JAI HIND COLLEGE
BASANTSING INSTITUTE OF SCIENCE
&
J.T.LALVANI COLLEGE OF COMMERCE
(AUTONOMOUS)

"A" Road, Churchgate, Mumbai - 400 020, India.

Affiliated to
University of Mumbai

Program : F.Y.B.Voc

Proposed Course : F.Y.B.Voc Software Development

Credit Based Semester and Grading System (CBCS) with effect from the academic year 2018-19

F.Y.B.Voc Software Development Syllabus

Academic year 2018-2019

Course Code	Course Title	Credits	Lectures /Week
Semester <II>			
General Component			
SBSD201	Organizational Behavior, Cultural & Health Psychology	4	3
SBSD202	Principles of Marketing & Customer Service Management	4	3
SBSD203	Introduction to computer networks	4	3
Skill Component			
SBSD204	Modern Operating Systems	4	3
SBSD205	Computational Mathematics	4	3
SBSD206	Core Java	4	3
SBSD207	Database Management System	4	3
SBSD204PR	Modern Operating Systems Practical	1.5	3
SBSD205PR	Computational Mathematics Practical	1.5	3
SBSD206PR	Core Java Practical	1.5	3
SBSD207PR	Database Management System Practical	1.5	3

Semester II – Theory

Course: SBSD201	Course Title:Organizational Behavior, Cultural & Health Psychology(Credits :04 Lectures/Week:03)	
	Objectives: The main objective of Organizational Behavior is to understand the human interactions in an organization, find what is driving it and influence it for getting better results in attaining business goals. **Outcomes:** ➢ Demonstrate knowledge of OB theories, models and concepts presented in the course Demonstrate understanding of the role of individual level (micro), and group and ➢ organizational level (macro) factors in fostering organizational success Demonstrate the ability to analyze and evaluate organizational behaviour ➢ information Understand how evidence-based management is used to diagnosis problems ➢ and provide solutions to organizations	
Unit I	**Organizational Behavior& Cultural Psychology, Meaning and Scope**	4L
Unit II	**Individual Behavior& Personality** – Type A and B, Big five personality types, Factors influencing personality. **Values and Attitudes**– Concept and types of values: Terminal value and instrumental value. Components of attitude, job related attitudes, measurement of attitude. **Learning** – Concept and learning theories and reinforcement. Perceptions And Emotions – Importance, factors influencing perception, perpetual distortions, emotional intelligence.	16L
Unit III	**Motivation** – Meaning and importance of motivation, Maslow's need hierarchy theory, Herzberg's two factor theory, Theory X Theory Y, Intrinsic and Extrinsic motivation by Ken Thomas **Introduction to Health Psychology**: components of health as social, emotional, cognitive and physical aspects, relationship between health and psychology, mind and body relationship, goals of health psychology	15L
Unit-IV	**Cross cultural management**: Frameworks of cross cultural managing skills – Cultural shock and acculturation – cross cultural training- managing multi-cultural teams, cultural negotiations, global leadership & motivational issues – cultural difference in ethics & decision making.	10 L
Textbook: 1. Robbins, S.P., OrganisationalBehaviour, Prentice Hall of India Pvt. Ltd., New Delhi. 2. 2. Greenberg, Jerald, and Robert A Baron, OrganisationalBehaviour, Prentice Hall of India Pvt. Ltd., New Delhi. 3. 3. Luthans, F., OrganisationalBehaviour, McGraw Hill International. New York		

Evaluation Scheme

[A] Evaluation scheme for Theory courses
I. **Continuous Assessment (C.A.) - 40 Marks**
   (i) **C.A.-I : Test – 20 Marks of 40 mins. duration**
   (ii) **C.A.-II : Type Name (Presentation.)**

