DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO.SU/Commerce & Management/ III Sem./50/2019

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Commerce & Management, the Hon'ble Vice-Chancellor in his emergency powers under Section-12(7) of the Maharashtra Public Universities Act, 2016 has accepted the syllabi of **B.Com., BBA & BCA III Sem.** under Choice Based Credit and Grading System on behalf of the Academic Council to be applied from the Academic Year 2019-2020 and onwards. The said syllabi are uploaded on bamu.ac.in at University website.

All concerned are requested to note the contents of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF.NO. SU/ COMMERCE/2018-19
25445-844
Date:- 31-05-2019.

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Deputy Registrar,
Syllabus Section.

Copy forwarded with compliments to :-

1] The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.

2] The Director, University Network & Information Centre, UNIC, with **a request to upload this Circular along with the said syllabi on University Website.**

Copy to :-

1] The Director, Board of Examination & Evaluation,
2] The Section Officer, [B.Com. Unit] Examination Branch,
3] The Programmer [Computer Unit-1] Examinations,
4] The Programmer [Computer Unit-2] Examinations,
5] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambekar Marathwada University.
6] The Public Relation Officer,
7] The Record Keeper.

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

Curriculum of

BACHELOR OF COMPUTER APPLICATION

(BCA)

IIND YEAR

THIRD SEMESTER

under Choice Based Credit & Grading System

[Effective from the Academic Year 2019-20 & onwards]

17/6/19 17/6/19 17/6/19

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

FACULTY OF COMMERCE & MANAGEMENT.

Syllabus - Bachelor of Computer Application (BCA)

Choice Based Credit System (CBCS) - 2019-20

Semester & Credits	**Core Course [04]**	**Ability Enhancement Compulsory Courses [AEC] [01]**	**Discipline Specific Elective [DSE] [01]**
III Credit 24	1. Principle of Management 2. OPPS using C^{++} 3. Business Law – I 4. DBMS	1. E-Business Essential	Elective Paper [Any One] 1.Data Structure & Algorithm 2. RDBMS using ORACLE
Total Credits 24	**No. of Credits : 16**	**No. of Credits :04**	**No. of Credits : 04**

17/6/19 17/6 17/6/19

Structure of B. C. A. Third Semester

Choice Based Credit Grading System (CBCS) 2019 - 2020

Paper Number	Subject/ Title of the Paper	Course	Weekly		Credits		IA	UA	Total Marks	Duration of Theory Exam
			Th	Pr	Th	Pr				
XIII	Principles of Management	Core Course	4	-	4	-	20	80	100	3 Hrs
XIV	OPPS using C^{++}	Core Course	2	2	2	2	50	50	100	2 Hrs
XV	Business Law – I	Core Course	4	-	4	-	20	80	100	3 Hrs
XVI	DBMS	Core Course	4	-	4	-	20	80	100	3 Hrs
XVII	E-Business Essential	Ability Enhancement Compulsory	4	-	4	-	20	80	100	3 Hrs
XVIII	1.Data Structure and Algorithm 2.RDBMS using ORACLE	Discipline Specific Elective [Any One]	2	2	2	2	50	50	100	2 Hrs
	Total		**20**	**4**	**20 + 4 =24**		**120**	**480**	**600**	- -

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B.C.A. III[rd] Semester Syllabus (CBCS)
Paper No. XIII – Principles of Management

Theory – 80 Marks
Sessional – 20 Marks

		No. of Lectures
Unit - 1	**Introduction of Management :** Introduction, Meaning and concept of management, nature, scope, characteristics and importance of management, role and functions of management, level of management, difference between management and administration, brief review of management thoughts of F. W. Taylor, Henry Fayol, Elton Mayo, Peter Drucker etc.	**(12)**
Unit – II	**Managerial Planning and Decision Making :** **Planning:** meaning and definition, characteristics and importance of planning, planning process, benefits of ideal planning, limitations of planning, types of plans. **Forecasting:** meaning and definition, methods of forecasting. **Decision making**: meaning and definition, types of decisions, decision making process	**(12)**
Unit - III	**Staffing and Organization :** **Staffing:** meaning and definition of staffing, need and importance of staffing, Recruitment: meaning, definition, process, and methods of recruitment, Selection: meaning, definition, selection procedure and training of personnel **Organization:** meaning, definition and importance of organization, principles of organization, types of organization, difference between accountability and responsibility, centralization of Authority and decentralization of Authority.	**(12)**
Unit - IV	**Directing and Controlling :** **Directing:** meaning, definition and importance of directing, principles and techniques of directing **Controlling:** meaning, definition, need and importance of control, process of control, techniques of control	**(12)**
Unit - V	**Recent Trends in Business Management:** Change management, disaster management, TQM, Bench Marking, Six Sigma, **Management development:** meaning, definition, need and importance, management development process, methods and techniques **Practical: 20 Marks (to be conducted by the department in each college as per convenience)** 1. Test- 05 2. Tutorial- 10 3. Seminar- 05	**(12)**

