

Solutions with Marking Scheme, CO and Bloom's Level

Prepared based on the uploaded Essentials of IT Internal Assessment Test 2 question paper.

1(a) Explain the Internet Architecture with a Block Diagram. CO2 L2

Marks: 5

Internet architecture refers to the structure through which devices communicate over the internet using TCP/IP protocols.

Block Diagram:

User Device → ISP/Modem → Router → Internet → Web Server

Explanation:

1. User Device – Sends and receives data.
2. ISP – Provides internet connectivity.
3. Router – Routes data packets.
4. Internet Backbone – Global TCP/IP network.
5. Web Server – Stores websites and services.

Marking Scheme:

- Definition – 1 Mark
- Block Diagram – 2 Marks
- Explanation – 2 Marks

1(b) Summarize the best practices to be followed to keep passwords safe and secure as part of good cyber hygiene.

CO5 L2

Marks: 5

1. Use strong passwords.
2. Avoid personal information in passwords.
3. Change passwords regularly.
4. Enable two-factor authentication.
5. Do not share passwords.
6. Use different passwords for different accounts.

Marking Scheme:

- Any five valid points – 5 Marks

2. Explain how ownership rules help prevent the misuse of digital content by describing five ownership rules.

CO5 L2

Marks: 10

Ownership rules protect digital content from misuse and ensure creators receive proper rights.

Five Ownership Rules:

1. Copyright Protection
2. Licensing Agreements
3. Plagiarism Prevention
4. Fair Use Policy
5. Trademark Protection

Importance:

- Protects intellectual property
- Encourages creativity
- Prevents piracy

Marking Scheme:

- Introduction – 2 Marks
- Five rules – 5 Marks
- Importance – 3 Marks

3. Explain the four stages of the traditional software development life cycle.

: CO4 L2

Marks: 10

SDLC is a systematic process used for software development.

Four Stages:

1. Requirement Analysis
2. Design
3. Implementation (Coding)
4. Testing and Maintenance

Marking Scheme:

- Definition – 2 Marks
- Four stages – 6 Marks
- Diagram/Conclusion – 2 Marks

4. Explain Three relational database operations. Develop a query to insert the record into the table Employee (Id, Name, Gender, Age, Salary).

CO4 L3

Marks: 10

Three Relational Database Operations:

1. SELECT – Retrieves data from a table.
2. INSERT – Adds new records into a table.
3. DELETE – Removes records from a table.

SQL Query:

```
INSERT INTO Employee (Id, Name, Gender, Age, Salary)
VALUES (101, 'Rahul', 'Male', 24, 50000);
```

Marking Scheme:

- Three operations explained – 6 Marks
- SQL query syntax – 3 Marks
- Proper formatting – 1 Mark

5. Explain the rendering process in computer graphics. Discuss different types of rendering.

C03 L2

Marks: 10

Rendering is the process of converting a 3D model into a 2D image.

Rendering Process:

1. Modeling
2. Lighting
3. Texturing
4. Shading
5. Final Image Generation

Types of Rendering:

1. Real-Time Rendering
2. Offline Rendering
3. Rasterization
4. Ray Tracing

Marking Scheme:

- Definition – 2 Marks
- Rendering process – 4 Marks
- Types of rendering – 4 Marks

6. Write the complete basic HTML structure for a single webpage, including the correct declaration and main sections.

C03 L3

Marks: 10

```
<!DOCTYPE html>
<html>
<head>
  <title>My Webpage</title>
</head>

<body>
  <h1>Welcome to HTML</h1>
  <p>This is a sample webpage.</p>
</body>
</html>
```

Explanation:

- <!DOCTYPE html> defines HTML5 document.
- <head> contains title and metadata.
- <body> contains visible content.

Marking Scheme:

- DOCTYPE declaration – 2 Marks
- Head section – 2 Marks
- Body section – 3 Marks
- Proper syntax and explanation – 3 Marks

7(a) Compare 2D graphics, image processing, and 3D graphics, highlighting their key differences.

C03 L2

Marks: 5

2D Graphics:

- Two-dimensional drawings and animations.

Image Processing:

- Enhancement and manipulation of images.

3D Graphics:

- Three-dimensional objects used in gaming and simulations.

Marking Scheme:

- Comparison points – 3 Marks
- Key differences explained – 2 Marks

7(b) Explain the purpose of the Software Requirements Specification (SRS) document in software development.

C04 L2

Marks: 5

SRS (Software Requirements Specification) is a document that defines all software requirements before development.

Purpose:

1. Defines functional and non-functional requirements.
2. Acts as communication between client and developer.
3. Helps in testing and validation.
4. Reduces development errors.
5. Improves project planning.

Marking Scheme:

- Definition – 1 Mark
- Purpose points – 4 Marks