II. **Semester End Examination (SEE)- 60 Marks**

Course: SBSD202	Course Title:Principles of Marketing & Customer Service Management (Credits :04 Lectures/Week:03)	
Unit I	**Marketing – An Overview:** Introduction, Definition of Market, Types of Markets, Meaning and Definition of Marketing, Origin of Marketing, Scope of Marketing, Importance of Marketing, Functions of Marketing, Difference between Marketing and Selling: **Marketing Concepts:** Introduction, Exchange concept, Production concept, Product concept, Sales/selling concept, Modern marketing concept, Societal marketing concept, Impact of marketing concepts and its applicability	10L
Unit II	**Marketing Environment**- Introduction, Need and Importance of Environmental Analysis, Methods of Analysis – SWOT, PEST, Internal Environment of the Organization, External Environment; Marketing Mix: Introduction, Evolution of the "Marketing mix", Components of a traditional marketing mix , Additional components in the mix, Importance of marketing mix in marketing decisions	10L
Unit III	**Customer Relationship Management** Customer Relationship Management Fundamentals- Theoretical perspectives of relationship, Evolution of relationship marketing, Customer Satisfaction: Meaning, Definition, Significance of Customer Satisfaction, Components of Customer Satisfaction, Customer Satisfaction Models, Rationale of Customer Satisfaction, Measuring Customer Satisfaction, Cases of Customer Satisfaction	15L
Unit-IV	Service Quality: Concept of Quality, Meaning and Definition of Service Quality, Factors influencing customer expectation and perception, Types of Service Quality, Service Quality Dimensions, Service Quality Gaps, Measuring Service Quality, Service Quality measurement Scales	10L

Textbook:
1. Alok Kumar Rai : Customer Relationship Management: Concepts and Cases (Second Edition)-PHI Learning
2. Simon Knox, Adrian Payne, Stan Maklan: Customer Relationship Management-Routledge Inc.
3. Bhasin- Customer Relationship Management (Wiley Dreamtech)
4. Dyche- Customer relationship management handbook prentice hall
5. Peelan-Customer relationship management prentice hall

Evaluation Scheme

[A] Evaluation scheme for Theory courses

I. Continuous Assessment (C.A.) - 40 Marks

(i) C.A.-I : Test – 20 Marks of 40 mins. duration

(ii) C.A.-II : Type Name (Presentation.)

II. Semester End Examination (SEE)- 60 Marks

Course: SBSD203	Course Title:Introduction to Computer Networks (Credits :04 Lectures/Week:03)	
	Objectives: ➢ **Resource sharing is the main objective of the computer network.** ➢ **The goal is to provide all the program, date and hardware is available to everyone on the network without regard to the physical location of the resource and the users.** ➢ **The second objective is to provide the high Reliability.** ➢ **It is achieved by replicating the files on two or more machines, so in case of unavailability (due to fail of hardware) the other copies can be used.** **Outcomes:** **The *course* includes the following topics: Open Systems Interconnection (OSI) communication model; error detection and recovery; local area *networks*; bridges, routers and gateways; *network* naming and addressing; and local and remote procedures.**	
Unit I	**KNOWING COMPUTER:** What Is Computer, Basic Applications of Computer, Evolution of Computers - Generations, Types of Computers, Computer System, Characteristics, Data, Information **HARDWARE:** Basic Components of a Digital Computer - Control Unit, ALU, Input / Output, Functions and Memory, Memory Addressing Capability of a CPU, Processing Speed of computer.	**15L**
Unit II	**What is a Network :**Introduction, Local Area Network, Wide Area Network, Advantages of a School Network, Disadvantages of a School Network **Protocol:** Introduction**,** Ethernet (Physical/Data Layers)**,** IP/IPX (Network Layer)**,** TCP/SPX (Transportation layer)**,** HTTP, FTP, Telnet, SMPT, and DNS(Session/Presentation/Application Layers)	**10L**
Unit III	**Hardware:**Introduction**,** File Server**,** Workstations**,** Laptops/Mobile Devices**,** Network Interface Cards**,** Switches/Concentrators/Hubs**,** Repeaters, Bridges**,** Routers, Firewalls **Cabling:**Introduction**,** Unshielded Twisted Pair (UTS) Cable**,** Shielded Twisted Pair (STP) Cable**,** Coaxial Cable**,** Fiber Optic Cable**,** Ethernet Cable Summary**,** Cable Installation Guidelines, Wireless LANs	**10L**
Unit-IV	**Topology:**Introduction, Linear Bus, Star, Tree or Expanded Star, Choosing a Topology **Addresses:** Class A, Class B, Class C **Software:**Introduction**,** Peer-to-Peer**,** Client/Server**,** Network Operating System Software	**10L**
Textbook: 1. Networking Essentials"- Glenn Berg 2. "Computer system architecture"- M. Morris Mano 3. "An Internet starter kit"- Sam 4. "E-Commerce"- David Whiteley 5. "Introduction to computer"-Peter Norton 6. "How computer work"- Ron White (QUE)		

