



Date :- 01/08/2023

NOTIFICATION

Sub :- CBCS Syllabi of BCA (Sem. I & II)

Ref. :- Decision of the Academic Council at its meeting held on 26/07/2023.

The Syllabi of BCA (First and Second Semesters) as per **NATIONAL EDUCATION POLICY - 2020** and approved by the Academic Council as referred above are hereby notified for implementation with effect from the academic year 2023-24.

Copy of the Syllabi Shall be downloaded from the College Website
(www.kcesmjcollege.in)

Sd/-
Chairman,
Board of Studies

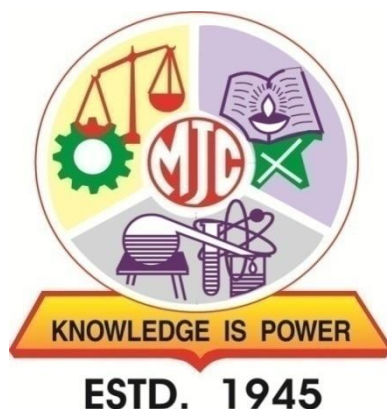
To :

- 1) The Head of the Dept., M. J. College, Jalgaon.
- 2) The office of the COE, M. J. College, Jalgaon.
- 3) The office of the Registrar, M. J. College, Jalgaon.

Knowledge is Power

Khandesh College Education Society's
Moolji Jaitha College, Jalgaon
An "Autonomous College"

Affiliated to
Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon-425001



STRUCTURE AND SYLLABUS

B.C.A. Honours / Honours with Research (Computer Application)

**Under Choice Based Credit System (CBCS)
and
as per NEP-2020 Guidelines**

[w.e.f. Academic Year: 2023-24]

Preface

There are various innovative technologies that have come up in the IT world which are transforming the business landscape at a rapid pace. The challenges of the IT sector today are a lot different from those that existed a few years ago. The changing technological environment has made it necessary for students who aspire to a career in IT to be well aware of the latest innovations. The BCA program is specially designed to cater to the present industry skills and knowledge needs. It comprises of theoretical and practical training sessions that can prepare students for the well-rewarding jobs of the future.

Programme Outcomes (PO) for B.C.A. honours/ Honours with Research

Upon successful completion of this Programme, student will be able to:

PO No.	PO
1	Discipline knowledge: Acquiring knowledge on basics of Computer Science and ability to apply to design principles in the development of solutions for problems of varying complexity
2	Problem Solving: Improved reasoning with strong mathematical ability to Identify, formulate and analyze problems related to computer science and exhibiting a sound knowledge on data structures and algorithms.
3	Design and Development of Solutions: Ability to design and development of algorithmic solutions to real world problems and acquiring a minimum knowledge on statistics and optimization problems. Establishing excellent skills in applying various design strategies for solving complex problems.
4	Programming a computer: Exhibiting strong skills required to program a computer for various issues and problems of day-to-day applications with thorough knowledge on programming languages of various levels.
5	Application Systems Knowledge: Possessing a sound knowledge on computer application software and ability to design and develop app for applicative problems.
6	Motivation to take up Higher Studies: Inspiration to continue educations towards advanced studies on Computer Science.

Programme Specific Outcome (PSO) for B.C.A. Honours/Honours with Research:

After completion of this course, students are expected to:

PSO No.	PSO
1	Apply standard Software Engineering practices and strategies in real -time software project development
2	Design and develop computer programs/computer -based systems in the areas related to AI, algorithms, networking, web design, cloud computing, IoT and data analytics.
3	The ability to apply the knowledge and understanding noted above to the analysis of a given information handling problem.
4	The ability to apply the knowledge and understanding noted above to the analysis of a given information handling problem.
5	Acquaint with the contemporary trends in industrial/research settings and thereby innovate novel solutions to existing problems
6	Practicing of existing projects and becoming independent to launch own project by identifying a gap in solutions.

Credit distribution structure for Three/ Four year Honors/ Honors with Research Degree Programme with Multiple Entry and Exit