Reference Books :

1. Principles of management by Dr. K.Natarajan and Dr.K.PGanesan
2. Principles of management by P.Subbarao
3. Principles of management by B.P.Singh / Dr.TRamaswamy
4. Principles & Practice - T N Chhabra, Dhanapat Rai &Co.of Management.
5. Management – LM .Prasad.
6. Makers of Modern India - NBT Publication.
7. Principles and practice of management by Saxsena S. C.

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B.C.A. III[rd] Semester Syllabus (CBCS)
Paper No. XIV – OPPS using C[++]

Theory – 50 Marks
Sessional – 50 Marks

		No. of Lectures
Unit - 1	**Introduction to C++ :** Basic concepts, object oriented programming Class, Object, Data Abstraction, benefits & applications of OOP, Structure of C++ program, Creating a source file, compiling and Linking, Tokens, Expressions and Control structures: Introduction, Tokens, keywords, Identifiers and constants, Data types - Basic, User defined and Derived, Symbolic constant, Type Compatibility, Variables - Declaration and Dynamic initialization, Reference variable, Operators in C++, Scope resolution operator, Member Referencing operators, Memory management operators, Manipulators, Type cast operators, Expression and their types, Special Assignment Expressions, Implicit conversions, Operator overloading introduction, Operator precedence, Control structures – if-else, do-while, for , switch	**(10)**
Unit – II	**Functions in C++ :** Introduction, The main function, Function prototyping, Call by reference, Return by reference, Inline function – Making an outside function Inline, Arguments - default, constant, Math library functions.	**(08)**
Unit – III	**Classes and Objects :** Introduction, Creating a class and objects, Defining member functions inside and outside class, Nesting of member functions, Private member functions, Arrays within a class, Memory allocation of objects, Static data members and static member functions, Array of objects, Objects as function arguments, Friend functions, Returning objects, Constructors, Types of constructor, Destructors.	**(14)**
Unit – IV	**Inheritance :** Introduction, Base class and derived class examples, Types of Inheritance, Virtual base class, Abstract class, Constructors in derived class.	**(14)**
Unit – V	**Polymorphism :** Compile Time Polymorphism, Function overloading, Operator Overloading Introduction, Overloading unary and binary operator, Overloading using friend function, Overloading insertion and extraction operators, String manipulation using operator overloading, Runtime Polymorphism, pointers to objects, pointer to derived, classes, Virtual functions and pure virtual functions.	**(14)**

Practical's U/A : 50 Marks

1. **One Test** : **10 Marks**
2. **Oral** : **20 Marks**
3. **Writing of Algorithms in Journal / File** : **20 Marks**

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Reference Books :

1. Object oriented programming with C++ - by E Balagurusamy, Tata McGraw-Hill Publishing.
2. Object Oriented Programming with C++ by Robert Lafore, Galgotia
3. Let us C++ Yeshwant Kanetkar, BpB Publications

Practical list for programming in C++

1. Simple C++ Program.
2. Program on Data Types and Operators.
3. Program for Looping and Branching Statement.
4. Program for Reference Variable.
5. Program for Function Overloading.
6. Program for Friend Function and Inline Function.
7. Program for Static Data Member and Function.
8. Program for Operator Overloading.
9. Program for Inheritance.
10. Program for Virtual Function and Classes.

