OUTLINES OF TESTS, SYLLABI AND COURSES OF READING

FOR

B.Voc. (SOFTWARE DEVELOPMENT)
Second Year
(THIRD AND FOURTH SEMESTER)
Programme Code: BSDB3PUP

FOR
For Session 2022-23

PUNJABI UNIVERSITY PATIALA
(Established under Punjab Act no. 35 of 1961)

SYLLABUS
OUTLINE OF PAPERS AND TESTS
FOR
B.VOC (Software Development) Second Year (3rd Semester)

For Session 2022-23
Programme Code: BSDB3PUP

Code	Title of Paper	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BSDB2101T	Discrete Mathematics	4	60	40	100	3
BSDB2102T	Software Engineering	4	60	40	100	3
BSDB2103T	Programming with Java	4.5	60	40	100	3
BSDB2104T	Programming using C++	4.5	60	40	100	3
BSDB2105L	Software Lab – IV	4.5	50	50	100	3
BSDB2106L	Software Lab – V	4.5	50	50	100	3
BSDB2107L	Software Lab – VI	4	50	50	100	3
BSDB2108T	Environment Studies and Road Safety Awareness**	4	70	30	100	
	Total	**30**	**390**	**310**	**700**	

1. The breakup of marks for the practical will be as under:
   i. Internal Assessment — 50 Marks
   ii. Viva Voce (External Evaluation) — 20 Marks
   iii. Lab Record Program Development and Execution(External Evaluation) — 30 Marks

2. The breakup of marks for the internal assessment for theory Subjects will be as under:
   i. Average of Both Mid Semester Tests / Internal Examinations — 16 Marks
   ii. Attendance — 8 Marks
   iii. Written Assignment/Project Work etc. — 16 Marks

** **BSDB2108T: Environmental and Road Safety Awareness** is a compulsory qualifying paper as per university guidelines, the marks for this paper are not counted for the total marks for the degree.

SYLLABUS
OUTLINE OF PAPERS AND TESTS
FOR
B.VOC (Software Development) Second Year (4th Semester)
For Session 2022-23
Programme Code: BSDB3PUP

Code	Title of Paper	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BSDB2201T	Foreign Language	4	60	40	100	3
BSDB2202T	Web Development Using PHP and MYSQL	4	60	40	100	3
BSDB2203T	Content Management System	4	60	40	100	3
BSDB2204L	Software Lab – VII	4	50	50	100	3
BSDB2205P	Project –II	6	50	50	100	3
BSDB2206L	Language Lab – III	4	50	50	100	3
Total		**30**	**330**	**270**	**600**	

1. The breakup of marks for the practical will be as under:
   i. Internal Assessment — 50 Marks
   ii. Viva Voce (External Evaluation) — 20 Marks
   iii. Lab Record Program Development and Execution(External Evaluation) — 30 Marks
2. The breakup of marks for the internal assessment for theory Subjects will be as under:
   i. Average of Both Mid Semester Tests / Internal Examinations — 16 Marks
   ii. Attendance — 8 Marks
   iii. Written Assignment/Project Work etc. — 16 Marks

BSDB2101T: **DISCRETE MATHEMATICS**

Max Marks: 60
Min Pass Marks: 35%

Maximum Time: 3 Hrs.
Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter
The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.
Instructions for the candidates Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Set theory: (Basic definitions), union, intersection, complement, difference of sets, DeMorgan's Laws, Subsets, power sets, Equal vs. equivalent sets, Cartesian products
Relations and functions: Symmetry, transitivity, reflexivity, Equivalence classes, Congruence, Functions, domain, range, co-domain of functions, One-to-one, onto function, inverse of a function.