Credit distribution structure for Three Year Honors/ Honors with Research Degree Programme with Multiple Entry and Exit										
Level	Sem	Major (Core) Subjects		Minor Subjects (MIN)	GE/ OE	VSC, SEC (VESC)	AEC, VEC, IKS	CC, FP, CEP, OJT/Int, RP	Cumulative Credits/Sem	Degree/ Cumulative Cr.
		Mandatory (DSC)	Elective (DSE)							
4.5	I	DSC-1 (2T) DSC-2 (2T) DSC-3 (2P)	—	MIN-1 (2T) MIN-2 (2P)	OE-1 (2T)	SEC-1 (2T) SEC-2 (1P)	AEC-1 (2T) (ENG) VEC-1 (2T) (ES) IKS (1T)	CC-1 (2)	22	UG Certificate 44
	II	DSC-4 (2T) DSC-5 (2T) (IKS) DSC-6 (2P)	...	MIN-3 (2T) MIN-4 (2P)	OE-2 (2T)	SEC-3 (2T) SEC-4 (1P)	AEC-2 (2T) (ENG) VEC-2 (2T) (CI) IKS (1T)	CC-2 (2)	22	
	Cum.	12	...	8	4	6	4+4+2	4	44	
Exit option: Award of UG Certificate in Major with 44 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor.										
5.0	III	DSC-7 (2T) DSC-8 (2T) DSC-9 (2P) DSC-10 (2P)	...	MIN-5 (2T) MIN-6 (2P)	OE-3 (2T) OE-4 (2P)		AEC-3 (2T) (MIL)	CC-3 (2) CEP (2)	22	UG Diploma 88
	IV	DSC-11 (2T) DSC-12 (2T) DSC-13 (2P) DSC-14 (2P)	...	MIN-7 (2T) MIN-8 (2P)	OE- 5 (2T) OE-6 (2P)		AEC-4 (2T) (MIL)	CC-4 (2) FP (2)	22	
	Cum.	28	...	16	10	6	8+4+2	8+2+2	88	
Exit option: Award of UG Diploma in Major and Minor with 88 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor.										
5.5	V	DSC-15 (2T) DSC-16 (2T) DSC-17 (2T) DSC-18 (2P) DSC-19 (2P)	DSE-1 (2T) A/B DSE-2 (2P) A/B	MIN-9 (2T/P)	...	VSC-1 (2T) VSC-2 (2P)	...	OJT/Int(2)	22	UG Degree 132
	VI	DSC-20 (2T) DSC-21 (2T) DSC-22 (2T) DSC-23 (2P) DSC-24 (2P)	DSE-3 (2T) A/B DSE-4 (2P) A/B	MIN-10(2T/P)	—	VSC-3 (2T) VSC-4 (2P)	...	OJT/Int(2)	22	
	Cum.	48	08	20	10	8+6	8+4+2	8+2+2+4	132	
Exit option: Award of UG Degree in Major with 132 credits OR Continue with Major and Minor										
6.0	VII	DSC-25 (4T) DSC-26 (4T) DSC-28 (4T) DSC-27 (2P)	DSE-5 (2T) A/B DSE-6(2P) A/B	RM (2T)	—	...	...	OJT/Int (2)	22	UG Honors Degree 176
	VIII	DSC-29 (4T) DSC-30 (4T) DSC-32 (4T) DSC-31 (2P)	DSE-7 (2T) A/B DSE-8(2P) A/B	RM (2T)	—	...	...	OJT/Int (2)	22	
	Cum.	76	16	20+4	10	8+6	8+4+2	8+2+2+8	176	
Four Year UG Honors Degree in Major and Minor with 176 credits										
6.0	VII	DSC-25 (4T) DSC-26 (4T) DSC-27 (2P)	DSE-5 (2T) A/B DSE-6 (2P) A/B	RM (2T)	...	...	...	RP (6)	22	UG Honors with Research Degree 176
	VIII	DSC-29 (4T) DSC-30 (4T) DSC-31 (2P)	DSE-7 (2T) A/B DSE-8 (2P) A/B	RM (2T)	...	...	...	RP (6)	22	
	Cum.	68	16	20+4	10	8+6	8+4+2	8+2+2+8+12	176	
Four Year UG Honours with Research Degree in Major and Minor with 176 credits										

Sem- Semester, **DSC-** Department Specific Course, **DSE-** Department Specific Elective, **T-** Theory, **P-** Practical, **CC-** Cocurricular **RM-** Research Methodology, **OJT-** On Job Training, **FP-** Field Project, **Int-** Internship, **RP-** Research Project,

Multiple Entry and Multiple Exit options:

The multiple entry and exit options with the award of UG certificate/ UG diploma/ or three-year degree depending upon the number of credits secured;

Levels	Qualification Title	Credit Requirements		Semester	Year
		Minimum	Maximum		
4.5	UG Certificate	40	44	2	1
5.0	UG Diploma	80	88	4	2
5.5	Three Year Bachelor's Degree	120	132	6	3
6.0	Bachelor's Degree- Honours Or Bachelor's Degree- Honours with Research	160	176	8	4