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B.C.A. III[rd] Semester Syllabus (CBCS)
Paper No. XV – Business Laws – I

Theory – 80 Marks
Sessional – 20 Marks

		Periods
Unit - 1	**Indian Contract Act 1872 :** Meaning and Definition of Agreement and Contract, Features of Contract Act, Types of Contract, Essentials of valid contract, Offer and Acceptance, Breach of Contract	**(12)**
Unit – II	**Sell of Goods Act 1930 :** Meaning and Important Definition – Sell of Goods Act, Agreement to sell vs. Contract of sell, Essentials of valid contract of sell, Condition and Warranty, Sell by Auction and Hire Purchase Agreement, Buyers and Sellers Rights and Duties.	**(12)**
Unit - III	**Negotiable Instrument Act 1881 :** Concept and Important definition of Act, Promissory Note and Cheque, Characteristics of the Act, Dishonor of Negotiable Instrument, Discharge of Negotiable Instrument, Bills of Exchange.	**(12)**
Unit - IV	**Consumer Protection Act (Amended Act 2002) :** Meaning and Important Definition 0f Act, Significance of Consumer Protection, Objectives of the Act, Working of Consumer Protection Council, Composition of consumer disputes redressal agencies.	**(12)**
Unit - V	**Cyber and IT Act 2000 :** Important Definition - IT Act 2000, Cyber Fraud and Cyber Cheating, Copy right – Meaning and Definition, License of the Copy Right, Digital Signature, Digital Signature. Certificate.	**(12)**

Sessional Works : 20 Marks

- **College can take decisions accordingly.**

Reference Books:

1. Business Law – Dr. Nowlakha
2. Mercantile Law – N D Kapoor
3. Indian Contract Act – Dr. Avtarsingh
4. Mercantile and Industrial Law – M.C Shulka
5. Business Law – Maheshwar
6. Company and Business Law – Shukla and Gerwal
7. Commercial and Industrial Law – Kuchal
8. Cyber Law Simplified – Tata McGrawhillVivekSood
9. Indian Cyber Law – Suresh T Vishwanathan

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B.C.A. III[rd] Semester Syllabus (CBCS)
Paper No. XVI – DBMS

Theory – 80 Marks
Sessional – 20 Marks

		Periods
Unit - 1	**Introduction (Theory) :** Data, Tables, DBMS, Characteristics of DBMS, need of DBMS, attributes,entity, E-R Diagrams, relationships, ODBMS, Two tier and three tier architecture,	**(10)**
Unit – II	**Transactions (Theory) :** Concept of transaction, ACID properties, Transaction and system concepts, States of transaction, Serializibility, backup and recovery.	**(08)**
Unit - III	**Concurrency (Theory) :** Concurrent trnsactions, Two –phase locking techniques, Concurrency control, Locking techniques, E-R Diagram, Deadlock	**(14)**
Unit - IV	**Normalization (Theory) :** E.F. Codd rules, Normal forms based on primary keys(1 NF, 2 NF, 3 NF, BCNF)	**(14)**
Unit - V	**MS-Access (Theory/ Practical) :** Primary Key, Foreign Key, Creating tables in MS-Access, creating primary key, foreign key and create queries to fetch data.	**(14)**

Sessional Works : 20 Marks

- **College can take decisions accordingly.**

Reference Books :

1. Elmasri&Navathe, Fundamentals of Database systems, Addison &Weisely, New Delhi.
2. H. F. Korth& A. Silverschatz, Database Concepts, Tata McGraw Hill, New Delhi
3. C. J. Date, Database Systems, Prentice Hall of India, New Delhi.
4. Ivan Bayross, SQL,PL/SQL, The programming language of Oracle

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B.C.A. III[rd] Semester Syllabus (CBCS)
Paper No. XVII – E-Business Essential

Theory – 80 Marks
Sessional – 20 Marks

		Periods
Unit - 1	**Introduction to e-business :** Origin, Concept, Nature ,Definition, Features, Merits, Demerits.	**(10)**
Unit – II	**E-business Environment:** Information society, building process for communities, multi – option society, ethics in electronic business.	**(08)**
Unit - III	**E-business & ICT :** Meaning, history, importance of internet, internet v/s online service, basic, knowledge of computer network, world wide web, web page, website.	**(14)**
Unit - IV	**E-Business Models & Supply Chain Management :** Classification of E business models, definition of supply chain management elements of SC, key issues in SCM.	**(14)**
Unit - V	**E-Payments :** E-Money and E-payments, different forms of E-payment, E-banking RTGS, NEFT, EFT, Internet Banking, Mobile Banking, GOOGLE PAY, PAYTM etc.	**(14)**

SESSIONAL WORK: 20 Marks

1) One test 05 marks
2) One tutorial 05 marks
3) Online dummy transactions and list of E-commerce websites 10 Marks

Reference Books :

1) Rayudu cs. E-commerce E-business
2) Ravi Kalakos& Marcia Robinson E-business
3) Rich , joson R starting an e-commerce business
4) Kamlesh Bajaj DebjaniNag , E-Commerce: The cutting Edge of Business Tata McGraw Hill Publication,new Delhi.
5) N.S.Toor ,handbook of Banking Information,28[th]Edition,Skylark Publication New Delhi.

