

(i) SELECT Stu\_Name, Marks, Address FROM Student WHERE Marks > 75 and Marks < 90;

(ii) SELECT Stu\_Name, Marks, Address FROM Student WHERE Marks greater than 75 and less than 90;

(iii) Both i and ii

(iv) None of these

1

(d) SELECT \* FROM Student WHERE Subject NOT IN ('Commerce');

(i) will display the details of those students who opted the subject Commerce.

(ii) will display the details of those students who opted the subject other than Commerce.

(iii) Invalid Query

(iv) None of these

1

(e) INSET INTO Student VALUES (103, "Ramesh", "Science", 60, "Indira Nagar, Lucknow");

(i) Insert the values into new row;

(ii) Update the entries of Stu\_ID 103;

- (iii) Error will be generated
- (iv) None of these

### Part B

#### (Section-I)

24. What do you mean by computer? Write names of five input devices. 2
25. Differentiate between Dynamic RAM and Static RAM. 2

OR

Write a short note on Python language?

26. Predict the output of the following code

```
x = 2
y = 5
z = x + 2**3
```

```
x = y * 2
```

```
y = x + z
```

```
print ("Python Program")
```

```
print ("Value of x : ", x)
```

```
print ("Value of y : ", y)
```

```
print ("Value of z : ", z)
```

2

27. What is the error in following Python program with one statement?

```
print ("My favourite subject is ", subject). Rectify this code.
```

2

28. Why does the expression  $(2 + 3) * 4$  result in the value 20 and not the value 14? 2

29. Define the term 'Candidate Key' and 'Alternate Key'. 2

OR

What do you mean by Smart Cities?

30. What is the use of View in SQL? 2

31. What is the difference between DDL and DML? 2

32. What is the use of DISTINCT statement in SQL? 2

33. Define 4 characteristics of Big data 2

#### (Section-II)

34. What do you mean by Error? What is the difference between syntax error and logical error? 3

35. Write the following mathematical equation in Python expression

(a)  $3x^3 + 4x^2 + 5x + 7$

(b)  $y = ((a+b+c))/3$

(c)  $a = 1/2(a + b) \times h$

(d)  $x = 4x^3 + 3x + 7$

(e)  $x = (a+b \times 2)/(a-b/2)$

3

OR

What do you mean by List? How can you access the elements of a List?

36. Define three models of DBMS. 3

OR

Define LIKE operator of SQL with an example.

37. Write a program to calculate the average and total of 5 numbers in a list. 3

#### (Section-III)

38. Define system software and application software in detail. 5

39. Write a program to read a list of  $n$  integers (positive as well as negative). Create two new lists, one having all positive number and the other having all negative numbers from the given list. Print all three lists. 5

OR

Write SQL query for the questions that follow based on given table Worker

| Worker_ID | Name    | Salary | Joining_Date | Department |
|-----------|---------|--------|--------------|------------|
| 001       | Monika  | 10000  | 2014-02-20   | HR         |
| 002       | Shiksha | 8000   | 2014-06-11   | Admin      |
| 003       | Arun    | 30000  | 2014-02-20   | HR         |
| 004       | Nishant | 15000  | 2014-02-20   | Admin      |
| 005       | Vivek   | 15000  | 2014-06-11   | Admin      |
| 006       | Santosh | 20000  | 2014-01-20   | Accountant |
| 007       | Naresh  | 7500   | 2014-04-11   | Accountant |

- (a) To display Name and joining date of workers whose salary is greater than 10000.  
 (b) To display details of those workers whose name started with 'N'.  
 (c) To display all worker details from worker table order by Name ascending.  
 (d) To display Name and Salary of those workers who works in 'HR' or 'Admin' Department.  
 (e) To display the total number of workers who work in Accountant department.
40. Consider the table ABC given bellow, write commands in SQL for (a) to (e)

| PID | Name     | Gender | City          | Pincode | Basic_Salary |
|-----|----------|--------|---------------|---------|--------------|
| 1   | Geet     | F      | Udhamwara     | 132141  | 50000        |
| 2   | Surinder | M      | Kupwara Nagar | 193421  | 75000        |
| 3   | Peter    | M      | Bhawani       | 434341  | 45000        |
| 4   | Thomas   | M      | Ahmed Nagar   | 390021  | 50000        |
| 5   | Garima   | F      | New Delhi     | 182141  | 35000        |
| 6   | Simi     | F      | Udhamwara     | 110021  | 42000        |

- (a) Display the number of Females from ABC table.  
 (b) Display the PID, City and Pincode of ABC in descending order of Names.  
 (c) Display the name and city of all the males getting Basic Salary above 45000.  
 (d) Display Name and Basic Salary of all the persons whose Name start with 'S'.  
 (e) Display the details of those persons who live in New Delhi and are earning more than 30000. 5

□□□

Finished Solving the Paper ?  
 Time to evaluate yourself !  
<https://qrqo.page.link/DKKfn>

OR

SCAN THE CODE



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