F. Y. B.C.A. Structure and Syllabus

Semester	Course Module	Credit	Hours/ week	TH/ PR	Code	Title
I	DSC	2	2	TH	BCA-DSC-111	Basic of Web Design
	DSC	2	2	TH	BCA-DSC-112	Programming in C
	DSC	2	4	PR	BCA-DSC-113	Practicals on Web Design and Programming in C
	Minor	2	2	TH	BCA-MIN-114	E-Commerce
	Minor	2	4	PR	BCA-MIN-115	Practicals on Ecommerce
	SEC	2	2	TH	BCA-SEC-116	Office Automation-I
	SEC	1	2	PR	BCA-SEC-117	Practicals on Office Automation-I
	OE/GE	2	2	TH	BCA-OE-111	Any one from the basket of OE course given below
	AEC	2	2	TH	BCA-ENGES-AEC-111	English Communication Skills - I
	VEC	2	2	TH	BCA -ES -VEC-111	Environmental studies
	IKS	1	1	TH	IKS-111	Indian knowledge system
	CC	2	2	CC	BCA-NCC-CC-111 BCA-NSS-CC-111 BCA-SPT-CC-111 BCA-CUL-CC-111	NCC NSS Sports Cultural
II	DSC	2	2	TH	BCA-DSC-121	Programming in C++
	DSC	2	2	TH	BCA-DSC-122	Database Management System
	DSC	2	4	PR	BCA-DSC-123	Practicals on C++ and Database Management System
	Minor	2	2	TH	BCA-MIN-124	M-Commerce
	Minor	2	4	PR	BCA-MIN-125	Practicals on M-Commerce
	SEC	2	2	TH	BCA-SEC-126	Office Automation-II
	SEC	1	2	PR	BCA-SEC-127	Practicals on Office Automation-II
	OE/GE	2	2	TH	BCA-OE-121	Any one from the basket of OE course given below
	AEC	2	2	TH	BCA-ENGES-AEC-121	English Communication Skills - II
	VEC	2	2	TH	BCA-CI-VEC-121	Constitution of India
	IKS	1	1	TH	BCA-IKS-121	Indian knowledge system
	CC	2	2	CC	BCA-NCC-CC-121 BCA-NSS-CC-121 BCA-SPT-CC-121 BCA-CUL-CC-121	NCC NSS Sports Cultural

DSC : Department-Specific Core course
DSE : Department-Specific elective
GE/OE : Generic/ Open elective
SEC : Skill Enhancement Course
MIN : Minor course
AEC : Ability Enhancement Course
VEC : Value Education Courses

ENG : English
ES : Environmental studies
CI : Constitution of India
IKS : Indian Knowledge System
CC : Co-curricular course
TH : Theory
PR : Practical

Exam Pattern

- Each theory and practical course will be of 50 marks comprising of 10 marks internal and 40 marks external examination.

External Theory Examination (40 marks)

- External examination will be of two hours duration for each theory course. There shall be 4 questions each carrying equal marks (10 marks each) while the tentative pattern of question papers shall be as follows;
- Q1 (A), Q2 (A) and Q3 (A), each will be of 6 marks (attempt any 2 out of 3 sub-questions).
- Q1 (B), Q2 (B) and Q3 (B), each will be of 4 marks (attempt any 1 out of 2 sub-questions).
- Q4 will be of 10 marks (attempt any 2 out of 3 sub-questions).

External Practical Examination (40 marks):

- Practical examination shall be conducted by the respective department at the end of the semester. Practical examination will be of minimum 3 hours duration and shall be conducted as per schedule. There shall be 05 marks for journal, 10 marks for *viva-voce*. Certified journal is compulsory to appear for practical examination.

Internal Theory/ Practical Examination (10 marks):

- Internal theory assessment of the student by respective teacher will be comprehensive and continuous, based on written test/ assignment. The written test may comprise of both objective and subjective type questions.
- Internal practical examination should be conducted by respective department as per schedule given. For internal practical examination student should perform at least one major and one minor experiment and should have completed journal.

OE/GE Basket

(Any one from the basket of OE/GE course given below)

Semester	GE Basket-I	GE Basket-II	GE Basket-III	GE Basket-IV
Sem-I	India's Free Struggle	Philosophy of Science-I	English / Hindi / Marathi Literature-I	Development Studies-I
Semi-II	Indian Social Reformers	Philosophy of Science-II	English / Hindi / Marathi Literature-II	Development Studies-II

Semester	OE Basket-I	OE Basket-II	OE Basket-III	OE Basket-IV
Sem-I	Fundamentals of Business Management-I	Principles of Accounting-I	E-commerce and M-commerce-I	Personal Financial Planning-I
Semi-II	Fundamentals of Business Management-I	Principles of Accounting-II	E-commerce and M-commerce-II	Personal Financial Planning-II