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B.C.A. III[rd] Semester Syllabus (CBCS)
Paper No. XVIII – Data Structure and Algorithm

Theory – 50 Marks
Practical's U/A – 50 Marks

		Periods
Unit - 1	**Introduction to Data Structure :** Introduction to Data Structure : Types , Primitive ,Secondary , Simple Compound , Linear and Non Linear Data Structure	**(10)**
Unit – II	**Linear Data Structure :** Linear Data Structure : Array , Linked List , Queue, Stacks, Operations on linear Data Structure, Memory Representation of Linear Data Structure	**(08)**
Unit - III	**Non Linear Data Structure :** Non Linear Data Structure : Tree , Graphs, Binary Tree Structures , Networks, Operations on Non Linear Data Structure, Implementation of Data Structure in computer memory	**(14)**
Unit - IV	**Algorithms :** Algorithm Concept, Features & Characteristics, Designing of Algorithm for Insertion & Deletion of Records in Array, Linked List, Stack, Queue , Traversal of Linked List, Stack, Queue , Binary Tree	**(14)**
Unit - V	**Graph Theory and Sorting :** Graph Theory : Terminology, Sequential Representation of Graph, Adjacency Matrix , Linked List Representation of Graph, Operations on Graph , Traversing Graph, Bubble Sort , Selection Sort, Merge Sort and Insertion Sort	**(14)**

Practical's U/A : 50 Marks

4. **One Test : 10 Marks**
5. **Oral : 20 Marks**
6. **Writing of Algorithms in Journal / File : 20 Marks**

References Books :

1. Tannenbum : Data Structure
2. Seymour LipSchutz : Data Structure
3. Aho : Data Structure and Algorithm
4. Bhagat Singh & Nap : Data & File Structure.
5. Droomy : How to solve it by Computer.

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Theory – 50 Marks
Practical's U/A – 50 Marks

		Periods
Unit - 1	RDBMS Definition, Characteristics of RDBMS ,Application and advantages of RDBMS, Instances , Schemas and Database States, Three Levels of Architecture , Data Independence, DBMS languages, Data Dictionary, Database Users, Data Administrators. **(Theory)**	**(10)**
Unit – II	Data Models, types and their comparison, Entity Relationship Model, Entity Types, Entity Sets, Attributes and its types, Keys, E-R Diagram, Data Integrity, Referential Integrity constraints, Domain Integrity Constraints **(Theory)**	**(08)**
Unit - III	Relational Algebra (selection, projection, union, intersection, Cartesian product, Different types of join like theta join, equi-join, natural join, outer join), Relational Calculas, Functional Dependencies, Good & Bad Decomposition, Anomalies as a database: A consequences of bad design **(Theory)**	**(14)**
Unit - IV	Introduction to SQL, DDL, DML, and DCL statements, Creating Tables, Adding Constraints, Altering Tables, Update, Insert, Delete & various Form of SELECT-Simple, Using Special Operators for Data Access. Aggregate functions,Joining Multiple Tables (Equi Joins),Joining a Table to itself (self Joins)Functions. **(Theory/ Practical)**	**(14)**
Unit - V	Introduction to PL/SQL (blocks of PL/SQL, Variables, constants), Control Structure Introduction to Stored Procedures, Functions , Cursor and Triggers **(Theory/ Practical)**	**(14)**

Practical's U/A : 50 Marks

1.One Test	**:**	**10 Marks**
2.Oral	**:**	**20 Marks**
3.Writing of Algorithms in Journal / File	**:**	**20 Marks**

Reference Books :

1. Elmasri&Navathe, Fundamentals of Database systems, Addison &Weisely, New Delhi.
2. H. F. Korth& A. Silverschatz, Database Concepts, Tata McGraw Hill, New Delhi
3. C. J. Date, Database Systems, Prentice Hall of India, New Delhi.
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Circular file - 46 -

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO.SU/Commerce & Management/ IV Sem./21/2019

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Commerce & Management, the Hon'ble Vice-Chancellor in his emergency powers under section-12(7) of the Maharashtra Public Universities Act, 2016 has accepted the syllabi of **B.Com., BBA & BCA IV Sem.** under Choice Based Credit and Grading System on behalf of the Academic Council to be applied from the Academic Year 2019-2020 and onwards. The said syllabi are also available on bamu.ac.in on University website.

