



SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203.



DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK



**VII SEMESTER
OAD102 OPEN SOURCE SOFTWARE TOOLS**

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SRM VALLIAMMAI ENGINEERING COLLEGE**(An Autonomous Institution)****SRM Nagar, Kattankulathur – 603203.****DEPARTMENT OF INFORMATION TECHNOLOGY****QUESTION BANK****SUBJECT : OAD102 OPEN SOURCE SOFTWARE TOOLS****SEM/ YEAR : VII / IV**

UNIT – I INTRODUCTION			
Introduction to Open sources – Need of Open Sources – Advantages of Open Sources– Application of Open Sources. Open source operating systems: LINUX: Introduction –General Overview – Kernel Mode and user mode – Process – Advanced Concepts –Scheduling – Personalities – Cloning – Signals – Development with Linux.			
PART – A			
Q. No.	Questions	BT Level	Competence
1.	Define Open Source Software.	BTL1	Remembering
2.	What is meant by Open Source philosophy?	BTL1	Remembering
3.	List any two characteristics of Open Source Software.	BTL1	Remembering
4.	Give two examples of Open Source Software.	BTL1	Remembering
5.	What is the need for Open Source Software?	BTL1	Remembering
6.	Mention any two advantages of using Open Source Software.	BTL1	Remembering
7.	Differentiate between Open Source and Closed Source Software.	BTL2	Understanding
8.	List the major applications of Open Source Software.	BTL2	Understanding
9.	Define Open Source Operating System	BTL2	Understanding
10.	What is Linux Operating System?	BTL2	Remembering
11.	List the important features of Linux.	BTL2	Understanding
12.	What is Linux Kernel?	BTL1	Remembering
13.	Differentiate Kernel Mode and User Mode.	BTL2	Understanding
14.	What is a process in Linux?	BTL1	Remembering
15.	Define Process Control Block (PCB).	BTL1	Remembering
16.	What are advanced process concepts in Linux?	BTL1	Remembering
17.	What is process scheduling?	BTL1	Remembering
18.	List the scheduling policies used in Linux	BTL1	Remembering
19.	What are Linux personalities?	BTL1	Remembering
20.	Define cloning in Linux.	BTL2	Understanding
21.	What is the purpose of clone() system call?	BTL1	Remembering
22.	Define signals in Linux.	BTL1	Remembering
23.	Mention any two Linux signals.	BTL1	Remembering

24.	What are the tools used for Linux development?	BTL2	Understanding
PART – B			
1.	Explain the concept of Open Source Software, its objectives, and characteristics in detail.	BTL5	Evaluating
2.	Discuss the need for Open Source Software and explain how it supports software development communities.	BTL4	analyzing
3.	Explain the advantages of Open Source Software and compare it with proprietary software.	BTL5	Evaluating
4.	Describe various applications of Open Source Software in education, business, networking, and software development.	BTL4	Analyzing
5.	Explain different Open Source Operating Systems and discuss their feature	BTL5	Evaluating
6.	Explain the history, architecture, and general overview of Linux Operating System with a neat diagram.	BTL5	Evaluating
7.	Describe Linux system architecture and explain the functions of hardware, kernel, shell, and applications.	BTL5	Evaluating
8.	Explain Linux Kernel architecture and discuss various responsibilities performed by the kernel.	BTL5	Evaluating
9.	Analyze Kernel Mode and User Mode in Linux and explain how communication occurs between them.	BTL4	Analyzing
10.	Explain Linux process management and discuss process creation, termination, and process states.	BTL5	Evaluating
11.	Discuss advanced process concepts in Linux including process hierarchy, system calls, and process control.	BTL4	Analyzing
12.	Explain Linux scheduling mechanism and discuss different scheduling algorithms used in Linux.	BTL5	Evaluating
13.	Analyze Linux scheduling policies and evaluate their performance in multitasking environments.	BTL4	Analyzing
14.	Explain on the parameters to estimate the performance of problem solving algorithms.	BTL5	Evaluating
15.	Explain Linux cloning mechanism and compare clone() system call with fork() system call.	BTL5	Evaluating
16.	Describe Linux signals, signal generation, signal handling mechanism, and commonly used signals.	BTL4	Analyzing
17.	Explain Linux development environment and design a Linux-based application development workflow using available tools.	BTL5	Evaluating