SEMESTER-I

FYBCA SEMESTER-I

BCA-DSC-111: Basic of Web Design

Total Hours: 30

Credits: 2

Course objectives	• To search engine optimization • To user-friendly site • To effective calls to action • To Increase conversion rate.	
Course outcomes	After successful completion of this course, students are expected to • Enter basic web pages. • Prepare different tags and control • Design WebPages and designing Website • Building web forms to gather user input and data.	
Unit	Content	Hours
Unit I	Internet & Web Designing Concepts • Internet: Introduction to Internet • Connection of Internet, How does internet work? • Internet Services, WWW, Website Advantages • INTERNET – INTRANET - EXTRANET • Hypertext Transfer Protocol (HTTP) • URL, Web server, Proxy servers	7
Unit II	Web Site Concepts • Web page, Elements of Website • Static and Dynamic web page • Web site development Phases, Difference between Webpage and Website • Types of Websites	8
Unit III	HTML Fundamentals • Hypertext Basics, Basic Components of HTML • HTML Tags, Head, and Title Tags, Body Tags • List Tags and Attributes Nested Lists • Font Tags, Font Attributes • Marquee Tag and Attributes • Different Image Formats, Image Tags and Attributes, Image mapping • Background Images and Color • SVG tag	7
Unit IV	Links, Tables & Frames • How Hyperlinks Work, Anchor Tag and HREF. • Attributes, Border, Table Tags & Table Attributes, Row Attributes, Cell Attributes, Merging Rows & Columns. • Frames, Creating Framesets, Frameset Attributes, Frame Tag and Attributes • Form Tag And Attributes • Text Boxes, Check Boxes, Radio Buttons, Text Areas, List Box Submit and Reset Buttons.	8
Study Resources	• Duckett, J. (2011). HTML and CSS: Design and Build Websites. Wiley. • Niederst Robbins, J. (2018). Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics. O'Reilly Media. • Pilgrim, M. (2010). HTML5: Up and Running. O'Reilly Media. • Robson, E., & Freeman, E. (2012). Head First HTML and CSS. O'Reilly Media. • Castro, E. A. (2013). HTML and CSS: Visual QuickStart Guide. Peachpit Press. • Henick, B. (2010). HTML & CSS: The Good Parts. O'Reilly Media. • Larsen, R. (2019). HTML and CSS: Designing and Building Web Pages. Wiley. • Casabona, J. (2016). HTML and CSS: Visual QuickStart Guide. Peachpit Press. • Keith, J. (2010). HTML5 for Web Designers.	

FYBCA SEMESTER-I

BCA-DSC-112: Programming in C

Total Hours: 30

Credits: 2

Course objectives	- To study the fundamental programming languages - To know the process logic development - To give the practical knowledge of programming. - To be able to develop logics to create applications in C.	
Course outcomes	After successful completion of this course, students are expected to - Enter basic logic development. - Prepare simple program - Prepare basic programming logic and entries - Obtain basic knowledge of program	
Unit	Content	Hours
Unit I	Basics of C Language Overview of C: History of C, Importance of C, Structure of a C Program. Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant. Input/output: Unformatted & formatted I/O function in C, Input functions - scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putchar(), puts().	7
Unit II	Control Flow and Logical Expressions - Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, - Conditional operators and special operators, operator hierarchy & associability Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement. Loops control structure: while loop, for loop, do-while loop, nested loop, break , continue, switch, go to, exit statement	8
Unit III	Logic of Programming, Functions, Pointers Functions: Definition, prototype, passing parameters, Scope of variable, storage class, recursion, Function Overloading. Arrays and String : Array, array initialization, and Manipulation, Multidimensional array, Strings, Standard library string function strlen(), strcpy(), strcat(), strcmp(). Pointers : Definition and declaration, Uses, Initialization, address operator, pointer arithmetic, dynamic memory allocation, arrays and pointers, pointer to function	7
Unit IV	Structure, Union and File Structure : Defining, Declaring, Accessing, Initialization Structure, nested structure, self-referential structure, bit-field, Arrays of Structures, Structures and Functions, Union: difference between structure and union, active data member, structure within union, Self-referential Structure. File: File Management in C, Defining and Opening a File, File opening modes (read, write, append), Closing a File, File operations, file and stream, Error Handling During I/O Operations, sequential and random access file, low level and high level file.	8
Study Resources	E. Balagurusamy, “Programming in ANSI C”, 4/e, (TMH) B. Kernighan & Dennis Ritchie, “The C Programming Language”, 2/e PHI - Paul Deitel, Harvey Deitel, “C: How to Program”, 8/e, Prentice Hall. - P.C. Sethi, P.K. Behera, “Programming using C”, Kalyani Publisher, Ludhiana - Kernighan, B. W., & Ritchie, D. M. (1988). The C Programming Language (2nd ed.). Prentice Hall. - Prata, S. (2013). C Primer Plus (6th ed.). Addison-Wesley. - Deitel, P. J., & Deitel, H. M. (2015). C: How to Program (8th ed.). Pearson. - King, K. N. (2012). C Programming: A Modern Approach (2nd ed.). W. W. Norton & Company.	

