

SRM VALLIAMMAI ENGINEERING COLLEGE

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK



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 Department of Information Technology
Question Bank



SUBJECT : IT3362 INFORMATION TECHNOLOGY ESSENTIALS

SEM / YEAR : III / II

UNIT I - WEB ESSENTIALS				
Creating a Website – Working principle of a Website – Browser fundamentals – Authoring tools – Types of servers: Application Server – Web Server – Database Server				
PART-A				
Q.No	Question	BTL	Competence	
1	What is a website?	BTL1	Remembering	
2	Define a web browser.	BTL1	Remembering	
3	What is the main function of a web server?	BTL1	Remembering	
4	Define HTML.	BTL1	Remembering	
5	What is an application server?	BTL1	Remembering	
6	Mention two examples of authoring tools.	BTL1	Remembering	
7	What does a database server do?	BTL1	Remembering	
8	Name any two types of servers used in web development.	BTL1	Remembering	
9	What is HTTP?	BTL1	Remembering	
10	What do you mean by browser cache?	BTL1	Remembering	
11	What is meant by a domain name?	BTL1	Remembering	
12	Define web hosting.	BTL1	Remembering	
13	What happens when a user opens a website in a browser?	BTL2	Understanding	
14	How does a browser display a web page?	BTL2	Understanding	
15	What is the use of HTML in a website?	BTL2	Understanding	
16	Why is CSS important in web design?	BTL2	Understanding	
17	How is a static website different from a dynamic one?	BTL2	Understanding	
18	What is the role of DNS in web browsing?	BTL2	Understanding	
19	How does a web server respond to a browser?	BTL2	Understanding	
20	What does an application server do in a website?	BTL2	Understanding	
21	What is the function of a database server?	BTL2	Understanding	
22	Why do we use authoring tools?	BTL2	Understanding	
23	How is a URL useful in browsing?	BTL2	Understanding	
24	What is the use of client-side scripting?	BTL2	Understanding	
PART-B				
1	(i) Explain how a website works. (ii) Describe the role of web servers and browsers in website delivery.	(8) (8)	BTL3	Applying

2	(i) Apply your knowledge to describe how a user accesses a webpage through a browser. (ii) Include DNS and HTTP concepts.	(8) (8)	BTL3	Applying
3	Describe how HTML and CSS are used together to design a web page. Give example code.	(16)	BTL3	Applying
4	Illustrate the use of application servers and database servers in e-commerce websites with suitable scenarios.	(16)	BTL3	Applying
5	Discuss the step-by-step process involved in creating and hosting a basic website.	(16)	BTL3	Applying
6	(i) Describe the role of authoring tools in creating websites. (ii) Illustrate their advantages using tools like Adobe Dreamweaver or WordPress.	(8) (8)	BTL3	Applying
7	Compare different types of servers involved in web development. Apply real-world examples.	(16)	BTL3	Applying
8	Design a basic website structure with home, about, and contact pages. Explain how browser renders them.	(16)	BTL3	Applying
9	Explain in detail about HTTP Protocol.	(16)	BTL4	Analyzing
10	Analyze the architecture of a web-based system including client, server, and database layers.	(16)	BTL4	Analyzing
11	(i) Compare the functionalities of web server and application server. (ii) Discuss suitable real-time use cases for each type of server.	(8) (8)	BTL4	Analyzing
12	Analyze how browser caching and cookies affect website performance and user experience.	(16)	BTL4	Analyzing
13	Break down the steps taken by a browser to display a webpage starting from entering the URL.	(16)	BTL4	Analyzing
14	Examine the differences in performance when using static vs dynamic web pages.	(16)	BTL4	Analyzing
15	Analyze the benefits and limitations of popular authoring tools like Adobe Dreamweaver and WordPress.	(16)	BTL4	Analyzing
16	(i) Compare HTTP and HTTPS protocols with a focus on data security. (ii) Explain the role of SSL/TLS in ensuring secure communication.	(8) (8)	BTL4	Analyzing
17	Identify the security challenges in using web and database servers in websites.	(16)	BTL4	Analyzing

UNIT II - SCRIPTING ESSENTIALS AND PHP WITH MYSQL

Need for Scripting languages – Types of scripting languages – Client side scripting – Server side scripting – Embedding PHP in HTML – Understanding identifiers – Using Operators – Making Decisions with conditionals – Arrays – Functions – Object oriented PHP- Working with MySQL Databases– Accessing MySQL Database with PHP.