All concerned are requested to note the contents of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF.NO. SU/ COMMERCE/2019-20
4388-4638
Date:- 15-11-2019.

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Deputy Registrar,
Syllabus Section.

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1] **The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.**
2] The Director, University Network & Information Centre, UNIC, with **a request to upload this Circular along with the said syllabi on University Website.**

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2] The Section Officer, [B.Com. Unit] Examination Branch,
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6] The Public Relation Officer,
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DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

Curriculum of

BACHELOR OF COMPUTER APPLICATION

(BCA)

IIND YEAR

FOURTH SEMESTER

under Choice Based Credit & Grading System

[Effective from the Academic Year 2019-20 & onwards]

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

FACULTY OF COMMERCE & MANAGEMENT.

Syllabus - Bachelor of Computer Application (BCA)

Choice Based Credit System (CBCS) - 2019-20

Semester & Credits	**Core Course [04]**	**Ability Enhancement Compulsory Courses [AEC] [01]**	**Discipline Specific Elective [DSE] [01]**
IV Credit 24	1. Cost Accountancy 2. Java Programming 3. MIS & DSS 4. Business Law – II	1. Entrepreneurship Development	Elective Paper [Any One] 1.PC Maintenance **OR** 2. Advance Networking
Total Credits 24	**No. of Credits : 16**	**No. of Credits :04**	**No. of Credits : 04**

Dean BOS Chairman BOS Chairman BOS Chairman BOS Chairman

Structure of B. C. A. Fourth Semester (CBCS) 2019 - 20

Paper Number	Subject/ Title of the Paper	Course	Weekly		Credits		IA	UA	Total Marks	Duration of Theory Exam
			Th	Pr	Th	Pr				
XIX	Cost Accountancy	Core Course	4	-	4	-	20	80	100	3 Hrs
XX	Java Programming	Core Course (Theory)	3	-	2	-	-	50	50	2 Hrs
		Practical	-	1	-	2	-	50	50	2 Hrs
XXI	MIS & DSS	Core Course	4	-	4	-	20	80	100	3 Hrs
XXII	Business Law – II	Core Course	4	-	4	-	20	80	100	3 Hrs
XXIII	Entrepreneurship Development	Ability Enhancement Compulsory	4	-	4	-	20	80	100	3 Hrs
XXIV	1.PC Maintenance **OR** 2.Advanced Networking	Discipline Specific Elective [Any One] (Theory)	3	-	2	-	-	50	50	2 Hrs
		Practical	-	1	-	2	-	50	50	2 Hrs
	Total		**22**	**02**	**20 + 4 =24**		**80**	**520**	**600**	- -

***Note:-** As per UGC norms one theory lecture is equal to two practicals.

B.C.A. IVth Semester Syllabus (CBCS)
Paper No. XIX – Cost Accountancy

Theory – 80 Marks
Sessional – 20 Marks

		Lectures
Unit - 1	**Cost Accounting :** Definition, Nature, & Scope of Cost Accounting, Distinction between Cost, Financial and Management Accounting, Classification & Elements of Cost, Material, Labour, Expenses, Direct & Indirect Cost, Overheads.	**(10)**
Unit – II	**Costs :** Prime Cost, Factory / Works Cost, Administrative Cost, Total Cost, Cost of Sales	**(08)**
Unit - III	**Preparation of Cost Sheet :**	**(14)**
Unit - IV	**Material :** Purchasing, Purchase Requisition, EOQ, Purchase Procedure, Receiving & Recording of Material, Documents, Goods Received Note, Bin Card, Issue of Materials, Pricing Method, LIFO, FIFO, Average Method.	**(14)**
Unit - V	**Wages :** Compensation, Methods of wage payment, Fixed Rate, Piece Rate, Contract, Bonus, Halsay & Rowan Plan.	**(14)**
	Practical: 20 Marks (to be conducted by the department in each college as per convenience) 1. Test- 05 2. Tutorial- 10 3. Seminar- 05	
	Reference Books : 1. Practical Costing : Khanna, Pande and Ahuja 2. Cost Accounting : Bhatia HSM 3. Principles & Practices of Cost Accounting : N. K. Praasad 4. Cost Accounting (Methods & Problems) : B. K. Bhar 5. Fundamental of Costing: S. N. Maheshwari.	