[A] Evaluation scheme for Theory courses

   I. Continuous Assessment (C.A.) - 40 Marks
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     (ii) C.A.-II : Type Name (Presentation.)

   II. Semester End Examination (SEE)- 60 Marks

Course: SBSD204	Course Title:Modern Operating Systems(Credits :04 Lectures/Week:03)	

	Objectives:
	  ➢ **To give an overview on operating system**
	  ➢ **To demonstrate process management and system structure**
	  ➢ **To discuss about the process scheduling and synchronization**
	  ➢ **To explain in detail about memory management and virtual memory**
	  ➢ **To discuss about various file systems**
	Outcomes:
	Understand different structures and services of the operating system. Also understand the concept of deadlock, memory management, scheduling algorithms and synchronization concepts.	

Unit I	**Introduction to Operating Systems:** OS and Computer System Architecture, OS Operations, Process Management, Memory Management, Storage Management, Protection and security, Batch processing, time-sharing, multiprocessing, real time, distributed and modern operating systems, Desktop Systems, Handheld Systems, Clustered Systems, Operating-System Structures, Operating-System Services, User Operating-System Interface, System Calls, Types of System Calls, System Programs, Operating-System Design and Implementation, Virtual Machines, Operating-System Generation, System Boot	**15L**
Unit – II	**Processes and Process Synchronization:** Process Concept, Process Scheduling, Scheduling Criteria , Scheduling Algorithms, Operations on Processes, Interprocess Communication **Threads:** Threads, Multithreading Models, Threading Issues, Thread Scheduling, Communication in Client– Server Systems, The Critical-Section Problem, Peterson's Solution, Semaphores **Deadlocks:** Deadlocks, Deadlock detection and recovery, avoidance and prevention	**15L**

Unit III	**Memory Management:** Memory management without swapping or paging, Swapping, Virtual Memory, Page replacement algorithms, Modeling paging algorithms, Design issues for paging systems, segmentation **I/O Sytem:** Overview, I/O hardware, Application I/O Interface	**15L**
Unit IV	**File Systems:** Files, Directories, file system implementation, file-system management and optimization, MS-DOS file system, UNIX V7 file system, CD ROM file system Virtualization and Cloud: History, requirements for virtualization, type 1 and 2 hypervisors, techniques for efficient virtualization, hypervisor microkernels, memory virtualization, I/O virtualization, Virtual appliances, virtual machines on multicore CPU, Clouds.	**15L**

Textbook:
1. Andrew S. Tanenbaum, Herbert Bos(2014). Modern Operating Systems : Pearson
2. Abraham Silberschatz, Peter B. Galvineg Gagne. Operating System Concepts : Wiley

Evaluation Scheme

[A] Evaluation scheme for Theory courses

I. Continuous Assessment (C.A.) - 40 Marks

i) C.A.-I : Test – 20 Marks of 40 mins. duration

ii) C.A.-II : Type Name (Mini Project)