PART-A

Q.No	Question	BTL	Competence
1	Define scripting language.	BTL1	Remembering
2	List two client-side scripting languages.	BTL1	Remembering
3	What is PHP?	BTL1	Remembering
4	Write the syntax to embed PHP in HTML.	BTL1	Remembering
5	What are identifiers in PHP?	BTL1	Remembering
6	List any two types of PHP operators.	BTL1	Remembering
7	Define a conditional statement.	BTL1	Remembering
8	What is an array in PHP?	BTL1	Remembering
9	Define a function in PHP.	BTL1	Remembering
10	What is a class in PHP?	BTL1	Remembering
11	Expand MySQL.	BTL1	Remembering
12	Write the syntax to connect PHP to a MySQL database.	BTL1	Remembering
13	What is the use of scripting languages in web development?	BTL2	Understanding
14	What is the difference between client-side and server-side scripting?	BTL2	Understanding
15	How does PHP run on a server?	BTL2	Understanding
16	What is the role of PHP in HTML?	BTL2	Understanding
17	What is the purpose of identifiers in PHP?	BTL2	Understanding
18	How are arithmetic operators used in PHP?	BTL2	Understanding
19	What is the role of if and else in PHP?	BTL2	Understanding
20	What is an associative array in PHP?	BTL2	Understanding
21	Why are functions used in PHP?	BTL2	Understanding
22	What are classes used for in PHP?	BTL2	Understanding
23	Why is MySQL used with PHP?	BTL2	Understanding
24	How does PHP connect to MySQL?	BTL2	Understanding

PART-B

1	Develop a PHP form handler that displays a welcome message after login.	(16)	BTL3	Applying
2	(i) Design an HTML structure for a simple webpage layout.	(8)	BTL3	Applying
	(ii) Use PHP code to dynamically display the current date and time on the page.	(8)		
3	(i) Use arithmetic operators in PHP to calculate the total and average of marks.	(8)	BTL3	Applying
	(ii) Apply comparison operators to determine and display the corresponding grade based on average.	(8)		
4	Demonstrate the use of indexed, associative, and multidimensional arrays in PHP.	(16)	BTL3	Applying

5	Use conditional statements in PHP to check voting eligibility based on age.	(16)	BTL3	Applying
6	Develop a reusable function in PHP to calculate the area of a rectangle.	(16)	BTL3	Applying
7	Construct a PHP class with properties and methods and create an object from it.	(16)	BTL3	Applying
8	Implement a PHP-MySQL script to insert form data into a database and confirm success.	(16)	BTL3	Applying
9	Analyze the role of scripting languages in dynamic website development.	(16)	BTL4	Analyzing
10	(i) Differentiate between client-side and server-side scripting with examples.	(10)	BTL4	Analyzing
	(ii) Analyze their respective advantages and limitations in web development.	(6)		
11	Break down how PHP executes server-side and returns output to a browser.	(16)	BTL4	Analyzing
12	Analyze the use of control structures in PHP for building logic-driven applications.	(16)	BTL4	Analyzing
13	(i) Compare the use of arrays and database queries for storing and retrieving data.	(8)		Analyzing
	(ii) Analyze the performance trade-offs between arrays and MySQL queries in real-time scenarios.	(8)	BTL4	
14	Analyze the benefits of object-oriented PHP in large-scale web applications.	(16)	BTL4	Analyzing
15	Examine how PHP connects and interacts with MySQL using MySQLi or PDO.	(16)	BTL4	Analyzing
16	Analyze common PHP errors when accessing a MySQL database and how to handle them.	(16)	BTL4	Analyzing
17	Evaluate a case where a user form submits data using PHP and stores it securely in a MySQL database.	(16)	BTL4	Analyzing

UNIT III - NETWORKING ESSENTIALS

Fundamental computer network concepts – Types of computer networks – Network layers – TCP/IP model – Wireless Local Area Network – Ethernet – WiFi – Network Routing – Switching – Network components.

PART-A

Q.No	Question	BTL	Competence
1	Define computer network.	BTL1	Remembering
2	List any two types of computer networks.	BTL1	Remembering
3	What is LAN?	BTL1	Remembering
4	Define TCP/IP.	BTL1	Remembering
5	What is a network layer?	BTL1	Remembering
6	Expand WLAN.	BTL1	Remembering
7	What is Ethernet?	BTL1	Remembering