	• Gottfried, B. (2013). Programming in C (4th ed.). McGraw-Hill Education. • Hanly, J. J., & Koffman, E. B. (2011). Problem Solving and Program Design in C (7th ed.). Pearson. • Perry, G. (2013). C Programming Absolute Beginner's Guide (3rd ed.). Que Publishing. • Venugopal, K. N., & Prasad, P. R. (2012). Mastering C (2nd ed.). McGraw-Hill Education. • Holmes, M. (2017). C Programming in Easy Steps (5th ed.). In Easy Steps Limited. • Horton, I. (2011). Beginning C (5th ed.). Apress.	
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FYBCA SEMESTER-I

BCA-DSC-113: Practicals on Web Design and Programming in C

Total Hours: 60

Credits: 2

Course objectives	• To search engine optimization • To user-friendly site, • To effective calls to action, • To increase conversion rate.	
Course outcomes	After successful completion of this course, students are expected to • Enter basic web pages. • Prepare different tags and control • Design WebPages and designing Website • Enter basic logic development.	
	Content	Hours
1	Create web page using basic HTML tags, Different Formatting tag.	4
2	Create Web page with different images.	4
3	Create Web page with different types of Marquee Tag.	4
4	Create a web page using different List tag.	4
5	Create a web page using different Table Tag.	4
6	Create web page using Anchor Tag (Internal Link and External Link)	4
7	Design a web page using Frames and Frameset Tag.	4
8	Write a program in C to demonstrate Arithmetic & Relational operators.	4
9	Write a program in C for Palindrome number.	4
10	Write a program in C for Factorial number.	4
11	Write a program in C for Fibonacci series.	4
12	Write a program in C for Function Overloading.	4
13	Write a program in C which demonstrates the string function.	4
14	Write a program in C print the largest and second largest element of the array.	4
15	Write a program in C to demonstrate pointer variable.	4
Study Resources	• Pilgrim, M. (2010). HTML5: Up and Running. O'Reilly Media. • Robson, E., & Freeman, E. (2012). Head First HTML and CSS. O'Reilly Media. • Castro, E. A. (2013). HTML and CSS: Visual QuickStart Guide. Peachpit Press. • Henick, B. (2010). HTML & CSS: The Good Parts. O'Reilly Media. • Larsen, R. (2019). HTML and CSS: Designing and Building Web Pages. Wiley. • Casabona, J. (2016). HTML and CSS: Visual QuickStart Guide. Peachpit Press. • E. Balagurusamy, "Programming in ANSI C", 4/e, (TMH) • B. Kernighan & Dennis Ritchie, "The C Programming Language", 2/e PHI • Paul Deitel, Harvey Deitel, "C: How to Program", 8/e, Prentice Hall. • P.C. Sethi, P.K. Behera, "Programming using C", Kalyani Publisher, Ludhiana • Kernighan, B. W., & Ritchie, D. M. (1988). The C Programming Language (2nd ed.). Prentice Hall. • Prata, S. (2013). C Primer Plus (6th ed.). Addison-Wesley.	

FYBCA SEMESTER-I

BCA- MIN-114: E-Commerce

Total Hours: 30

Credits: 2

Course objectives	- To study the fundamental e-commerce concepts - To know the process of online transaction in real life. - To give the practical knowledge of online marketing, sale-perches, advertisement. - To Analyze the benefits and challenges of e-commerce	
Course outcomes	After successful completion of this course, students are expected to - Enter basic online transaction. - Use simple digital payments. - Obtain basic knowledge of cashless transaction - Identify and evaluate emerging trends in e-commerce	
Unit	Content	Hours
Unit I	Fundamentals of e-Commerce Lecturers - e-Commerce: Meaning & Nature - Introduction to e-Commerce - Origin, Definitions & Meaning, Scope & Goals, Feature, Needs & Functions, Significance, Advantages & Disadvantages of e-commerce - Essentials of e-Commerce, e-Commerce v/s Traditional Commerce - Technology Infrastructure for e-Commerce -The Internet and WWW, - e-Commerce Infrastructure.	7
Unit II	Business Models for e-Commerce - e-Business: Meaning, Definitions - Importance Requirements of E-Business , e-Business Models based on the relationships of transaction parties - e-Business Models based on the relationships of transaction types Manufacture Model, Advertising Model, Value Chain Model, Brokerage Model.	8
Unit III	e-Enterprise - Managing the e-Enterprise - Introduction e-Enterprise, Auctions in E-commerce, Comparison between Conventional Design and E-organization, Organization of Business in an e-Enterprise. - Government's support for cashless payments- Lucky Grahak Yojna for customers and Digi Dhan Vyapar Yojna. - Models of Payments: Credit Cards, Debit Cards, Internet Banking , - e-Credit Accounts & e-Money/Cash, e-wallets.	7
Unit IV	Introduction to e-commerce models, E-Security and Legal Issues - Fundamentals of B2C, B2B, C2C, C2G, G2G, B2G E-Business: Introduction to Internet bookshops, Grocery Suppliers, Software Supplies and support, Electronic newspapers, Virtual auctions, Online share dealing, e-diversity. E-Security and Legal Issues: Security concerns in E-Commerce, Privacy, integrity, authenticity, non-repudiation, confidentiality, SSL, Digital Signatures and fire walls, IT Act 2000, Cyber-crimes and cyber laws	8
Study Resources	- Laudon, K. C., & Traver, C. G. (2020). E-commerce 2020: Business, Technology, Society (16th ed.). Pearson. - Chaffey, D., & Ellis-Chadwick, F. (2019). Digital Marketing: Strategy, Implementation, and Practice (7th ed.). Pearson. - Turban, E., King, D., Lee, J., Viehland, D., & Liang, T.-P. (2021). Electronic Commerce 2021: Business, Technology, Society (13th ed.). Springer. - Kalakota, R., & Whinston, A. B. (1997). Electronic Commerce: A Manager's Guide. Addison-Wesley. - Reynolds, J., & Stair, R. (2021). Principles of Information Systems (15th ed.). Cengage Learning. - Strauss, J., & Frost, R. (2020). E-Marketing (8th ed.). Routledge.	