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B.C.A. IVth Semester Syllabus (CBCS)
Paper No. XX – Java Programming

Theory – 50 Marks
Sessional – 50 Marks

		Lectures
Unit - 1	**Overview of Java Language :** Java History, Java Features, How Java Differ from C and C++, JVM, Java Environment, Java Programming Structure, Types of Comment, Java Tokens: Reserve Keywords, Identifiers, Literals, Operators, Separators, Variables, Constant, Data Types, Array, Type Casting, Control Statement : Branching statement, Looping statement	**(15)**
Unit – II	**Classes, Objects and Methods :** Introduction, Defining Class : Fields Declaration, Methods Declaration, Creating Objects, Visibility Control, Use of 'this' Keyword, Method Parameters, Method Overloading, Static Members, Final Method, Inheritance and It's Types, Method Overriding, Final Variable, Method and Final Class, **Interface, Package and Exception Handling :** Defining and implementing interface, Inner Classes, Package: Create Package, Accessing Package, Exception, Types of Error, Multiple catch statement, Creating User defined Exception, Finally clause	**(15)**
Unit – III	**String and Stream :** String Classes, String Buffer Class, Stream Classes: Types of Streams, Byte Stream Classes, Character Stream Classes **Applets** : Introduction to Applet , Types of Applet, Applet vs Application , Applet class, advantages of Applet , Applet Lifecycle, My First Applet, Applet tag, Passing Parameters to Applet . **Graphics**: Basic Shapes: drawLine, drawArc, fillArc, drawPolygon, fillPolygon, Color & Color Methods, Fonts.	**(15)**
	Practical List: 1) Program to demonstrate Constant Variable. 2) Program to demonstrate scope of Variable 3) Program to demonstrate branching statement 4) Program to demonstrate Looping statement 5) Program to demonstrate simple class 6) Program to demonstrate method parameter 7) Program to demonstrate method overloading 8) Program to demonstrate constructor 9) Program to demonstrate static member 10) Program to demonstrate Method overriding 11) Program to demonstrate Final variable, Method and Final Class. 12) Program to demonstrate Finilize method() 13) Program to demonstrate Array and It's types. 14) Program to demonstrate String class and it's method. 15) Program to demonstrate String Buffer and it's method.	**(15)**

	16) Program to demonstrate inheritance and its Types 17) Program to demonstrate Abstract method and Abstract Class. 18) Program to demonstrate Multiple catch statement 19) Program to demonstrate finally clause 20) Program to demonstrate package 21) Program to demonstrate interface 22) Program to demonstrate Applet life cycle 23) Program to demonstrate param tag 24) Program to demonstrate Graphics class	
	Practical's U/A : 50 Marks **1. One Test : 10 Marks** **2. Oral : 20 Marks** **3. Writing of Algorithms in Journal / File : 20 Marks**	
	Reference Books : 1. Complete Reference Herbert Schildt Tata McGraw- Hill Publishing company Ltd. 2. Java 2 programming black books Steven Horlzner DreamTech Press 3. Core Java Volume-I Fundamentals Eighth Edition Cay S. Horstmann, Gary Cornell, Prentice Hall Sun Microsystems Press 4. Programming with Java E Balagurusamy The McGraw Hill Education Pvt. Ltd. New Delhi	

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B.C.A. IVth Semester Syllabus (CBCS)
Paper No. XXI – MIS & DSS

Theory – 80 Marks
Sessional – 20 Marks

		Lectures
Unit - 1	**Concept, Definition, Characteristics, Objectives, Role and impact of MIS, Management as a control system, MIS**: A support to the management, Application of MIS, Organization Effectiveness, Decision making concept, Decision making process, Organizational decision making &MIS and decision making.	**(12)**
Unit – II	**Information:** A quality product. IT enabled services, e business, wireless technologies etc. Information system in business, Computer based Information system, limitation and disadvantages of IS, Human as an Information processor, knowledge and knowledge management system, business intelligence.	**(12)**
Unit - III	**System concept and control**, types of system, general model of MIS, need of system Analysis, System Development Life cycle, development process of MIS, Strategic design of MIS, Business-process, Process mode of an organization. MIS and BPR.	**(12)**
Unit - IV	**DSS:** concept and Philosophy, objectives and characteristic of DSS, major functions of DSS, Components of DSS, DSS generator and tools, limitations of DSS, GDSS, components of GDSS, MIS and benefits of DSS and ONLINE DATA PROCESSING	**(12)**
Unit - V	**Knowledge system, Expert system**, application of ES, benefits and Limitations of ES, ERP, ERP models and modules, benefits of ERP, ERP implementation, SCM, CRM.	**(12)**
	Sessional Works : 20 Marks • **College can take decisions accordingly.**	
	Reference Books: 1. Decision Support & Expert System, Efraim Turban 2. W.S.Jawadekar, Management Information System 3. Dr. Akther Anwar, Fundamentals to Decision Support System 4. Dr. A.K.Gupta, Management Information System, S.Chand 5. V. Murthy, Management Information System, Himalaya publishing house, millennium edition	

