Annexure D-2

FACULTY OF COMPUTER SCIENCE & IT

SYLLABUS

of

Bachelor of Science (Information Technology)

(Semester III-IV)

(Under Credit Based Continuous Evaluation Grading System)

Batch: 2023-26 Session: 2024-25



The Heritage Institution

KANYA MAHA VIDYALAYA JALANDHAR (Autonomous)

Program Specific Outcomes

Bachelor of Science (Information Technology) (Session 2024-25)

After completing this program, the students will be able to:

PSO1: Apply skills for development of software and websites for providing efficient solution to IT based problems.

PSO2: Comprehend development process in IT industry through ethical, defined and innovative techniques.

PS03: Achieve leadership role and team player role to be able to work in multidisciplinary areas at various job roles.

PSO4: Identify and demonstrate the implementation of various tools and technologies involved in the field of Information Technology.

PSO5: Demonstrate proficiency in the field of Programming, Web development and IT enabled services.

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE YEAR DEGREE PROGRAMME Bachelor of Science (Information Technology)

Credit Based Continuous Evaluation Grading System (CBCEGS) Session 2024-25

Bachelor of Science (Information Technology) Semester - III										
Course Code	Course Title	Cour se Type	Hours per week L-T-P	Credit		Marks				Examinati
				I T D	T ()	Total	Ext.			on Time
				L-T-P	Total		L	Р	CA	
BITL-3111	Computational Problem Solving	С	4-0-0	4-0-0	4	100	80	-	20	3
BITL-3112	Advanced Database Management System	С	4-0-0	4-0-0	4	100	80	-	20	3
BITL-3113	System Analysis and Design	С	4-0-0	4-0-0	4	100	80	-	20	3
BITL-3114	Numerical Methods and Statistical Techniques	C	4-0-0	4-0-0	4	100	80	-	20	3
BITP-3115	Lab on Computational Problem solving	C	0-0-4	0-0-2	2	50	-	40	10	3
BITP-3116	Lab on Advanced Database Management System	С	0-0-4	0-0-2	2	50	-	40	10	3
AECE-2221	*Environment al Studies (Compulsory)	AC	1-0-2	1-0-1	2	50	30	10	10	3+3
SECP - 3512	* Personality Development	AC	2-0-0	2-0-0	2	50	40	-	10	3
	Total				24	600				

Note:

C – **Compulsory**

AC- Audit Course

* Marks of these courses will not be added in total marks and only grades will be provided

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE-YEAR DEGREE PROGRAMME Bachelor of Science (Information Technology)

Bachelor of Science (Information Technology) Semester - IV										
Course Code	Course Title	Cour se Type	Hours per week	Credit		Marks				Examinatio
			L-T-P	L-T-P	Total	Total	Ext.			n Time
							L	Р	CA	(III Hours)
BITL-4111	Internet Applications	С	4-0-0	4-0-0	4	100	80	-	20	3
BITL-4112	Applied and Discrete Structures	С	4-0-0	4-0-0	4	100	80	-	20	3
BITL-4113	Object Oriented Programming- II	С	4-0-0	4-0-0	4	100	80	-	20	3
BITL-4114	E-Business	С	4-0-0	4-0-0	4	100	80	-	20	3
BITP-4115	Lab on Internet Applications	С	0-0-4	0-0-2	2	50	-	40	10	3
BITP-4116	Lab on Object Oriented Programming - II	С	0-0-4	0-0-2	2	50	-	40	10	3
SECS - 4522	*Social Outreach	AC	2-0-0	2-0-0	2	50	-	40	10	1
	Total				22	550				

Credit Based Continuous Evaluation Grading System (CBCEGS) Session 2024-25

Note:

C – **Compulsory**

AC- Audit Course

* Marks of these courses will not be added in total marks and only grades will be provided

Session 2024-25 COURSE CODE: BITL–3111 COMPUTATIONAL PROBLEM SOLVING

Course Outcomes:

After passing course the student will be able to:

CO1: Comprehend basics of Python programming like operators, data types, control structures, etc.