II. Semester End Examination (SEE)- 60 Marks

Course: SBSD205	Course Title: Computational Mathematics (Credits :04 Lectures/Week:03)	
	Objectives: It will develop problem-solving and critical thinking skills and use these skills to solve complex computing problems **Outcomes:** ➢ Understand strategies for effective design and their application in designing computing systems ➢ Learn to acquire problem requirements and specifications from the client and express them ➢ Develop and test software solutions using different design methodologies, application program interfaces, and programming languages ➢ Demonstrate appropriate uses of modern tools of the computing profession	
Unit I	**The Mean, Median, Mode, and Other Measures of Central Tendency**: Index, or Subscript, Notation, Summation Notation, Averages, or Measures of Central Tendency ,The Arithmetic Mean , The Weighted Arithmetic Mean ,Properties of the Arithmetic Mean ,The Arithmetic Mean Computed from Grouped Data ,The Median ,The Mode, The Empirical Relation Between the Mean, Median, and Mode, The Geometric Mean G, The Harmonic Mean H ,The Relation Between the Arithmetic, Geometric, and Harmonic Means, The Root Mean Square, Quartiles, Deciles, and Percentiles, Software and Measures of Central Tendency.	**15L**
Unit II	**Elementary Sampling Theory** : Sampling Theory, Random Samples and Random Numbers, Sampling With and Without Replacement, **Distributions**: Discrete distributions: Uniform, Binomial, Poisson, Continuous distributions: uniform distributions, exponential, Normal distribution state all the properties and its applications.	**15L**
Unit III	**Errors:**Approximations and Round-Off Errors: Significant Figures, Accuracy and Precision, Error Definitions, Round-Off Errors **Solutions of Algebraic and Transcendental Equations** using - Bisection Method, the Method of False Position, NewtonRaphson Method. **Interpolation:**Forward Difference, Backward Difference, Newton's Forward Difference Interpolation, Newton's Backward Difference Interpolation, Lagrange's Interpolation.	**15L**
Unit IV	**Curve Fitting and the Method of Least Squares:** Relationship Between Variables, Curve Fitting, Equations of Approximating Curves, Freehand Method of Curve Fitting, The Straight Line, The Method of Least Squares, The Least-Squares Line, Nonlinear Relationships, The Least-Squares Parabola, Regression, Applications to Time Series, Problems Involving More Than Two Variables	**15L**

Textbook:
1. STATISTICS Murray R. Spiegel, Larry J. Stephens. McGRAW –HILL ITERNATIONALFOURTH
2. Discrete Mathematics with Applications Sussana S. Epp Cengage Learning 4th 2010

Evaluation Scheme

[A] Evaluation scheme for Theory courses

I. Continuous Assessment (C.A.) - 40 Marks

i) C.A.-I : Test – 20 Marks of 40 mins. duration

ii) C.A.-II : Type Name (Assignment)

II. Semester End Examination (SEE)- 60 Marks

Course: SBSD206	Course Title: Core Java(Credits :04 Lectures/Week:03)	
	Objectives: • Designs will demonstrate the use of good object-oriented design principles including encapsulation and information hiding. • The implementation will demonstrate the use of a variety of basic control structures including selection and repetition; classes and objects in a tiered architecture (user interface, controller, and application logic layers); primitive and reference data types including composition; basic AWT components; file-based I/O; and one-dimensional arrays. **Outcomes:** • Create Java programs that solve simple business problems. • Validate user input. • Construct a Java class based on a UML class diagram. • Perform a test plan to validate a Java program. • Document a Java program.	
Unit I	**Introduction :**History of Java, Java features, different types ofJava programs, Differentiate Java with C and C++, JVM, JIT and JRE. **Java Basics :**Variables and data types, declaring variables, literals: numeric, Boolean, character and string literals, keywords, type conversion and casting. Standard default values. **Java Operators :**Arithmetic, relational, logical, assignment,increment and decrement, conditional, bitwise, precedence and order of evaluation, statement and expressions, string arithmetic. **Loops and Controls :**Control statements for decision making :select statements (if statement, if … else … statement, if …. Else … if … statement, switch statement), goto statement, looping (while loop, do … while loop and for loop), nested loops, breaking out of loops (break and continue statements), labeled loops. **Arrays and Strings :**One and two dimensional array, creating anarray, strings, stringbuffer. **Introduction of Classes :**Defining a class, creating instance andclass members : creating object of a class, accessing instance variables of a class, creating methods, naming methods of a class, accessing methods of a class, constructor, parameterized constructor, 'this' keywood, garbage collection, finalize() method, methods overloading, constructor overloading, nested and inner classes, static member. **Visibility control :** public access, friendly access, protectedaccess, private access, private protected access.	**15L**
Unit II	**Inheritance :**Various types of inheritance, super and subclasses,keywords - 'extends', 'super', constructor chaining, method overriding, final variables and methods, final classes, abstract method and classes, dynamic method dispatch. **Interface :**Defining interfaces, extending interfaces, implementinginterfaces. **Packages :**System packages, using system package,	**15L**