SECTION B

Permutations, Combinations, Binomial Theorem, Pascal's Triangle, Towers of Hanoi, Recurrence Relations, Graphs and Trees.
Groups: Definitions, Examples, Properties, Semigroups, Monoids, Sub Groups , Normal SubGroup, Homomorphism

Reference Books:

1. Tremblay and Manohar, Discrete Mathematical Structures, Tata McGraw Hill
2. Discrete Mathematics Maggard, Thomson
3. Semyour Lipschutz, and Varsha Patil, Discrete Mathematics, Schaum's Series Tata McGraw-Hill.
4. Kolman, Busby and Ross, Discrete Mathematical Structures, Prentice Hall.
5. C. L. Liu, Elements of Discrete Structures, McGraw-Hill.
6. K. Rosen, Discrete Mathematics and its application, McGraw-Hill.
7. G. Shankar Rao, Discrete Mathematical Structure, New Age International.
8. D.P.Acharjaya and Sreekumar, Fundamental Approach to Discrete Mathematics, New Age International.

BSDB2102T: **SOFTWARE ENGINEERING**

Max Marks: 60 **Maximum Time: 3 Hrs.**
Min Pass Marks: 35% **Lectures to be delivered: 55-65 Hrs**

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to Software: Definition, Software characteristics, Software components, Software Applications.

Introduction to Software Engineering: Definition, Software Engineering Paradigms, waterfall method, prototyping, Interactive Enhancement, The Spiral model, Fourth Generation Technique.

Software Requirement Specification (SRS): Problem analysis, structuring information, Data flow diagram and data dictionary, structured analysis, Characteristics and component of (SRS).

Planning a Software Project: Cost estimation, uncertainties in cost estimation, Single variable model, and COCOMO model.

SECTION B

System Design: Design Objectives, Design Principles, problem, Partitioning, Abstraction, Top Down and Bottom–up techniques, Structure Design, Structure Charts, Design Methodology, Design Review.

Detailed Design: Module specification, Specifying functional module, data abstraction.

Coding: Coding by Top–down and Bottom–up, Structured Programming, Information Hiding, Programming style, Internal Documentation.

Reference Books:

1. Roger S Pressman, Software Engineering – A Practitioner's Approach, Tata McGraw- Hill.
2. I. Sommerville, Software Engineering, Pearson Education.
3. Pfleeger, Software Engineering, Pearson Education.
4. Carlo Ghezzi, Mehdi Jazayari and Dino Mandrioli, Fundamentals of Software Engineering, Prentice Hall.

BSDB2103T: **PROGRAMMING WITH JAVA**

Max Marks: 60 **Maximum Time: 3 Hrs.**
Min Pass Marks: 35% **Lectures to be delivered: 55-65 Hrs**

Instructions for the paper setter
The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates
Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction: Features of Java, Java Development Kit, Java Virtual Machine, Understanding class path, Concepts of Classes and Objects, Constructors, Constructor Overloading.
Inheritance: Types of Inheritance, Use of Super keyword, Method Overriding, Function Overloading.
Interfaces and Packages: Interfaces and implementing multiple inheritance through interfaces, Packages.
Multithreaded Programming: Creating Threads, Life cycle of thread, Thread priority, Thread synchronization, Inter-thread communication.

SECTION B

Exception Handling: Types of errors, Exception classes, Exception handling in java, use of try, catch, finally, throw and throws.
Event Handling: Event Classes, Event Sources, Event Listener Interfaces, Adapter Classes.
Swing: Features, Swing Packages, Components and containers, Working with Swings, User Interface **Components:** JApplet, Label, Button, CheckBox, TextField, TextArea, adioButton, Panel, ScrollPane, List. Types of Layouts : FlowLayout, BorderLayout, GridLayout, CardLayout, GridbagLayout. Using Dailogs, JOptionPane.
JDBC: JDBC Fundamentals, Establishing Connectivity and working with connection interface.

Reference Books:

1. Patrick Naughton and Herbert Schildt, The Complete Reference Java 2, Tata McGraw Hill.
2. Gilbert, Stephan D. and William B. Hccarthy, Object Oriented Programming in Java , The Waite Group Press, 1997.
3. Mary Campione and Kathy Walrath, The Java Tutorial, Addison – Wesley.
4. Cay S. Horstmann, and Gary Cornell, Core Java 2 : Fundamentals Vol. 1, Pearson Education.
5. Balagurusamy, Programming with Java : A Primer, Tata McGraw Hill.
6. Jeffry A. Borror, Object Oriented Programming with Java-An Ultimate Tutorial,