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B.C.A. IVth Semester Syllabus (CBCS)
Paper No. XXII – Business Law – II

Theory – 80 Marks
Sessional – 20 Marks

		Lectures
Unit – 1	**Contract Act:** - Special Contracts - Law of Indemnity, Guarantee Contracts, Law of Bailment & Pledge, Agency Contracts.	**(12)**
Unit – II	**Company Law 2013 :** Introduction of Company Act, Meaning & Definitions, Features of Co. Act, Types of Company, Share Capital & its types, Incorporation-Formation of company, Memorandum & Articles of Association.	**(12)**
Unit - III	**SEBI Act – 1992 :-** Introduction of the Act, Meaning & Definitions, Basic Characteristics of the Act, Obligation of SEBI, Issue of Capital, Discloser, Listing & its role in Stock Market.	**(12)**
Unit - IV	**Cyber & I.T. Act – 2000 (with Amendment) :** Need & Significance in modern era, Character & User of Internet Technology, On Line Contracts, Hacking, Phishing, Privacy Terrorism, Privacy, Section 66A	**(12)**
Unit - V	**Micro, Small & Medium Enterprises Development Act 2006 {MSMED Act - 2006} :** Introduction, Definitions, Features of the Act, Establishment of National Board of MSME, Power & Duties of the Board, Classification of MSME, Promotional Measures of the Act.	**(12)**
	Sessional Works : 20 Marks 1. One Test : 05 Marks 2. One Tutorial : 05 Marks 3. One Seminar : 05 Marks **4.** Group Discussion : 05 Marks	
	Reference Books: 1. Mercantile of Law - N.D.Kapoor 2. Business Law - Dr.Nowlakha 3. Indian Contract Act – Dr. Avtarsingh 4. Mercantile & Industrial Law – Kuchal 5. Micro, Small & Medium Enterprises Development Act 2006{MSMED Act - 2006} – (Law Policies & Incentive- Abha Jaiswal, IIBF,Taxman 6. HandBooks for MSME Enterprises – ICSI 7.MSME at a Glance – GOI Ministry of MSME	

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B.C.A. IVth Semester Syllabus (CBCS)
Paper No. XXIII – Entrepreneurship Development

Theory – 80 Marks
Sessional – 20 Marks

		Lectures
Unit - 1	**Originating Theories of Entrepreneurship -** Economic Theory, Sociological Theory, Psychological Theory, Innovative theory of Entrepreneurship by Joseph Schumpeter. Theory of Achievement Motivation by MC Clelland – The Kakinada Experiment. Hoselitz sociological theory.	**(10)**
Unit – II	**Types of Entrepreneurship -** Recent Trends – Sociopreneur, edupreneur, ecopreneur and agropreneur. Women Entrepreneurs, Self Help Groups.	**(08)**
Unit - III	**Identification of Business Opportunities.** Environment scanning – meaning and benefits, Factors considered for environment scanning, Socio-cultural, economic, technical, demographic, legal and political, geographical and international factors, Sources and steps involved in identification of business opportunities.	**(14)**
Unit - IV	**Market Research–** Meaning, need and importance of market research. Techniques in Marketing Research - Field Survey Technique, Test Marketing, Delphi Technique, Desk Research, Observation Method and Experiment Method	**(14)**
Unit - V	**Innovation in Entrepreneurship –** Purposeful innovation – concept, need, process, principles of purposeful innovation, Incubation centres – Meaning, Services and role of incubation centres.	**(14)**
	SESSIONAL WORK: 20 Marks 1) One test 05 marks 2) One tutorial 05 marks 3) Seminar and GD 10 Marks	
	Reference Books : 1. Desai Vasant, Dynamics of Entrepreneurship development. 2. Drucker, Peter , Innovation and Entrepreneurship – Practice and principals. 3. Paul, Jose, Kumar Ajith. - Entrepreneurship Development and management – Himalaya Publication House. 4. Khanka, S.S. Entrepreneurship Development – Sultan Chand Publication. 5. Gupta, C.B. Shrinivasan - Entrepreneurial Development, Sultan Chand Publication.	