	namingconventions, creating packages, accessing a package, using a package, adding a class to a package **Introduction to Collections Framework:** The collection Framework, Utility Classes(Stack,Sort, Queue, Vector, Iterator,Enumerator) **Introduction to Thread Programming:** Introduction to Threads, Creating Threads, Lifecycle of a Thread, Synchronization **Exception Handling** : Exception-handling fundamentals, Exception types, Uncaught exceptions, Using try and catch, Multiple catch clauses, nested try statements, use of throw, throws and finally keywords, Java's Built-in exceptions, User defined exception, Chained Exception.	
Unit III	**Streams and File I/O :**Concept of streams, stream classes, bytestream classes : InputStream, and OutputStream, character stream classes : Reader and Writer, Difference between byte stream classes and character stream classes, other I/O classes. File class, Reading / writing bytes / characters, random access file, serialization. **Applets :**Difference of applet and application, creating applets,applet life cycle, passing parameters to applets. Graphics, Fonts and Color : The graphics class, painting, repainting and updating an applet, sizing graphics. Font class, draw graphical figures - lines and rectangle, circle and ellipse, drawing arcs, drawing polygons. Working with Colors : Color methods, setting the paint mode. **AWT& Swing Package :**Window fundamentals : Component, container,Panel, Window, Frame, and Canvas. AWT& Swing Controls Controls : labels, buttons, textfield, textarea, checkboxes, checkboxgroup, choice, and list. Layout Managers :FlowLayout, BorderLayout, GridLayout	**15L**
Unit IV	**Event Handling :**The Delegation Event Model, Event classes(ActionEvent, FocusEvent, InputEvent, ItemEvent, KeyEvent, MouseEvent, MouseWheelEvent, TextEvent, WindowsEvent) and various listener interfaces (ActionListener, FocusListerer. ItemListener, KeyListener, MouseListener, MouseMotionListener, TextListener, WindowFocusListener, WindowListener) **JDBC:** Introduction To JDBC,JDBC Architecture, Types Of JDBC Drivers & Differences, Common JDBC Components, Importing Packages, Registering JDBC Drivers, Opening Connection, Connecting a Java program to a Database, Executing Query, Statement Class & Objects, Getting Information from Database, Obtaining Result Set Information, DML Operations through JDBC	**15L**

Textbook:
1.Chapters 6-8, 10, 17, 19-22, Java 2: The Complete Reference - Tata McGraw Hill, Fifth edition.

2.Chapters 2-7, 9, 10, 11, 16, 20, 21, 22 of Programming with Java A primer, by E. Balagurusamy 3rd Edition.

Evaluation Scheme

[A] Evaluation scheme for Theory courses

I. Continuous Assessment (C.A.) - 40 Marks

i) C.A.-I : Test – 20 Marks of 40 mins. duration

ii) C.A.-II : Type Name (Mini Project)

II. Semester End Examination (SEE)- 60 Marks

Course: SBSD207	Course Title:Database Management Systems(Credits :04 Lectures/Week:03)	
	Objectives: ➢ have a broad understanding of database concepts and database management system software ➢ have a high-level understanding of major DBMS components and their function ➢ be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model. ➢ be able to write SQL commands to create tables and indexes, insert / update / delete data, and query data in a relational DBMS. ➢ be able to program a data-intensive application using DBMS APIs. **Outcomes:** This course introduces database design and creation using a DBMS product. Emphasis is on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports, and forms.	
Unit I	**What is database system, purpose of database system** **Data models**-file management systems, hierarchical databases, network databases, Relational data model **Codd's 12 rules** **ER Diagrams** **Data Integrity**-What is data integrity, simple validity checking, integrity constraints, referential integrity. Keys,Functional Dependencies, Normalization(1NF,2NF,3NF)	**15L**
Unit II:	**Introduction to Relational Algebra and Calculus, Simple SQL Queries**–DDL,creating a table, drop a table, alter table, table aliases Database updates-insert, update, delete, adding data to the database, deleting data from the database, modifying data in the database Select statement, FROM clause, duplicate rows(DISTINCT), row selection, search conditions, sorting query results, Pre-defined functions, group by & order by queries	**15L**
Unit –III	**Constraints, Views and SQL:** What is constraints, types of constrains, Integrity constraints, Views: Introduction to	**15L**

