

### Group A

(1×9=9)

#### Multiple choice questions.

- In SQL, which operator performs pattern matching?
  - BETWEEN operator
  - LIKE operator
  - EXISTS Operator
  - None of the above
- What SQL command can be used to add columns to a table?
  - ALTER TABLE TableName ADD COLUMN ColumnName
  - ALTER TABLE TableName ADD ColumnName
  - MODIFY TABLE TableName ADD COLUMN ColumnName
  - MODIFY TABLE TableName ADD ColumnName
- What does the following SQL query do:  
SELECT \* FROM books WHERE titles LIKE 'A%z'?
  - It selects all books with titles starting with "A" and ending with "z".
  - It selects all books with titles containing "A%" followed by "z".
  - It selects all books with titles starting with "A%" and ending with "z".
  - It selects all books with titles starting with "A" followed by "z".
- What will be the output of the following code snippet?  
obj1 = {first: 20, second: 30, first: 50};  
console.log(obj1);
  - {first:20, second:30};
  - {first:50, second:20};
  - {first:20, second:30, first:50};
  - {second:30,first:50};
- The form of interference in which signals in one cable induce electromagnetic interference in an adjacent cable is....
  - Distortion
  - Crosstalk
  - Jitter
  - Noise
- How long is the IPv4 address?
  - 4-bit
  - 8-bit
  - 16-bit
  - 32-bit

- I should use ..... Communication mode for my Wi-Fi.

- Simplex
- Half-Duplex
- Full Duplex
- None

- What is the value of res?

```
var n = 42;
```

```
var res= n % 2 === 0;
```

- true
- false
- undefined
- none of the above

- What is the output of the following JS code?

```
var sum = 0;
```

```
for (var i = 1; i <= 100; i++) {
```

```
    if (i % 7 === 0 && i % 9 !== 0) {
```

```
        sum += i;
```

```
    }
```

```
}
```

- 63
- 385
- 735
- 672

### Group B

#### Give short answer to the following questions.

(5×5=25)

- Explain 1NF and 2NF with examples. (5)
- Explain Distributed Database System and outline its advantages. (5)
- Differentiate between Internet and Intranet. (5)
- Explain Peer-to-Peer Network Architecture and outline its disadvantages. (5)
- Write JavaScript code to print the following series:  
1 20 300 4000 ... up to the nth term using function. (5)

### Group C

#### Give short answer to the following questions.

(8×2=16)

- Explain the concept of a computer network. Provide detailed explanations for Local Area Networks (LANs), Wide Area Networks (WANs), and Metropolitan Area Networks (MANs), including advantages and disadvantages associated with each. (1+7)
- What is the significance of password validation in a registration form? Write a JavaScript code snippet that illustrates the enforcement of two password fields (password and confirm password), containing matching entries, while also ensuring that they each consist of a minimum of 6 characters? (2+6)