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B.C.A. IVth Semester Syllabus (CBCS)
Paper No. XXIV – PC Maintenance

Theory – 50 Marks
Practical's U/A – 50 Marks

		Lectures
Unit - 1	**P.C. Architecture :** Computer Definition, Characteristics, of computers, Basic Application of Computer, Generations of Computers. Components of Computer System, Central Processing Units(CPU), Input / Output Devices, Computer Memory, Primary and Secondary Memory, Magnetic and Optical Storage Devices, Concept of Hardware and Software, Types of Software.	**(15)**
Unit – II	**P.C. Assembly :** Opening the System, Closing the System, Tips for working inside a PC Mounting Motherboard in Cabinet, Installation of Card, Device and Then Connecting Cables, Role of CMOS Setup Basic CNOS Optimization, Hidden CMOS settings.	**(15)**
Unit - III	**Motherboard and Processor :** Study of different types of Motherborads, Motherboard Configuration, Identifying Internal and External Connectors, Types of data cables, Types of Processor – Intel Pentium IV, Dual Core, Core 2 Duo, Quad Processor, Graphics Card Types of Graphics cards.	**(15)**
	Practical's U/A : 50 Marks **1.**BIOS Configuration : Study of BIOS Set-up Advance set-up , Boot configuration, Boot Menu. 2.Installation of OS – Windows XP / 7 / 10 3.Hard Disk Formatting of Hard Disk, Partitioning of Hard Disk in different logical drives, Disk Defragmentation, Disk clean up, Scan disk etc 4.Installation of Device Drivers – Printers, Scanners etc 5.Application Software Installation – MS Office, PDF Reader, Antivirus etc Subject Teacher can add more Practical's based on above syllabus.	**(15)**
	References Books : 1.Computer Fundamentals (Sixth Edition) : P. K. Sinha 2.Trobleshotting and Maintaining Your PC All-in-One : Dan Gookin. 3.Computer System Architecture : M. Morris 4.Computer Fundamentals : Amita Goel 5.Fundamental of Computers : E. Balaguruswamy 6.PC Repair and Maintenance a practical guide : J.Rosenthal, K.Irwin 7.3 Easy PC Maintance & Repair : Philip Laplante, McGraw Hill Pub.	

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B.C.A. IVth Semester Syllabus (CBCS)
Paper No. XXIV – Advance Networking

Theory – 50 Marks
Practical's U/A – 50 Marks

		Lectures
Unit - 1	**Basics of Computer Networks** - Computer Network, Definition, Goals, Applications, Structure, Components, Topology – Bus, Star, Ring, Mesh, Types of Networks , LAN, MAN, WAN, Internet, Broadcast & Point-To-Point Networks communication Types – Serial, Parallel, Modes of Communication : Simplex , Half Duplex , Full Duplex , Server Based LANs & Peer-to-Peer LANs ,Comparison of both, Protocols and Standards	**(15)**
Unit – II	**Network Models -** Design issues of the layer, Protocol Hierarchy , ISO-OSI Reference Model - Layers in the OSI Model , Functions of each layer, Terminology, SAP , Connection Oriented services, connectionless services , Peer Entities Internet Model (TCP/IP) , Comparison of ISO-OSI & TCP/IP Model , Addressing - Physical Addresses , Logical Addresses ,Port Addresses	**(15)**
Unit - III	**Transmission Media** - Guided Media(Wired), Coaxial Cable, Twisted Pair , Fiber Optics Cable , Unguided Media (Wireless) **Network Connectivity Devices** - Categories of Connectivity Devices, Passive & Active Hubs, Repeaters, Bridges, Transparent Bridges(Loop Problem, Spanning Tree) , Source Routing Bridges, Switches , Router, Gateways Network Security Devices –Firewalls, Packet-Filter firewall, Proxy firewall	**(15)**
	University Practical Exam. : 50 Marks Any suitable practical based on above syllabus.	**15**
	Reference Books : 1.Computer Networks - Andrew Tanenbaum (III Edition) 2.Internetworking Technology Handbook , CISCO System 3.Data Communications & Networking - Behrouz Ferouzan (III Edition) 4.Complete Guide to Networking - Peter Norton	

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