8	Define WiFi.		BTL1	Remembering
9	What is routing?		BTL1	Remembering
10	Define switching.		BTL1	Remembering
11	List any two network components.		BTL1	Remembering
12	What is an IP address?		BTL1	Remembering
13	What is the use of computer networks?		BTL2	Understanding
14	How do LAN and WAN differ?		BTL2	Understanding
15	What is the role of the TCP/IP model in networking?		BTL2	Understanding
16	How does the network layer function in data transfer?		BTL2	Understanding
17	What is the purpose of WLAN in an organization?		BTL2	Understanding
18	How does Ethernet support data transmission?		BTL2	Understanding
19	Why is WiFi commonly used in homes and offices?		BTL2	Understanding
20	What happens during network routing?		BTL2	Understanding
21	How does switching work in a network?		BTL2	Understanding
22	What are the functions of a router?		BTL2	Understanding
23	How does a hub differ from a switch?		BTL2	Understanding
24	Why are protocols important in networking?		BTL2	Understanding
PART-B				
1	(i) Describe the function of each layer in the TCP/IP model. (ii) Explain how a message travels from the sender to the receiver using these layers.	(8) (8)	BTL3	Applying
2	Implement a small office network model using Ethernet and WiFi.	(16)	BTL3	Applying
3	Apply the concept of routing to trace the path of a packet across a network.	(16)	BTL3	Applying
4	Demonstrate the difference between circuit switching and packet switching.	(16)	BTL3	Applying
5	(i) Design a wireless network layout suitable for a smart classroom setup. (ii) Identify the devices and technologies involved in supporting this WLAN environment.	(8) (8)	BTL3	Applying
6	Construct a simple network topology with hubs, switches, and routers.	(16)	BTL3	Applying
7	Use IP addressing to create a subnet plan for a university network.	(16)	BTL3	Applying
8	Demonstrate data flow between two devices using the OSI or TCP/IP model	(16)	BTL3	Applying
9	Analyze the role of each layer in the TCP/IP model during data transmission.	(16)	BTL4	Analyzing

10	Compare the characteristics and use-cases of LAN, WAN, and MAN.	(16)	BTL4	Analyzing
11	Examine the advantages and limitations of Ethernet in a wired network setup.	(16)	BTL4	Analyzing
12	Analyze routing algorithms and their efficiency in large-scale networks.	(16)	BTL4	Analyzing
13	(i) Explain the technological differences between WiFi and WLAN.	(8)	BTL4	Analyzing
	(ii) Compare their performance, speed, and security in real-world use cases.	(8)		
14	(i) Describe the step-by-step process of how packet switching works in a network.	(8)	BTL4	Analyzing
	(ii) Explain the key advantages of using packet switching over traditional methods like circuit switching.	(8)		
15	Analyze the placement and role of switches, routers, and hubs in a network.	(16)	BTL4	Analyzing
16	Compare the use of static and dynamic IP addressing in enterprise networks.	(16)	BTL4	Analyzing
17	Evaluate the performance of wireless vs wired networking in modern organizations.	(16)	BTL4	Analyzing

UNIT IV - MOBILE COMMUNICATION ESSENTIALS

Cell phone working fundamentals – Cell phone frequencies & channels – Digital cell phone components – Generations of cellular networks – Cell phone network technologies / architecture – Voice calls & SMS

PART-A

Q.No	Question	BTL	Competence
1	Define a cell phone.	BTL1	Remembering
2	List any two components of a digital cell phone.	BTL1	Remembering
3	What is a cell in cellular networks?	BTL1	Remembering
4	Define frequency in mobile communication.	BTL1	Remembering
5	What is a communication channel.	BTL1	Remembering
6	List any two cellular network generations.	BTL1	Remembering
7	What is 1G?	BTL1	Remembering
8	Define SMS.	BTL1	Remembering
9	What is a SIM card?	BTL1	Remembering
10	What is base station?	BTL1	Remembering
11	Define roaming.	BTL1	Remembering
12	What is a smartphone?	BTL1	Remembering
13	What is the use of frequencies in cell phones?	BTL2	Understanding
14	How are channels used in mobile networks?	BTL2	Understanding
15	What is the role of a base station in cellular networks?	BTL2	Understanding
16	What is the purpose of SIM in a cell phone?	BTL2	Understanding
17	Why is 4G faster than previous generations?	BTL2	Understanding

18	How does a mobile phone send SMS?	BTL2	Understanding	
19	How does a call connect between two phones?	BTL2	Understanding	
20	What is the role of antenna in mobile phones?	BTL2	Understanding	
21	What happens when a phone moves between two cells?	BTL2	Understanding	
22	Why is 5G important for modern applications?	BTL2	Understanding	
23	What is the use of digital circuits in a cell phone?	BTL2	Understanding	
24	How does mobile data work?	BTL2	Understanding	
PART-B				
1	(i) Explain the concept of cellular structure in mobile communication.	(8)	BTL3	Applying
	(ii) Describe how a city is divided into hexagonal or overlapping cells for efficient coverage.	(8)		
2	Use a diagram to demonstrate frequency reuse in mobile networks.	(16)	BTL3	Applying
3	(i) Create a block diagram showing the components of a digital mobile phone.	(8)	BTL3	Applying
	(ii) Describe the function of each component such as microphone, processor, antenna, and display.	(8)		
4	Develop a layout showing evolution from 1G to 5G with features.	(16)	BTL3	Applying
5	Demonstrate how a voice call is established between two mobile users.	(16)	BTL3	Applying
6	Use SMS architecture to trace the flow of a text message.	(16)	BTL3	Applying
7	(i) Describe the handoff (handover) process when a user moves between cells.	(8)	BTL3	Applying
	(ii) Explain the role of base stations and switching centers in maintaining call continuity.	(8)		
8	(i) Illustrate a GSM network architecture including BTS, BSC, MSC, and HLR.	(8)	BTL3	Applying
	(ii) Explain the function of each component in handling communication and mobility.	(8)		
9	Analyze the key differences between analog and digital mobile phones.	(16)	BTL4	Analyzing
10	Compare the architectures of 3G, 4G, and 5G networks.	(16)	BTL4	Analyzing
11	Examine the process of frequency reuse and its impact on network capacity.	(16)	BTL4	Analyzing
12	Analyze the role of each component in a digital cell phone.	(16)	BTL4	Analyzing
13	(i) Compare the evolution of features like voice, data, and connectivity from 1G to 5G.	(8)	BTL4	Analyzing
	(ii) Analyze the improvements in data speed, latency, and service quality across generations.	(8)		
14	Break down the steps in making a mobile voice call.	(16)	BTL4	Analyzing