BSDB2104T: **PROGRAMMING USING C++**

Max Marks: 60
Min Pass Marks: 35%

Maximum Time: 3 Hrs.
Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter
The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates
Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction: Basics of Object Oriented Programming (OOP), Difference between C & C++, Manipulators, Storage classes.
Classes and Objects: Class Declaration and Class Definition, Defining member functions, inline functions, Nesting of member functions, Members access control. this pointer. Objects: Object as function arguments, array of objects, functions returning objects, Const member.
Static data members and Static member functions, Friend functions and Friend classes
Constructors: properties, types of constructors, Dynamic constructors, Constructor overloading.
Destructors: Properties, Virtual destructors. Destroying objects. Rules for constructors and destructors.
Array of objects. Dynamic memory allocation using new and delete operators, Nested and container classes, Scopes: Local, Global, Namespace and Class.
Inheritance: Defining derived classes, Types of inheritance, types of derivation- public, private, protected, function redefining, constructors in derived class, Types of base classes – abstract and virtual.

SECTION B

Operator overloading: rules for operator overloading overloading binary operator, overloading unary operators,Function overloading.
Polymorphism : virtual functions, late binding, pure virtual functions and abstract base class
Difference between function overloading, redefining, and overriding.
Templates: Generic Functions and Generic Classes, Overloading of template functions.
Exception Handling : catching class types, handling derived class exceptions, catching exceptions, restricting exception, rethrowing exceptions, terminate and unexpected, uncaught exceptions.

Reference Books:

1. E. Balaguruswamy, Object Oriented Programming with C++, Tata McGraw-Hill.
2. Deitel & Deitel, "C++ How to Program", Pearson Education.
3. Herbert Schildt, The Complete Reference C++, Tata McGraw-Hill, 2001.
4. Robert Lafore, Object Oriented Programming in C++, Galgotia Publications,
5. Bjarne Strautrup, "The C++ Programming Language", Addition- Wesley Publication.
6. E. Balagurusamy, Object Oriented Programming with C++, Tata McGraw-Hill.
7. Anshuman Sharma, Learn Programming in C++, Lakhanpal Publishers.

BSDB2105L: **SOFTWARE LAB – IV (Based on** BSDB2103T)

Max Marks: 50 **Maximum Time: 3 Hrs.**
Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB2103T. Students are required to develop the following programs with internal documentation:

1. WAP to demonstrate the concept of class.
2. WAP that illustrates the use of constructor.
3. WAP for constructor overloading.
4. WAP for single inheritance using super keyword.
5. WAP for multilevel inheritance.
6. WAP to demonstrate method overriding.
7. WAP that implements multiple inheritance through interface.
8. WAP to demonstrate importing multiple packages.
9. WAP to demonstrate creating threads by extending Thread class.
10. WAP to demonstrate creating threads by implementing Runnable interface.
11. WAP that illustrates the use of exception handling.
12. WAP to demonstrate the event handling mechanism using KeyListener interface.
13. WAP to demonstrate the creation of Swing application.
14. WAP to demonstrate the use of various Swing components.
15. WAP to implement FlowLayout.
16. WAP to implement GridLayout.

Activity – II

1. Write code for event handling, database connectivity and report generation.

BSDB2106L: **SOFTWARE LAB – V (Based on** BSDB2104T)

Maximum Time: 3 Hrs.

Max Marks: 50
Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB2104T. Students are required to develop the following programs with internal documentation:

1. Write a program to find area of rectangle using the concept of classes & object.
2. Write a program to implement the concept of array of object.
3. Write a program to show the use of friend function.
4. Write a program to show the use of constructor overloading.
5. Write a program to show the use of copy constructor.
6. Write a program to show the use of destructors.
7. Write a program to show the use of virtual function.
8. Write a program to implement the concept of multilevel inheritance.
9. Write a program to implement the concept of multiple inheritance.
10. Write a program of unary operator overloading.
11. Write a program of Binary operator overloading.
12. Write a program to swap two values independent of type of the variable using function template.
13. Write a program to illustrate how an exception is handled using try catch block using throw statements.
14. Write a program to demonstrate how to insert and extract an object to and from data files.
15. Write a program to count the total number of account objects in a file and then display information of a particular account object.