UNIT – II OPEN SOURCE DATABASE			
MySQL: Introduction – Setting up account – Starting, terminating and writing your ownSQL programs – Record selection Technology – Working with strings – Date and Time– Sorting Query Results – Generating Summary – Working with metadata – Usingsequences – MySQL and Web.			
PART – A			
Q. No.	Questions	BT Level	Competence
1.	Define MySQL.	BTL1	Remembering
2.	List the features of MySQL.	BTL1	Remembering
3.	What is a Database Management System?	BTL2	Understanding
4.	What is MySQL Server?	BTL1	Remembering
5.	List out the need for setting up a MySQL account.	BTL2	Understanding
6.	What are MySQL user accounts?	BTL2	Understanding
7.	What is the purpose of terminating a MySQL session?	BTL2	Understanding
8.	Define SQL program in MySQL.	BTL1	Remembering
9.	What is record selection technology?	BTL2	Understanding
10.	Write the syntax of SELECT statement.	BTL2	Understanding
11.	What is the use of WHERE clause?	BTL2	Understanding
12.	Define string functions in MySQL	BTL2	Understanding
13.	Mention any two MySQL string functions.	BTL2	Understanding
14.	What are Date and Time data types in MySQL?	BTL1	Remembering
15.	List any two date functions in MySQL.	BTL1	Remembering
16.	What is sorting of query results?	BTL2	Understanding
17.	Define aggregate functions in MySQL.	BTL1	Remembering
18.	What is summary generation in MySQL?	BTL2	Understanding
19.	What is metadata?	BTL2	Understanding
20.	How can metadata be accessed in MySQL?	BTL2	Understanding
21.	What are sequences?	BTL2	Understanding
22.	What is AUTO_INCREMENT in MySQL?	BTL2	Understanding
23.	Define MySQL integration with Web applications.	BTL1	Remembering
24.	What is MySQL Server?	BTL1	Remembering
PART – B			
1.	Explain the introduction, architecture, features, and applications of MySQL.	BTL3	Applying
2.	Describe the process of setting up a MySQL user account and explain user privileges.	BTL4	Analyzing
3.	Explain the procedure for starting, terminating, and managing MySQL sessions.	BTL5	Evaluating
4.	Explain how to write and execute SQL programs in MySQL with	BTL4	Analyzing

	examples.			
5.	Explain record selection technology in MySQL using SELECT statements and filtering techniques.	BTL4	Analyzing	
6.	Analyze different methods of retrieving records from MySQL table.	BTL4	Analyzing	
7.	Explain various string handling functions available in MySQL with examples.	BTL3	Applying	
8.	Analyze the use of string functions in database applications	BTL4	Analyzing	
9.	Explain MySQL Date and Time data types and functions with suitable examples.	BTL3	Applying	
10.	Discuss different methods for sorting query results in MySQL	BTL3	Applying	
11.	Explain summary generation using aggregate functions and grouping techniques.			
12.	Analyze the use of aggregate functions in real-time database applications.	BTL4	BTL4	Ana
13.	Explain MySQL metadata and describe methods to retrieve database information.	BTL5	Evaluating	
14.	Analyze the importance of metadata management in database administration.	BTL4	Analyzing	
15.	Explain sequences in MySQL and discuss AUTO_INCREMENT implementation.	BTL3	Applying	
16.	Examine the role of MySQL in web application development with suitable examples.	BTL4	Analyzing	
17.	Design a web-based application using MySQL database and explain the development process.	BTL4	Analyzing	

UNIT – III : OPEN SOURCE PROGRAMMING LANGUAGES

PHP: Introduction – Programming in web environment – variables – constants – data;types – operators – Statements – Functions – Arrays – OOP – String Manipulation and regular expression – File handling and data storage – PHP and SQL database – PHP and LDAP – PHP Connectivity – Sending and receiving E-mails – Debugging and error handling – Security – Templates.

PART – A

Q.N	Questions	BTL	Competence
1	Define PHP and mention any two features of PHP.	BTL 1	Remembering
2	What is the role of PHP in web development?	BTL 2	Understanding

3	What are PHP variables? Give an example.	BTL 2	Understanding
4	Define constants in PHP.	BTL 1	Remembering
5	List the different data types supported by PHP.	BTL 1	Remembering
6	What are operators in PHP? Mention any two types.	BTL 1	Remembering
7	What are PHP statements? Give examples.	BTL 1	Remembering
8	Define functions in PHP.	BTL 1	Remembering
9	Differentiate between built-in and user-defined functions in PHP.	BTL 2	Understanding
10	What are arrays in PHP?	BTL 1	Remembering
11	List the different types of arrays in PHP.	BTL 1	Remembering
12	What is Object-Oriented Programming in PHP?	BTL 1	Remembering
13	Define class and object in PHP.	BTL 1	Remembering
14	What is string manipulation?	BTL 1	Understanding
15	Define regular expression in PHP.	BTL 1	Remembering
16	What is file handling in PHP?	BTL 1	Remembering
17	Mention any two file handling functions in PHP.	BTL 1	Remembering
18	What is PHP database connectivity?	BTL 1	Remembering
19	What is LDAP?	BTL 1	Remembering
20	Explain sending emails using PHP.	BTL 2	Understanding
21	What is debugging in PHP?	BTL 1	Remembering
22	Define error handling in PHP.	BTL 1	Remembering
23	Mention any two security issues in PHP applications.	BTL 2	Understanding
24	What are templates in PHP?	BTL 1	Remembering