	• O'Brien, J. A., & Marakas, G. M. (2021). Management Information Systems (12th ed.). McGraw-Hill Education. • Timmers, P. (1998). Electronic Commerce: Strategies and Models for Business-to-Business Trading. Wiley. • Kalakota, R., & Robinson, M. (2001). M-Business: The Race to Mobility. McGraw-Hill Education. • Rayport, J. F., & Jaworski, B. J. (2002). Introduction to e-Commerce. McGraw-Hill Education.	
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FYBCA SEMESTER-I

BCA-Minor-115: Practicals on Ecommerce

Total Hours: 60

Credits: 2

Course objectives	• To study the fundamental e-commerce concepts • To know the process of online transaction in real life. • To give the practical knowledge of online marketing, sale-perches, advertisement. • To Analyze the benefits and challenges of e-commerce	
Course outcomes	After successful completion of this course, students are expected to • Enter basic online transaction. • Use simple digital payments. • Obtain basic knowledge of cashless transaction. • Identify and evaluate emerging trends in e-commerce	
	Content	Hours
1	Search and demonstrate any 5 commercial Websites (e-commerce) for purchasing various products.	4
2	Study of shipping stragies in e-commerce and list various sellers in E-commerce.	4
3	Demonstrate possible Payment Methods while purchasing through a website.	4
4	Perform a Marketing Transaction on a commercial Website.	4
5	Demonstrate B2B, C2C and B2C Relationship using websites.	4
6	Create an UPI account.	4
7	Demonstrate how to perform M-commerce Transactions Study various M-Commerce Websites(Nordstorm, Zillow, Mizpee, Target)	4
8	Perform a Banking Transaction using various Apps.	4
9	Demonstrate Billing Transactions using various Apps	4
10	Live demo for billing transaction	4
11	Creating a Product Listing Page	4
12	Develop a shopping cart functionality that allows users to add products, update quantities, and calculate the total cost.	4
13	Integrate a payment gateway to enable users to make secure online payments for their purchases.	4
14	Develop an order management system that allows users to view their order history, track shipments, and manage returns or cancellations.	4
15	Implementing Product Reviews and Ratings	4
Study Resources	• Laudon, K. C., & Traver, C. G. (2020). E-commerce 2020: Business, Technology, Society (16th ed.). Pearson. • Chaffey, D., & Ellis-Chadwick, F. (2019). Digital Marketing: Strategy, Implementation, and Practice (7th ed.). Pearson. • Turban, E., King, D., Lee, J., Viehland, D., & Liang, T.-P. (2021). Electronic Commerce 2021: Business, Technology, Society (13th ed.). Springer. • Kalakota, R., & Whinston, A. B. (1997). Electronic Commerce: A Manager's Guide. Addison-Wesley. • Reynolds, J., & Stair, R. (2021). Principles of Information Systems (15th ed.). Cengage Learning. • Strauss, J., & Frost, R. (2020). E-Marketing (8th ed.). Routledge. • O'Brien, J. A., & Marakas, G. M. (2021). Management Information Systems (12th ed.). McGraw-Hill Education. • Timmers, P. (1998). Electronic Commerce: Strategies and Models for Business-to-Business Trading. Wiley.	

FYBCA SEMESTER-I
BCA-SEC-116: Office Automation-I

Total Hours: 30

Credits: 2

Course objectives	• To create new document and save the data • To format the text in the document using different formatting tools • To arrange the text into columns and insert different objects into the text document. • To use mail merge on common document.	
Course outcomes	After successful completion of this course, students are expected to: • Aware different word processing tools and has hands on one of them. • Learn different formatting options for text and document. • Embed the object into text document • Understand the rules applied for microbial taxonomy	
Unit	Content	Hours
Unit I	Launch any Word processing tool and navigate the editing screen. ○ Launch Word. ○ Identify the components of the Word window. ○ Edit a document. ○ Save a document. ○ Preview and print a document. ○ Close a document. ○ Locate and open an existing document. ○ Create a new document. ○ Close the Word application. ○ Use Print Preview. Print a document	7
Unit II	Create, edit a Text document and Apply formatting ○ Create a letter. ○ Select text. ○ Cut, copy, and paste text. ○ Find and replace text. ○ Change fonts and font sizes. ○ Apply font styles, character styles, and special character effects. ○ Change the case of text. ○ Highlight text in a document. ○ Insert symbols and special characters. ○ Add bullets, numbering, borders, and shading. ○ Set line and paragraph spacing. ○ Align and indent paragraphs. ○ Insert page breaks. ○ Create and modify headers and footers. ○ Apply paragraph styles. ○ Create outlines.	8