39/C

BSDB2107L: **SOFTWARE LABS – VI (Internet Lab)**

Max Marks:50 **Maximum Time: 3 Hrs.**
Min Pass Marks: 35%

In the Internet lab Student has to learn and perform activities related to:

1. Web Browsing
2. Internet
3. connect with internet
4. modem and Router
5. LAN, MAN and WAN
6. WWW
7. Internet Explorer, Keyboard Shortcuts
8. Cookies, Browser Terms in Netscape Navigator and Internet Explorer.
9. Search and save Data from internet
10. Email?
11. Create Email.
12. Send email.
13. Download Data from internet
14. Attach files with email.

BSDB2108T: Environmental and Road Safety Awareness
Part II, Semester –III,
Session 2022-23

To Download the Syllabus, go to:

www.punjabiuniversity.ac.in → Important Links → Download Syllabus →

Academic Session 2022-23 → Common for All

BSDB2201T: FOREIGN LANGUAGE

Max Marks: 60 **Maximum Time: 3 Hrs.**
Lecture to be delivered: 55-65 **Min Pass Marks: 35%**

Instructions for the paper setter
The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having six parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates
Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

1: articles define et indefinis,
2: genre et nombre des noms et des adjectives,
3: interrogation et negation
4: conjugaison du present

SECTION B

1: articles partitifs,
2: adjectives demonstratives et possessifs
3: prepositions et adververbes de quantite et de lieu
4: pronom toniques,
5: conjugaison del" imperative
6: verbs pronominaux

2: **pragraphe** writing 10 Marks

3: **comprehension** 20 Marks

4: **traduction**: 20 Marks

1: Anglais a francais
2: francais a anglais

Reference Books:
1and 2 unites of "Le Nouveau Sans Frontieres "(Methode de Francais)-part 1 Le Dictionaire

BSDB2202T: WEB DEVELOPMENT USING PHP AND MYSQL

Max Marks: 60
Min Pass Marks: 35%

Maximum Time: 3 Hrs.
Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter
The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates
Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

PHP: A Brief History of PHP, Introduction to PHP, Syntax, Scope of Variables: Global and Local Variables, Data types, Control Statements, Operators- Arithmetic, Logical, Relational and Bit-Wise operators. Functions, JavaScript functions Local and Global scope, Calling Functions, Defining a Function, Built-in functions. Installing and Configuring PHP on Windows. Installing web site on web server-Apache, WAMP. Creating Arrays, Multidimensional Arrays, Cookies. Document Object Model and Finding Elements. Basic Events, Standard Event Model.

String: Quoting String Constants - Printing Strings - Accessing Individual Characters -Cleaning Strings - Encoding and Escaping -Comparing Strings - Manipulating and Searching Strings – Regular Expressions.

SECTION B

Connecting to MySQL from PHP: Server side programming, Client Side Scripting, WAMP tool, HTML Form Fields (Controls), PHP Form Handling, Form Validations.

Objects: Terminology - Creating an Object - Accessing Properties and Methods - Declaring a Class - Introspection – Serialization Extending PHP.

AJAX: Introduction, Identifiers, Variables, Defined Constants, Operators and Expressions.HTML Form Fields (Controls).

Architectural Overview: The pval/zval Data Type, Parameter Handling, Returning Values, References, Global Variables.

Introduction to MySql: Data Types, Sql Queries :Creating Database, Creating Table, Inserting, Updating, Deleting Data. Searching, Sorting , Altering table.

