

**TYBCA (SEM V) 2021-22**  
**INTERNAL MCQ EXAM SYLLABUS**  
**501: PHP & MySQL**

**Unit 1. Introduction to PHP and writing PHP code**

- 1.1. Web Communication fundamentals
  - 1.1.1. Request-Response
  - 1.1.2. Client-side Scripting
  - 1.1.3. Session management
- 1.2. Installation & Configuration of PHP and MySQL
- 1.3. How PHP code is parsed
- 1.4. Embedding PHP and HTML
- 1.5. Executing PHP and viewing in Browser
- 1.6. Data types
- 1.7. Operators
- 1.8. PHP variables: Static and Global variables
- 1.9. Comments in PHP
- 1.10. Control Statements
  - 1.10.1. Condition Statements
    - 1.10.1.1. If...Else
    - 1.10.1.2. Switch
    - 1.10.1.3. '?' Operator
  - 1.10.2. Loops
    - 1.10.2.1. While
    - 1.10.2.2. Break Statement
    - 1.10.2.3. Continue
    - 1.10.2.4. Do...While
    - 1.10.2.5. For
    - 1.10.2.6. For each
- 1.11. Exit, Die, Return
- 1.12. Arrays in PHP

**Unit 2. Working with Data and Functions**

- 2.1. FORM element, INPUT elements
- 2.2. Validating the user Input
- 2.3. Passing variables between pages through GET, POST and REQUEST
- 2.4. Built-in Functions
  - 2.4.1. String Functions: chr, ord, strtolower, strtoupper, strlen, ltrim, rtrim, substr, strcmp, strcasecmp, strpos, strrpos, strstr, stristr, str\_replace, strrev, echo, print
  - 2.4.2. Math Functions: abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand
  - 2.4.3. Array Functions: count, list, in\_array, current, next, previous, end, each, sort, rsort, asort, array\_merge, array\_reverse
  - 2.4.4. Date Functions: date, getdate, DateTime::setDate, checkdate, time, mktime
- 2.5. User-defined Functions

**Unit 4. Introduction to MySQL**

- 4.1. Types of tables in MySQL
- 4.2. Query in MySQL: Select, Insert, Update, Delete
- 4.3. Order By
- 4.4. Database connectivity of PHP with MySQL
- 4.5. Functions of MySQL

## **502: UNIX & Shell Programming**

### **Unit 1. Introduction**

- 1.1. Features of Unix OS 2.1 Logging in & out
- 1.2. System Structure
- 1.3. Shell & its features
- 1.4. Kernel
- 1.5. Architecture of the UNIX OS

### **Unit 2. Overview**

- 2.1 Logging in & out
- 2.2 I node and File Structure
- 2.3 File System Structure and Features
- 2.4 Booting Sequence & init process
- 2.5 File Access Permissions

### **Unit 3. Shell Programming**

- 3.1 Screen Editor “vi”
- 3.2 Shell’s interpretation at prompt
- 3.3 Arithmetic expression evaluation
- 3.4 Control Structure
- 3.5 Redirection

### **Unit 4. Advanced Shell Programming**

- 4.1. Filtering utilities: grep.
- 4.2. Splitting (cat, cut, head and tail), comparing (cmp, comm., diff), Sorting(sort), Merging & Ordering files (paste, uniq)

## **503: Network Technologies**

### **Unit 1. An Introduction to Networks, Network Topologies, and Types**

- 1.1 Data Communication [Analog, Digital]
- 1.2 Introduction: Networking
- 1.3 Information Exchange, Sharing, Preserving & Protecting
- 1.4 Hardware and Software Resource Sharing
- 1.5 Need Uses and Advantages of Network
- 1.6 Clients, Servers, Peers based and Hybrid Networks
- 1.7 Server types
- 1.8 Network Topologies (Bus, Star, Ring, Star Bus, Star Ring & Physical Mesh)
- 1.9 Defining Network Protocols (H/W Protocols, S/W Protocols H/W-S/W Interface)
- 1.10 Introduction to Wireless Network, Ad-hoc Wireless and Sensor Wireless Network

### **Unit 2. The Layering Models and Data Communication**

- 2.1 Introduction to OSI model with all layers
- 2.2 Differences between OSI Model & TCP/IP model
- 2.3 Data Communication Model, Digital and Analog data and signals, bit rate, baud, bandwidth, Nyquist bit rate

### **Unit 3. Networking Hardware**

- 3.1 Introduction to Guided Transmission Media-Twisted Pair, Coaxial cable, Optical Fibre
- 3.2 Wireless transmission-Radio waves, microwaves, infrared waves, Satellite Communication.
- 3.3 Networking devices (repeater, hub, switch, router, bridge, modem)

### **Unit 4. Basic of TCP/IP Model**

- 4.1 Introduction to TCP/IP Model
- 4.2 Network Access Layer – MAC Address
- 4.3 Internet Layer – IP Address, IP Subnetting
- 4.4 Transport Layer - TCP, UDP, Port number
- 4.5 Application Layer

### **Unit 5. Network Security: Introductory Concepts and Terminologies**

- 5.1 Various Types of Securities
- 5.2 Security with Certificates
- 5.3 Firewalls

## 504: Operating System - II

### **Unit 1. Processes Management**

- 1.1 Process Concept
- 1.2 Process Scheduling
- 1.3 Scheduling Criteria
- 1.4 Scheduling Algorithms

### **Unit 2. Process Synchronization**

- 2.1 Critical Section Problem
- 2.2 Producer / Consumer Problem
- 2.3 Semaphores
- 2.4 Monitors
- 2.5 Inter Process Communication
- 2.6 Classical IPC Problems
  - 2.6.1 The Dining Philosopher
  - 2.6.2 The Sleeping Barber Problem

### **Unit 3. Deadlocks**

- 3.1 System Model
- 3.2 Deadlock Characteristics
- 3.3 Methods of Handling Deadlock
- 3.4 Deadlock Prevention
- 3.5 Deadlock Avoidance
- 3.6 Deadlock Detection
- 3.7 Recovery from Deadlock

## 505: ASP.NET

### **Unit 1. Introduction to ASP.NET**

- 1.1 What is ASP.NET
- 1.2 .Net framework 2.0
- 1.3 Compile Code
  - 1.3.1 Code Behind and Inline Coding
- 1.4 The Common Language Runtime
- 1.5 Object Oriented Concepts
- 1.6 Event Driven Programming

### **Unit 2. Server Control**

- 2.1 Post back
- 2.2 Data Binding
  - 2.2.1 Grid View
  - 2.2.2 List Box
  - 2.2.3 Data list
  - 2.2.4 Data binding Events
  - 2.2.5 Repeater
  - 2.2.6 Form view
- 2.3 Web Server Controls, HTML Server Controls (basic HTML Server Control), Validation Controls, Navigation Controls, Login Control
- 2.4 Master Page, Themes & CSS