	views, data independence, updates on views, comparison between tables and views SQL, Null Values, **Subqueries:** Single Row & Multiple Row Subquery, Joined relations. Triggers.	
Unit IV:	**Transaction management and Concurrency control:** Transactionmanagement: ACID properties, serializability and concurrency control, Lock based concurrency control (2PL, Deadlocks),Time stamping methods, optimistic methods, database recovery management.	**15L**

Textbook:
1. A Silberschatz, H Korth, S Sudarshan, "Database System and Concepts", fifth Edition McGrawHill
2. Rob, Coronel, "Database Systems", Seventh Edition
3. An introduction to Database systems-C.J.Date

Evaluation Scheme

[A] Evaluation scheme for Theory courses

I. Continuous Assessment (C.A.) - 40 Marks

i) C.A.-I : Test – 20 Marks of 40 mins. duration

ii) C.A.-II : Type Name (Problem Solving)

II. Semester End Examination (SEE)- 60 Marks

Course:	Modern Operating Systems Practical (Credits : 1.5 Practicals/Week: 01)
SBSD204PR	1. Installation of virtual machine software
	2. Installation of Linux operating system (RedHat / Ubuntu) on virtual machine.
	3. Installation of Windows operating system on virtial machine.
	4. (a) pwd, cd, absolute and relative paths, ls, mkdir, rmdir
	(b) file, touch, rm, cp. mv, rename, head, tail, cat, tac, more, less, strings, chmod
	5. (a) ps, top, kill, pkill, bg, fg
	(b) grep, locate, find, locate.
	(c) date, cal, uptime, w, whoami, finger, uname, man, df, du, free, whereis, which.
	(d) Compression: tar, gzip.
	6. (a) Date, time, prompt, md, cd, rd, path.
	(b) Chkdsk, copy, xcopy, format, fidsk, cls, defrag, del, move.
	7. (a) Diskcomp, diskcopy, diskpart, doskey, echo
	(b) Edit, fc, find, rename, set, type, ver
	8. (a) Notepad
	(b) Wordpad
	(c) Paint
	(d) Taskbar
	(e) Adjusting display resolution
	(f) Using the browsers
	(g) Configuring simple networking,Creating users and shares
	9. (a) The vi editor
	(b) Graphics
	(c) Terminal
	(d) Adjusting display resolution
	(e) Using the browsers
	(f) Configuring simple networking
	(g) Creating users and shares
	10. Installing utility software on Linux and Windows

Evaluation Scheme

[B] Evaluation scheme for Practical courses

I. PEC(Test) -20Marks

II. Practical Exam (30 Marks)

Course: SBSD205PR	Practical Title: Computational Mathematics Practical (Credits : 1.5 Practicals/Week: 01)

	1. Using R Execute the statistical functions: mean, median, mode, quartiles, range, inter quartile range, standard deviation, variance, co-variance, histogram
	2. Using R import the data from Excel / .CSV file and perform the above functions.
	3. Program to calculate the roots of a quadratic equation using the formula.
	4. Program to evaluate e^x using infinite series.
	5. **Solution of algebraic and transcendental equations:**
	    a. Program to solve algebraic and transcendental equation by bisection method.
	    b. Program to solve algebraic and transcendental equation by false position method.
	    c. Program to solve algebraic and transcendental equation by Newton Raphsonmethod.
	6. **Interpolation**
	    a. Program for Newton's forward interpolation.
	    b. Program for Newton's backward interpolation.
	    c. Program for Lagrange's interpolation
	7. **Regression**
	    a. Program for Linear regression.
	    b. Program for Polynomial Regression.
	8. Program for linear regression.
	9. **Random variables and distributions**
	    a. Program to generate random variables.
	    b. Program to fit binomial distribution.
	    c. Program to fit Poisson distribution