CO2: Apply list and directories for handling and accessing data through iterations.

CO3: Implement various built-in and user defined function to solve mathematical problems.

CO4: Comprehend Object Oriented Programming and modules in Python.

Session 2024-25 COURSE CODE: BITL–3111 COMPUTATIONAL PROBLEM SOLVING

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (16 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT- I

Introduction to Problem solving using Python: Process of Computational Problem Solving, Python Programming Language.

Data and Expressions: Literals, Variables and Identifiers, Operators, Expressions, Statements and Data Types.

Control Structures: Boolean Expressions (Conditions), Logical Operators, Selection Control, Nested conditions, Debugging.

UNIT-II

Lists: List Structures, Lists (Sequences) in Python, Iterating Over Lists (Sequences) in Python.

Iteration: While statement, Definite loops using For, Loop Patterns, Recursive Functions, Recursive Problem Solving, Iteration vs. Recursion.

Dictionaries: Dictionaries and Files, Looping and dictionaries, Advanced text parsing.

UNIT-III

Functions: Fundamental Concepts, Program Routines, Flow of Execution, Parameters & Arguments.

Files: Opening Files, Using Text Files, String Processing, Exception Handling.

UNIT-IV

Objects and Their Use: Introduction to Object Oriented Programming.

Modular Design: Modules, Top-Down Design, Python Modules.

Using Databases and SQL: Database Concepts, SQLite Manager Firefox Add-on, SQL basic summary, Basic Data modeling, Programming with multiple tables.

References/Textbooks:

1. Charles Severance, Python for Informatics, Version 0.0.7.

2. Charles Dierbach, Introduction to Computer Science Using Python: A Computational Problem-Solving Focus, Wiley Publications, 2012.

3. Guttag John V, Introduction To Computation And Programming Using Python, PHI, 2014.

4. Jeeva Jose and Sojan P. Lal, Introduction to Computating& Problem Solving Through Python, Khanna Publishers, 2015.

5. Mark J. Guzdial, Introduction to Computing and Programming in Python, Pearson Education, 2015.

6. Kenneth Lambert, Fundamentals of Python, Course Technology, Cengage Learning, 2015

7. Mark Lutz, Learning Python, O'Reilly Media, 2013

Note: The latest editions of the books should be followed.

Session 2024-25 COURSE CODE: BITL–3112 ADVANCED DATABASE MANAGEMENT SYSTEM

Course Outcomes:

After passing course the student will be able to:

CO1: Gain knowledge of transaction management and Concurrency control.

CO2: Create, manage and access database using PL/SQL.

CO3: Create and manage database using NoSQL

CO4: Comprehend the implementation of queries using MongoDB

Session 2024-25 COURSE CODE: BITL–3112 ADVANCED DATABASE MANAGEMENT SYSTEM

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (16 Marks each) are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT-I

SQL: Join methods & sub query, Union, Intersection, Minus, Indexes, Views.

Transaction Management-ACID Properties, Concurrency Control, Security amongst users.

UNIT-II

PL/SQL: Introduction, advantages and limitations, block structure, constant and variables, input and output, control statements, data-types. Triggers, functions and procedures, cursors, packages, exceptions.

Big Data: Meaning, Characteristics, Benefits, CAP Theorem

UNIT III

NoSQL: Overview, Need of NoSQL, Structured Data Vs. Unstructured Data, Types of Database in NoSQL, Features of NoSQL, Advantages of NoSQL, Eventual Consistency, ACID vs BASE Properties.

MongoDB: Overview, Install MongoDB server, Environment, Create Database, Data Model, Collection (Creation and Deletion), Data types in MongoDB, CRUD: Create, Update, Delete And Query Database.

UNIT IV

SQL to MongoDB Mapping, Projection. Sorting, Limiting and Counting records. Indexes in MongoDB: Creation of Index, Options, Dropping and fetching of Index. Analyze Query

performance, Plan and Profiler. MongoDB Aggregation Query: Aggregate Framework (sum, avg, min, max, push, first, etc). Replication and Sharding, MapReduce Function. Creating database backup.