Reference Books:

1. Robin Nixon, Learning PHP, MySQL, and JavaScript, Shroff/O'Reilly.
2. Raj Kamal, Internet and Web Technologies, Tata McGraw-Hill.
3. Matt Zandstra, Sams Teach Yourself PHP in 24 Hours, Sams Publishing.
4. Steven M. Schafer, HTML, CSS, JavaScript, Perl, Python and PHP, Wiley India

BSDB2203T: CONTENT MANAGEMENT SYSTEM

Max Marks: 60
Min Pass Marks: 35%

Maximum Time: 3 Hrs.
Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter
The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates
Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction: Open Source vs Closed Source , Examples of OSS. What is Joomla? Features of Joomla Understanding WAMP Installing & Configuring Joomla:Installing WampServer ,Creating a Website Folder , Copy the Joomla Files ,Configuring the Joomla Web Installer Understanding The Frontend and Backend of Joomla, Login as a Super User,The Joomla Control Panel Creating Content: Creating Categories , Creating Categorized or Uncategorized Articles , Inserting Images/Graphics Into Articles , Inserting the Read More Option into Articles , Filtering & Sorting Articles, Featuring Articles on the Home Page ,Viewing Your Website , Setting the Options for Articles

SECTION B

Adding Menu Items: Adding a Single Article Menu Item, Adding a List All Categories Menu Item , Changing the Layout From Blog Layout , Adding a Category List Menu Item ,Changing the Menu Order, Joomla Extension Types: What is a Component? What is a Module? What is a Plugin? What is a Template? What is Language? Adding Modules:Enabling Module Position Viewing, Viewing the Module Positions, Changing Module Positions ,Logging in From the Frontend to Edit Content , Adding the Search Module, Creating an HTML Module Joomla Templates: Viewing Joomla Templates, Types of Templates, Default Joomla Templates, Changing the Default Template for a Website, Previewing a Joomla Template, Installing a Template, Changing the Logo/Header, Installing a Photo Gallery Component Creating Folders for the Photos Uploading the Photos, Adding a Gallery Menu Item About Akeeba Backup Installing, Akeeba Backup Configuring Akeeba Backup Creating a Backup, Copy of Your Website, Downloading Your Backup Archives

Reference Books:

1. Jennifer Marriott and Elin Waring, The Official Joomla! Book Addison-Wesley Professional.
2. Ric Shreves, Joomla! Bible, Wiley.

BSDB2204L: SOFTWARE LAB – VII (Based on BSDB2203T)

Max Marks: 50 **Maximum Time: 3 Hrs.**
Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB2203T. Students are required to do followings:

Lab Assignments - Installing and Configuring PHP on Windows, Installing web site on web server-Apache, WAMP. HTML tag based, Advanced HTML based, Database, Simple PHP, Advanced PHP, HTML-DBMS-PHP, Dynamic Web Pages/Sites.
Creation of Web pages using HTML, DHTML.
Creation of Web pages using JavaScript.
Creating web pages using PHP.

Programs:

1. Write a program to print any text in PHP.
2. Write a program to print the data types of PHP i.e. using String, Integer, Floating point numbers, Boolean, Array, Object, NULL.
3. Write a program of arithmetic operators.
4. Write any program of using conditional Statements.
5. Write a program to implement switch case in PHP.
6. Write a program to add two numbers using functions.
7. Write a program to implement while loop .
8. Print different values using for each loop.
9. Create a Date From a String With PHP strtotime() function
10. Write a program to open, read and close file in PHP.
11. Write a function to connect and create database using PHP.
12. Write a program to implement mail function.
13. Write a program to implement WHERE clause in php MySQL?
14. Write a program to implement file upload using PHP.
15. Write a program to start, store and delete session variable.

Reference Books:

1. WAMP Tools, LAMP Tools,
2. Apache Web Server, PHP compiler

BSDB2205P: PROJECT II - 3 Month Industrial Training

Max Marks: 50 **Maximum Time: 3 Hrs.**
Min Pass Marks: 35%

In This course student will have to do Industrial training on live project for 3 Months. The Industry should be ISO certified. In Last Student have to Submit Project Report of their training to the supervisor.

a. Project Report 25 Marks

b. Viva Voce 25 Marks

BSDB2206L: LANGUAGE LAB-III (Based on BSDB2201T)

Max Marks: 50 **Maximum Time: 3 Hrs.**
Min Pass Marks: 35%

1: pragraphe writing	10 Marks
2: comprehension	10 Marks
3: traduction:	20 Marks

a) Anglais a francais
b) francais a anglais