Unit III	Work with columns, pictures, diagrams, and charts and tables. ○ Create and use newspaper columns. ○ Insert pictures. ○ Create diagrams. ○ Create and modify a data chart ○ Create basic tables. ○ Create and format tables. ○ Modify tables. ○ Customize tables. ○ Use special table features. ○ Use table styles. ○ Use tab stops in a table. ○ Convert text to a table. ○ Merge and split table cells.	7
Unit IV	Use the mail merge wizard, Work with drawing objects and graphics ○ Explain the steps of the mail merge process. ○ Define the main document. Select the data source. Merge the main ○ document and data source. ○ Create drawing objects. ○ Add decorative page borders. ○ Use WordArt special text effects. ○ Insert, position, and delete pictures. ○ Insert and edit text boxes. ○ Create and edit an organization chart. ○ Create an equation.	8
Study Resources	● Frandsen T., (2010), Microsoft Office Word 2007, BookBoon ● Curtis F.(2007), Microsoft Office Word 2007 Step by Step ● https://testbook.com/computer-awareness/microsoft-office ● https://documentation.libreoffice.org/assets/Uploads/Documentation/en/GS5.0/PDF/GS5001-IntroducingLibreOffice.pdf ● https://www.teachmint.com/tfile/studymaterial/b-com/ccc/libreofficecalcpdf/e66b485b-3992-44c9-8972-209158129d10	

FYBCA SEMESTER-I
BCA-SEC-117: Practicals on Office Automation-I

Total Hours: 30

Credits: 1

Course objectives	• To acquaint document creation and storing information in proper form. • To study various text formatting options • To learn changing orientation and setting page margins according to the need. • To learn how to print or email multiple recipient form letters.
Course outcomes	After successful completion of this course, students are expected to: • Apply different text formatting options and create effective documents. • Study the page types and its orientation and apply the same wherever required. • Insert header footer as well as apply different styles to the page • Create letters, labels, envelopes, and emails all with personalized data
	Content
1	Introduction to word processing tool environment.
2	Create document, insert and edit the text (Copy, Paste, format painter etc). Demonstrate paragraph formatting.
3	Create document and Apply different text formatting options, insert header, footer, page numbers etc.
4	Create document, set margin, orientation, size, watermark, page color and page border.
5	Create document and convert the text into column format. Change different column options.
6	Prepare mark sheet of your class subjects using table option.
7	Insert chart of marks of students and apply different chart option on it.
8	Create an invitation letter with proper formatting and prepare it for different addresses using mail merge.
Study Resources	• Frandsen T., (2010), Microsoft Office Word 2007, BookBoon • Curtis F.(2007), Microsoft Office Word 2007 Step by Step • https://testbook.com/computer-awareness/microsoft-office • https://documentation.libreoffice.org/assets/Uploads/Documentation/en/GS5.0/PDF/GS5001-IntroducingLibreOffice.pdf • https://www.teachmint.com/tfile/studymaterial/b-com/ccc/libreofficecalcpdf/e66b485b-3992-44c9-8972-209158129d10

Note: At least 06 experiments should be performed.