Reference/ Textbooks:

- 1. C.J. Date, An Introduction to Database Systems, Pearson Education 2000.
- 2. H. F. Korth&Silverschatz, A., Database System Concepts, Tata McGraw Hill, 2010.
- 3. Elmasri&Navathe, Fundamentals of Database Systems, Addison-Wesley, 2011.
- 4. Hoffer, Prescott, Mcfadden, Modern Database Management, Paperback International, 2012.
- 5. Adam Fowler, "NoSQL For Dummies", Wiley, First Edition, 2015.
- 6. Gerardus Blokdyk, "NoSQL A Complete Guide", 5STARCooks, Second Edition, 2021.

Note: The latest editions of the books should be followed.

Session 2024-25 COURSE CODE: BITL–3113 SYSTEM ANALAYSIS AND DESIGN

Course Outcomes:

After passing course the student will be able to:

CO1: Gather data to analyze and specify the requirements of a system.

CO2: Comprehend various system analysis and design processes.

CO3: Identify different types of testing and involved documentation.

CO4: Comprehend implementation of system along with its maintenance.

Session 2024-25

COURSE CODE: BITL-3113 SYSTEM ANALYSIS AND DESIGN

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (16 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT-I

System Planning and Analysis: Introducing System Analysis and Design, SA&D Concepts, Qualifications and Responsibilities of System Analyst as an agent of change, Systems development life cycle and role of different stages Determining Feasibility, types of feasibility, Feasibility Study.

Information Requirements analysis: Sampling and investigating data through Interviews and Questionnaires, use of Structured English, Decision tables.

UNIT-II

System Analysis Process: Using data flow diagrams, data dictionaries, describing Process specifications and system proposal

System Design: Architectural Design, User Interface Design, Data Design, Module specifications, Module coupling and cohesion, Top-down and bottom-up design,

UNIT-III

Tools for Structured design and System design considerations.

System Development and Testing: Introduction to testing and its types, Types of Documentation and Documentation Tools.

UNIT-IV

System Implementation: Quality Assurance, Managing system implementation, Transition to new system. Different modes for training users.

System Maintenance: Concept of maintenance and its importance, compare and contrast different types of maintenance.

References/Textbooks:

- 1. Marvin R. Gore and John W. Stubbe, Elements of System Analysis, Dubuque, Iowa Wm.C. Brown 1988.
- 2. Thapliyal M.P., System Analysis and Design, JBD Publisher, 2002.
- 3. Hoffer, Modern Systems Analysis and Design, George and Valacich, Pearson, 2014.
- 4. Dorny C. Nelson, Understanding Dynamic System: Approaches to Modelling, Analysis and Design, Pearson, 1993.
- 5. Perry Edwards, System Analysis and Design, McGraw-Hill, 1993.
- 6. Elias M. Awad, System Analysis and Design, Galgotia Publications, 1997.
- 7. James A. Senn, Analysis and Design of Information Systems, McGraw-Hill, 1989.
- 8. Silver and Silver, System Analysis and Design, Addison Wesley, Last Edition

Note: The latest editions of the books should be followed.

(Session 2024-25) COURSE CODE: BCAL–3114 NUMERICAL METHODS AND STATISTICAL TECHNIQUES

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Course Outcomes:

After the completion of this course, the student will be able to:

CO1: Solve non-linear and linear equations using different methods.

CO2: Comprehend interpolation and numerical integration.

CO3: Calculate different means and deviations using statistical techniques.

CO4: Comprehend correlation, curve fitting and regression for finding solutions to various statistical problems

(Session 2024-25) COURSE CODE: BCAL–3114 NUMERICAL METHODS AND STATISTICAL TECHNIQUES

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (16 marks each) are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Students can use non-storage and non-programmable scientific calculator.

UNIT-I

Introduction: Numerical Methods, Numerical methods versus numerical analysis, Types of Error, Errors and Measures of Errors.

Non-linear Equations: Bisection Method and Newton Raphson's Method

Linear Equations: Gauss Elimination Method, Gauss Jordan Method.