PART – B

Q.No	Questions	Marks	BTL	Competence
1	Explain the features, architecture, and working environment of PHP.	16	BTL 3	Applying
2	Describe PHP programming in a web environment with suitable examples.	16	BTL 3	Applying
3	Explain PHP variables, constants, and data types with examples.	16	BTL 3	Applying
4	Discuss different PHP operators and statements with suitable programs.	16	BTL 4	Analyzing
5	Develop PHP programs using functions and explain different types of function arguments.	16	BTL 4	Analyzing
6	Explain different types of arrays in PHP and demonstrate array operations.	16	BTL 3	Applying
7	Analyze Object-Oriented Programming concepts in PHP with examples.	16	BTL 4	Analyzing
8	Develop a PHP application using classes, objects, inheritance, and polymorphism.	16	BTL 6	Creating
9	Explain string manipulation functions and regular expressions in PHP with examples.	16	BTL 3	Applying
10	Design a PHP program for file handling and data storage operations.	16	BTL 6	Creating
11	Explain PHP and SQL database connectivity. Develop a PHP	16	BTL 5	Evaluating

	application to perform database operations.			
12	Analyze PHP connectivity methods with SQL databases and discuss their advantages.	16	BTL 4	Analyzing
13	Explain LDAP integration with PHP and its applications.	16	BTL 3	Applying
14	Discuss email handling in PHP and explain methods for sending and receiving emails.	16	BTL 4	Analyzing
15	Explain debugging techniques and error handling mechanisms in PHP.	16	BTL 3	Applying
16	Evaluate different security techniques used in PHP applications.	16	BTL 5	Evaluating
17	Explain PHP templates and design a template-based web application.	16	BTL 6	Creating

UNIT - IV: PYTHON

Syntax and Style – Python Objects – Numbers – Sequences – Strings – Lists and Tuples – Dictionaries – Conditionals and Loops – Files – Input and Output – Errors and Exceptions – Functions – Modules – Classes and OOP – Execution Environment.

PART – A

Q.No	Questions	BTL	Competence
1	Define Python programming language. Mention any two features of Python.	BTL 1	Remembering
2	What are Python objects? Give examples.	BTL 1	Remembering
3	List the different types of numeric objects supported by Python.	BTL 1	Remembering
4	What is the difference between mutable and immutable objects?	BTL 2	Understanding
5	Define sequence data types in Python. Give examples.	BTL 1	Remembering
6	What are strings in Python? How are they represented?	BTL 1	Understanding
7	Write any two string manipulation functions in Python.	BTL 1	Understanding
8	Differentiate between lists and tuples in Python.	BTL 2	Remembering
9	What are dictionaries in Python? Give an example.	BTL 1	Understanding
10	What is the purpose of indentation in Python?	BTL 2	Remembering
11	Write the syntax of an if statement in Python.	BTL 1	Understanding
12	What are looping statements available in Python?	BTL 1	Understanding
13	Define file handling in Python.	BTL 1	Understanding
14	Mention different file opening modes in Python.	BTL 1	Understanding
15	What is the difference between input() and print() functions?	BTL 2	Remembering
16	Define errors and exceptions in Python.	BTL 1	Understanding
17	What is exception handling? Mention the keywords used for handling exceptions.	BTL 2	Remembering
18	Define functions in Python. Write the syntax for creating a function.	BTL 1	Understanding
19	What are modules in Python?	BTL 1	Understanding
20	Differentiate between a module and a package.	BTL 2	Remembering
21	Define class and object in Python.	BTL 1	Understanding
22	What are the basic principles of Object-Oriented Programming?	BTL 1	Understanding
23	What is the Python execution environment?	BTL 1	Understanding
24	Mention any two advantages of using Python.	BTL 2	Remembering