Evaluation Scheme

[B] Evaluation scheme for Practical courses

I. PEC(Test) -20Marks

II. Practical Exam (30 Marks)

Course: SBSD206PR	Practical TitleCore Java (Credits : 1.5 Practicals/Week: 01)
	1. Write a Java program to create a Java class : (a) without instance variables and methods, (b) with instance variables and without methods, (c) without instance variables and with methods. (d) with instance variables and methods.
	2. Write a Java program that illustrates the concepts of selection statement, looping, nested loops, breaking out of loop.
	3. Write a Java Program that illustrates the concepts of one, two dimension arrays and strings.
	4. Write a Java program that illustrates the concepts of Java class that includes (a) constructor with and without parameters, (b) Overloading methods, (c) Overriding methods.
	5. Write a Java program to demonstrate inheritance by creating suitable classes.
	6. Create a Java package, interface and implement in Java program.
	7. Practicals on Collection Framework
	8. Practicals on thread Programming
	9. Write a program that illustrates the error handling using exception handling.
	10. Write a program that illustrates the concepts of stream classes.
	11. Write a Java applet to demonstrate graphics, font and Color classes.
	12. Write a Java program to illustrate AWT package, Event classes and listeners.
	13. Practicals on JDBC

Evaluation Scheme

[B] Evaluation scheme for Practical courses

I. PEC(Test) -20Marks

II. Practical Exam (30 Marks)

Course: SBSD207PR	Practical Title: Database Management System (Credits : 1.5 Practicals/We 01)

	1. To create a table and insert 5 meaningful records.
	2. Design a Database and create required tables. For e.g. Bank, College Database.
	3. ALTER,UPDATE and DELETE statements
	4. Apply the constraints like Primary Key, Foreign key, NULL & Check constraint.
	5. To learn how to use GRANT and REVOKE in MySQL.
	6. Write the query for implementing the following functions:
	    i. Numeric function.
	    ii. Character function.
	    iii. Date function.
	7. Write the queries to implement the joins.
	8. Write the queries to using operators.
	9. Create views.
	10. Demonstrate Sub queries.

Evaluation Scheme

[B] Evaluation scheme for Practical courses

I. PEC(Test) -20Marks

II. Practical Exam (30 Marks)

JAI HIND COLLEGE

BASANTSING INSTITUTE OF SCIENCE & J. T. LALVANI COLLEGE OF COMMERCE.
MUMBAI-400020.

Class: Paper-

Subject: **Time**:

Day & Date: **Total Marks :60**

PLEASE READ CAREFULLY THE WARNING PRINTED ON THE ANSWER BOOK IN
CONNECTION WITH THE USE TO UNFAIR MEANS.

General Instructions:-   1. All questions are Compulsory

2. Numbers to the right indicate maximum marks

3. Answers to the sub-questions of the same question must be written together.

4. Each question carries 5 marks.

Q1)	**Answer two of the following questions (Based on Unit 1)**	**(10 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)
Q2)	**Answer two of the following questions (Based on Unit 2)**	**(10 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)
Q3)	**Answer two of the following questions (Based on Unit 3)**	**(10 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)
Q4)	**Answer two of the following questions (Based on Unit 4)**	**(10 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)
	……P.T.O	

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Q5)	Answer <u>four</u> of the following questions (Based on all units)	(20 marks)
1)		(5)
2)		(5)
3)		(5)
4)		(5)
5)		(5)
6)		(5)
7)		(5)
8)		(5)

JAI HIND COLLEGE

BASANTSING INSTITUTE OF SCIENCE & J. T. LALVANI COLLEGE OF COMMERCE.

MUMBAI 400020.

CLASS: **TIME:**

SUBJECT: **DATE:**

SEMESTER II PRACTICAL EXAMINATION

Examination Total 50 Marks:

1) Practical Examination – 30 Marks

1)	a) Questions on Practical programs	(10 marks)
	b) Questions on Practical programs	(10 marks)
	c) Journal	(5 marks)
	d) Viva	(5 marks)

2) Internal Examination- 20 Marks

2)	a) Practical Programs/case study	(10 marks)
	b) Practical Programs/case study	(10 marks)
	OR	
	a) Mini Project	(20 Marks)