UNIT-II

Interpolation: Newton's Methods: Forward Difference Method, Backward Difference Method, and Divided Difference Method.

Numerical Integration: Trapezoidal Rule, Simpson's 1/3 method and Simpson's 3/8 Method

UNIT-III

Statistical Techniques:

Measure of Central Tendency: Arithmetic mean, Median, Mode. **Measures of dispersion:** Range, Quartile Deviation, Mean deviation, Standard deviation, Co– efficient of variation.

UNIT –IV

Correlation: Introduction, Karl Pearson's Coefficient of Correlation, Rank Correlation method

Regression: Regression line and regression equations, Regression Coefficient

Non Linear Curve Fitting: Fit a quadratic or polynomial equation, Fit an exponential curve,

References / Textbooks:

- 1. Amrinder Pal Sngh, Jaspal Singh, Anshuman Sharma, Fundamentals Of Numerical Methods And Statistical Techniques, Lakhanpal Publishers, 4th edition.
- 2. Kandasamy P.& et AI., Numerical Methods, S. Chand & Company (2006), Reprint Edn. 2006 Edition.
- 3. B.S. Grewal, Numerical Methods in Engineering & Science, Khanna Publishers (2013), 11th Edition.
- 4. E. Balagurusamy, Numerical Methods, Tata McGraw Hill Education (2017)
- 5. H.S.G. Rao, Numerical Methods, IK International Publishing House (2011)
- 6. S.S. Sastry, Introductory methods of Numerical Analysis, PHI (2012), 5th Edition

Session 2024-25

COURSE CODE: BITP-3115 LAB ON COMPUTATIONAL PROBLEM SOLVING

L-T-P: 0-0-2 Credits: 2 Max. Marks: 50 Practical: 40 CA: 10

Lab–I: Lab on computational problem solving.

Session 2024-25

COURSE CODE: BITP-3116 LAB ON ADVANCED DATABASE MANAGEMENT SYSTEM

L-T-P: 0-0-2 Credits: 2 Max. Marks: 50 Practical: 40 CA: 10

Lab based on Advanced Database Management System

COURSE CODE: BITL-4111

INTERNET APPLICATIONS

Course Outcomes:

After passing course the student will be able to:

CO1: Comprehend basics of internet and email along with their effective use.

CO2: Apply HTML for development of static webpages.

CO3: Implement styling and behavior in webpages through the use of CSS.

CO4: Create and manage websites through the application of WordPress content management system.

COURSE CODE: BITL-4111

INTERNET APPLICATIONS

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (12 marks each) are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT-I

Internet: Introduction, working, applications, DNS, IP addresses, Search engine and its working. File Transfer Protocol (FTP), Telnet, HTTP, WWW and its working.

E-Mail Basics: Introduction, Advantage and disadvantage, protocols and structure of an e-mail message, working of e-mail (sending and receiving messages).

UNIT-II

HTML: Introduction, Features, Program Structure, Headings, Paragraph, Styling, Formatting, Hyperlinks, Image, Table, List, Frame, Block, Entities, Form, Form elements, Audio, Video, Embed YouTube Video.

UNIT-III

CSS: Introduction, Advantages and Limitations, types, selector, colors, background, box model, text, font, display, position, z-index, float, clear, rounded corners, 2D Transformations, Transitions and Animations.

UNIT-IV

WordPress: Installation, Configuration, Management - Managing Posts, comments, pages, categories, Plugins, Widgets, Tags, images, users, Import and export content, Updating WordPress. Useful Plugins – MailChimp, Creating Gallery, Stripe Checkout, Verified Authorship, Google Maps, Google Analytics.