15	Analyze the process of SMS transmission and delivery.	(16)	BTL4	Analyzing
16	Compare GSM and CDMA network technologies.	(16)	BTL4	Analyzing
17	Evaluate the performance impact of mobile switching in large networks.	(16)	BTL4	Analyzing

UNIT V - APPLICATION ESSENTIALS AND MODERN INFORMATION RETRIEVAL

Design and development of information systems - Simple database applications – Multimedia applications - Overview effective IRS –File Structures - User Interfaces – Visualization - Searching the Web

PART-A

Q.No	Question	BTL	Competence
1	Define an information system.	BTL1	Remembering
2	List any two types of information systems.	BTL1	Remembering
3	What is a database application?	BTL1	Remembering
4	Define multimedia.	BTL1	Remembering
5	What is a file structure?	BTL1	Remembering
6	List two types of user interfaces.	BTL1	Remembering
7	What is IRS (Information Retrieval System)?	BTL1	Remembering
8	Define visualization in computing.	BTL1	Remembering
9	What is a GUI?	BTL1	Remembering
10	List any two multimedia file formats.	BTL1	Remembering
11	What is metadata?	BTL1	Remembering
12	Define search engine.	BTL1	Remembering
13	What is the use of information systems in organizations?	BTL2	Understanding
14	How does a database help in applications?	BTL2	Understanding
15	What is the purpose of multimedia in software?	BTL2	Understanding
16	What is the role of IRS in searching data?	BTL2	Understanding
17	How does file structure affect data storage?	BTL2	Understanding
18	What is the use of user interfaces in applications?	BTL2	Understanding
19	Why is visualization useful in reports?	BTL2	Understanding
20	How does a user interact with a database system?	BTL2	Understanding
21	What happens when a file is retrieved from storage?	BTL2	Understanding
22	What is the role of web search in modern apps?	BTL2	Understanding
23	Why is structured data important?	BTL2	Understanding
24	How does a graphical interface help users?	BTL2	Understanding

PART-B

1	Develop a simple database application for a student management system.	(16)	BTL3	Applying
2	(i) Explain different types of file structures (sequential, indexed, hashed). (ii) Demonstrate how a file structure can be used to organize and access student or employee data efficiently.	(8) (8)	BTL3	Applying
3	Implement a multimedia application to display audio and video content.	(16)	BTL4	Analyzing
4	Apply IRS features to create a basic search function.	(16)	BTL3	Applying
5	Design a user interface for a library management system.	(16)	BTL3	Applying
6	Demonstrate how visualization tools improve data understanding.	(16)	BTL3	Applying
7	Construct a simple system to search files based on user input.	(16)	BTL3	Applying
8	(i) Design a basic GUI form for data input (e.g., registration or login form). (ii) Implement backend functionality to handle user inputs and actions using GUI elements.	(8) (8)	BTL3	Applying
9	Analyze the components of an information system and their interactions.	(16)	BTL4	Analyzing
10	Compare static and dynamic multimedia content in applications.	(16)	BTL4	Analyzing
11	Examine file structures and their impact on retrieval efficiency.	(16)	BTL4	Analyzing
12	Compare command-line and graphical user interfaces.	(16)	BTL4	Analyzing
13	(i) Describe the steps involved in the data visualization process (data selection, transformation, representation). (ii) Evaluate how effective visualization leads to better decision-making.	(8) (8)	BTL4	Analyzing
14	Break down the working of a basic IRS and its modules.	(16)	BTL4	Analyzing
15	Compare flat file and relational database models.	(16)	BTL4	Analyzing
16	Evaluate different web search techniques and ranking algorithms.	(16)	BTL4	Analyzing
17	Analyze the importance of interface design in user experience.	(16)	BTL4	Analyzing