PART – B				
Q.No	Questions	Marks	BT Level	Competence
1	Explain Python syntax and coding style guidelines with suitable examples.	16	BTL 5	Evaluating
2	Explain Python objects and different built-in data types with examples.	16	BTL 5	Evaluating
3	Describe numeric data types in Python and explain various arithmetic operations.	16	BTL 3	Applying
4	Explain Python sequence data types and demonstrate strings, lists, and tuples with examples.	16	BTL 5	Evaluating
5	Develop a Python program to perform different string operations and explain the methods used.	16	BTL 4	Analyzing
6	Compare lists and tuples. Write programs to demonstrate list and tuple operations.	16	BTL 4	Analyzing
7	Explain dictionaries in Python and develop programs using dictionary operations.	16	BTL 3	Applying
8	Analyze conditional statements and looping structures in Python with suitable programs.	16	BTL 4	Analyzing
9	Design a Python program using decision-making and looping statements to solve a real-world problem.	16	BTL 6	Creating
10	Explain file handling operations in Python. Write a program to read, write, and append data into files.	16	BTL 4	Analyzing
11	Explain Python input and output operations with suitable examples.	16	BTL 3	Applying
12	Discuss different types of errors and exception handling mechanisms in Python with examples.	16	BTL 4	Analyzing
13	Develop Python programs using user-defined functions and explain function arguments and return values.	16	BTL 5	Evaluating
14	Explain Python modules and demonstrate importing and using built-in and user-defined modules.	16	BTL 3	Applying
15	Explain Object-Oriented Programming concepts in Python with suitable examples.	16	BTL 4	Analyzing
16	Create a Python application using classes, objects, inheritance, and polymorphism. Explain the implementation.	16	BTL 6	Creating
17	Explain the Python execution environment, interpreter, virtual environment, and execution process.	16	BTL 5	Evaluating
UNIT – V : CASE STUDIES				
Apache, BSD, Linux, Mozilla (Firefox), Wikipedia, Joomla, GCC, Open Office.				
PART – A				
Q.N	Questions	BTL	Competence	
1	Define open source software.	BTL 1	Remembering	
2	What is Apache Software Foundation?	BTL 1	Remembering	

3	Mention any two features of Apache Web Server.	BTL 1	Remembering
4	What is BSD? Expand BSD.	BTL 1	Remembering
5	List any two variants of BSD operating systems.	BTL 1	Remembering
6	Define Linux operating system.	BTL 1	Remembering
7	Mention any two advantages of Linux.	BTL 2	Understanding
8	What is the Linux kernel?	BTL 1	Remembering
9	What is Mozilla Firefox?	BTL 1	Remembering
10	List any two features of Mozilla Firefox.	BTL 1	Remembering
11	Define Wikipedia.	BTL 1	Remembering
12	What is the role of Wikimedia Foundation?	BTL 1	Remembering
13	What is Joomla?	BTL 1	Remembering
14	Mention any two applications of Joomla.	BTL 2	Understanding
15	Expand GCC.	BTL 1	Remembering
16	What is the purpose of GCC compiler?	BTL 1	Remembering
17	List any two programming languages supported by GCC.	BTL 1	Remembering
18	What is OpenOffice?	BTL 1	Remembering
19	Mention any two components of OpenOffice.	BTL 1	Remembering
20	Differentiate between open source software and proprietary software.	BTL 2	Understanding
21	What are the benefits of using open source applications?	BTL 2	Understanding
22	Define free software and open source software.	BTL 1	Remembering
23	What is the importance of community support in open source projects?	BTL 2	Understanding
24	Mention any two examples of open source software.	BTL 1	Remembering

PART – B

Q.No	Questions	Marks	BTL	Competence
1	Explain the concept of open source software and discuss its advantages and limitations.	16	BTL 3	Applying
2	Describe the architecture, features, and applications of Apache Web Server.	16	BTL 3	Applying
3	Explain the history, features, and different versions of BSD operating systems.	16	BTL 3	Applying
4	Discuss Linux operating system architecture with emphasis on kernel, shell, and file system.	16	BTL 4	Analyzing
5	Analyze the advantages of Linux over proprietary operating systems.	16	BTL 4	Analyzing
6	Explain the development process and features of Mozilla Firefox browser.	16	BTL 3	Applying
7	Compare Mozilla Firefox with other web browsers based on features and security.	16	BTL 5	Evaluating
8	Explain Wikipedia as an open source knowledge platform and discuss its working model.	16	BTL 3	Applying
9	Analyze the role of Wikipedia in sharing and managing digital information.	16	BTL 4	Analyzing
10	Explain Joomla content management system and its architecture.	16	BTL 3	Applying

11	Develop a case study on Joomla-based website development and discuss its advantages.	16	BTL 6	Creating
12	Explain GCC compiler architecture and its role in open source software development.	16	BTL 4	Analyzing
13	Describe the compilation process in GCC with suitable examples.	16	BTL 3	Applying
14	Explain OpenOffice suite and describe its major components and applications.	16	BTL 3	Applying
15	Compare OpenOffice with commercial office productivity software.	16	BTL 5	Evaluating
16	Discuss various open source applications and analyze their impact in modern computing.	16	BTL 5	Evaluating
17	Design a case study explaining the use of Linux, Apache, GCC, and OpenOffice in an open source environment.	16	BTL 6	Creating