References / Textbooks:

- 1. Anshuman Sharma, Fundamentals of Internaet Applications, Lakhanpal Publications, 2016.
- Ikvinderpal Singh, Internet Applications, Khanna Book Publishing Company, 1st Edition, 2011
- 3. P. Rizwan Ahmed, Internet & its Applications, Margham Publications, 2013.
- 4. Douglas E. Corner, Computer Networks and Internet with Internet Applications, Pearson, 4th Edition, 2008.
- 5. Satish Jain/Vineeta Pillai, Wireless Communication & Networking made Simple, BPB Publishers, 2007.
- 6. Laura Lerney, Rafe Colburn, Jennifer Kyrnin, Mastering HTML, CSS & Javascript Web Publishing, BPB Publishers, 1st Edition, 2016.
- 7. Lisa Sabin-Wilson, WordPress for Dummies, Wiley, 8th Edition, 2021.

Session 2024-25 COURSE CODE: BITL-4112 APPLIED AND DISCRETE STRUCTURES

Course Outcomes:

After passing course the student will be able to:

- CO1: Have knowledge of matrices, sets, relations, propositional logic.
- CO2: Have knowledge of Boolean algebra.

CO 3: represents world knowledge in symbolic notation through propositional calculus.

CO 4: Apply discrete mathematical concepts to obtain analytical and numerical solutions.

Session 2024-25 COURSE CODE: BITL-4112 APPLIED AND DISCRETE STRUCTURES

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (16 Marks each) are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT-I

Sets: Definition of sets, subsets, complement of a set, universal set, intersection and union of sets, De-Morgan's laws, Cartesian products, Equivalent sets, Countable and uncountable sets, minset, Partitions of sets.

UNIT-II

Relations: Basic definitions, domain and range of relations, graphs of relations, properties of relations, composition of relation.

Functions: Basic definitions, domain, co-domain and range of functions, types of functions, inverse of a function, composition of function.

UNIT-III

Logic and Propositional Calculus: Proposition and Compound Propositions, basic Logical Operations, Propositions and Truth Tables, Tautologies and Contradictions, Logical Equivalence, Duality law, Algebra of propositions, Conditional and Bi conditional Statements, Arguments, Logical Implication, Propositional Functions, Predicates and Quantifiers, Negation of Quantified Statements, Inference theory of the predicates calculus.

UNIT IV

Matrices: Introduction of a Matrix, its different kinds, matrix addition and scalar multiplication, multiplication of matrices, transpose etc. Square matrices, inverse and rank of a square matrix, properties of determinant, Matrix Inversion method.

References/Textbooks:

- 1.Seymour Lipschutz, Marc Lars Lipson, Discrete Mathematics (Schaum's outlines Series), McGraw-Hill, 1997.
- 2.Bernard Kolman, Robert C. Busby, Discrete Mathematical structures for Computer Science, Prentice-Hall, 1984.

- 3.Alan Doerr, Kenneth Levasseur, Applied Discrete Structures for Computer Science, Galgotia Publications, 1989.
- 4.J.P.Tremblay. and R Manohar, Discrete Mathematical Structures with Applications to Computer Science, McGraw-Hill, 1997.

Note: The latest editions of the books should be followed.

COURSE CODE: BITL-4113 OBJECT ORIENTED PROGRAMMING- II

Course Outcomes:

After passing this course the student will be able to:

- CO1: Understand the basic fundamentals of Object Oriented Programming using Java.
- CO2: Identify the use of inheritance, interfaces and packages in Java.
- CO3: Identify the utilization of multithreading and Exception handling.
- CO4: Connect Java application with an existing database and access it through JDBC.

(Session 2024-25)

COURSE CODE: BITL-4113

OBJECT ORIENTED PROGRAMMING- II

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (16 marks each) are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT - I

JAVA BASICS: Introduction to Java, Features of Java, Structure of a Java Program, primitive

data types, keywords, Identifiers, literals, operators and comments.

OOPS: Object oriented concepts Advantage of OOPs, Objects and Classes,

Strings: Declaring a string, Immutable string, string comparison, concatenation, substring, string tokenizer.

UNIT - II

Inheritance: what is inheritance, types of inheritance, static import, Method overloading, method overriding, Runtime polymorphism, super keyword, final keyword

Interfaces: Abstract classes, declaring an interface, relationship between classes and interface,

interface inheritance, implementing multiple inheritance using interface

Packages: what are packages, advantages of using packages, accessing package from another package, subpackaging, running packages by setting path and classpath.

UNIT - III

Exception Handling: what is exception handling, checked and unchecked exceptions, trycatch, try-multiple catch, try – finally, throw and throws

Multithreading: What is a thread, life cycle of a thread, creating a thread, sleeping a thread, joining a thread, thread priority

UNIT - IV

Input/Output: File input stream, File output stream, Buffered output stream, Buffered input

stream.

Database connectivity: JDBC, JDBC drivers, steps to connect to the database, connectivity with MYsql.

References/Textbooks:

- 1. HurbertSchildt, Java The Complete Reference, Tata McGraw Hill, 2014.
- 2. Y. Daniel Liang, Introduction to Java Programming, Pearsons Publications, 2015.
- 3. Jon Duckett, Beginning Web Programming with HTML, XHTML, and CSS, John Wiley & Sons, 2004.
- 4. Thomas A. Powell, HTML & CSS: The Complete Reference, McGraw-Hill, 2010.

Note: The latest editions of the books should be followed.

COURSE CODE: BITL-4114

E-BUSINESS

Course Outcomes:

After passing this course student will be able to:

CO1: Comprehend the basic terms of E-Commerce, aims, benefits and E-Commerce models.

CO2: Acquaint about the working and components of EDI.

CO3: Identify Electronic Payment systems, various issues involved in relation to secure electronic transactions and various E-Payment options.

CO4: Comprehend BPR and Case Studies of E-Business related applications.

COURSE CODE: BITL-4114

E-BUSINESS

L-T-P: 4-0-0 Credits: 4 Examination Time: 3 Hours. Max. Marks: 100 Theory: 80 CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (16 marks each) are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT – I

Introduction to E – Commerce: Meaning and Concept, Features, Benefits, E-Commerce v/s. Traditional Commerce. E-Commerce Framework, VAN and EDI as Promoters. E-Commerce Models.

Steps involved in opening your own online business, Role of Website and the technologies needed to build a website.

UNIT - II

EDI: EDI Vs Traditional Systems, components and working of EDI system, EDI implementation issues, Factors for successful EDI Implementation, EDI service providers in India.

UNIT – III

Concerns for E – Commerce: Legal and regulatory issues, Laws for E – Commerce, E-Commerce in India, Sections of IT Act for E-Commerce transactions.

Electronic Payment Systems: Various Methods of Electronic Payments – Google pay, Paytm, Debit and Credit Cards, UPI. E-Commerce security Issues and Measures.

$\mathbf{UNIT} - \mathbf{IV}$

Re – Engineering for Change: Business process re – engineering (BPR), Methodology and Planning Methods for change.

Case Studies: To demonstrate usefulness of E – Commerce in various business areas like Banks, Reservations, E–Governance and E-Retailing.

References / Textbooks:

- Chaffey, E-Business and E-Commerce Managemet: strategy, Implementation and Practice, Pearson Education India (2013), 5th Edition
- Kenneth C. Laudon and Carol Guercio Traver, E-Commerce, Pearson (2018), 13th Edition
- S.J. P.t. Joseph, E-Commerce: An Indian Prespective, PHI Learning Pvt. Ltd. (2019), 6th Revised Edition
- 4. Shruti Mathur, Ecommerce, Pinnacle Learning (2020)
- David Whiteley, E-Commerce: Strategy, Technologies and Applications, McGraw Hill Education (2017).
- 6. Nidhi Dhawan, A handbook of E-Commerce, Sun India Publications (2017)
- Laudon, Kenneth C and Carol Guercio Traver, E–Commerce business. Technology Pearson Education Delhi (2011).

COURSE CODE: BITP-4115

LAB ON INTERNET APPLICATIONS

L-T-P: 0-0-2 Credits: 2 Max. Marks: 50 Practical: 40 CA: 10

Lab on Internet Applications.

COURSE CODE: BITP-4116

LABON OBJECT ORIENTED PROGRAMMING- II

L-T-P: 0-0-2 Credits: 2 Max. Marks: 50 Practical: 40 CA: 10

Lab on Object Oriented Programming - II.