SEMESTER-II

FYBCA SEMESTER-II

BCA-DSC-121: Programming in C++

Total Hours: 30

Credits: 2

Course objectives	• To study the fundamental programming languages • To know the process logic development • To give the practical knowledge of programming • To efficiently manage memory and work with dynamic	
Course outcomes	After successful completion of this course, students are expected to • Enter basic logic development. • Prepare simple program • Prepare basic programming logic and entries • Obtain basic knowledge of program	
Unit	Content	Hours
Unit I	Introduction and Basics of OOP's • Introduction to Object Oriented Paradigm • Need Object-Oriented Programming • Characteristics of Object-Oriented Programming • Difference of Structured Vs. OOPs • Input/ Output in C++, Data Types, Operators,	7
Unit II	C++ Controls & Functions • Control & Conditional Statements, Function and its components • Different types of parameter passing mechanisms • Pointer as function argument, Recursive function • Function overloading, Inline Function, map function	8
Unit III	Object and Classes • Class declaration in C++, Objects, Constructors and types of constructor (Default constructor, Copy Constructor, Parameterized constructor), Destructor • Friend class Friend Function Overloading • Operator overloading, Overloading Unary & Binary Operators without friend function, Features of operator overloading, • Operators overloading using friend function	7
Unit IV	Inheritance, Templates and Exception • Inheritance- definition, concept, Benefits of Inheritance, Types of Inheritance • visibility modes- Public, Private, Protected, Virtual Base Class • Virtual Functions, Templates & Exception • Virtual Function, Pure Virtual Functions, Abstract classes • Function Templates, Exception handling	8
Study Resources	• W. Balguruswamy, Publication - TMH Object Oriented Programming using C++ • Stroustrup, B. (2013). The C++ Programming Language (4th ed.). Addison-Wesley. • Lippman, S. B., Lajoie, J., & Moo, B. E. (2012). C++ Primer (5th ed.). Addison-Wesley. • Schildt, H. (2017). C++: The Complete Reference (5th ed.). McGraw-Hill Education. • Deitel, P. J., & Deitel, H. M. (2017). C++ How to Program (10th ed.). Pearson. • Prata, S. (2014). C++ Primer Plus (6th ed.). Addison-Wesley. • Stroustrup, B. (2014). Programming: Principles and Practice Using C++ (2nd ed.). Addison-Wesley. • Josuttis, N. M. (2019). C++17 - The Complete Guide. The Comprehensive Guide to C++17 (2nd ed.). Leanpub. • Eckel, B. (2000). Thinking in C++: Introduction to Standard C++, Volume One (2nd ed.). Prentice Hall. • Savitch, W. (2018). Problem Solving with C++ (10th ed.). Pearson.	

FYBCA SEMESTER-II
BCA-DSC-122: Database Management System

Total Hours: 30

Credits: 2

Course objectives	• To study the fundamental DBMS concepts • To know the process of data entry in real life. • To give the practical knowledge of secured data, protection, backup data. • To acquiring Knowledge of Data Manipulation.	
Course outcomes	After successful completion of this course, students are expected to • Enter basic database. • Use simple operation on database. • Effective Data Manipulation • Create database software	
Unit	Content	Hours
Unit I	Database Concept • Introduction of File Processing System, Introduction of DBMS & RDBMS. Difference between File processing system & DBMS, Difference between DBMS & RDBMS. • Applications of DBMS, Overview of DBMS, Components of DBMS, Database Architecture, Types of Database Model.	7
Unit II	Modeling and Database Design • ER model concept Notation for ER diagram Mapping, constraints DBMS, Keys DBMS , Generalization DBMS, Specialization DBMS, Aggregation, Convert ER into table, • Relational Model, Network Model, Hierarchical Model, Entity Relationship Model. • Introduction to DFD , Application of DFD, Characteristics, Symbols, Component • Integrity Constraints: Keys: Super, Candidate, Primary, Foreign Key, Entity Integrity, Referential Integrity, Integrity Constraints.	8
Unit III	Database Design Theory and Normalization • Functional Dependencies, Normal Forms based on Primary Keys, Second and third Normal Forms, Boyce-Cod Normal Form, Multivalued Dependency and Fourth Normal Form, Join Dependencies and Fifth Normal Form.	7
Unit IV	SQL Commands • Introduction to DML, TCL, DDL, DCL, Integrity constraints • Sub Queries & Joins: Sub Queries, view, Sequence, Set Operators, Joins, Inner joins, Equi, Non Equi, Self-join & Outer Joins	8
Study Resources	• Silberschatz, A., Korth, H. F., & Sudarshan, S. (2020). Database System Concepts (7th ed.). McGraw-Hill Education. • Elmasri, R., & Navathe, S. B. (2016). Fundamentals of Database Systems (7th ed.). Pearson. • Garcia-Molina, H., Ullman, J. D., & Widom, J. (2008). Database Systems: The Complete Book (2nd ed.). Pearson. • Connolly, T. M., & Begg, C. E. (2014). Database Systems: A Practical Approach to Design, Implementation, and Management (6th ed.). Pearson. • Ramakrishnan, R., & Gehrke, J. (2002). Database Management Systems (3rd ed.). McGraw-Hill Education. • Date, C. J., & Darwen, H. (2009). Foundation for Future Database Systems: The Third Manifesto (2nd ed.). Addison-Wesley. • Garcia-Molina, H., & Widom, J. (2000). Database Systems: The Complete Book (1st ed.). Prentice Hall. • Rob, P., & Coronel, C. (2019). Database Systems: Design, Implementation, and Management (13th ed.). Cengage Learning. • Coronel, C., Morris, S., & Rob, P. (2016). Database Principles: Fundamentals of Design, Implementation, and Management (2nd ed.). Cengage Learning.	

FYBCA SEMESTER-II

BCA-DSC-123: Practicals on C++ and Database Management System

Total Hours: 60

Credits: 2

Course objectives	- To study the fundamental programming languages - To know the process logic development - To give the practical knowledge of programming. - Acquiring Knowledge of Data Manipulation	
Course outcomes	After successful completion of this course, students are expected to - Enter basic logic development. - Prepare basic programming logic and entries - Obtain basic knowledge of program - Obtain basic Data Store System	
	Content	Hours
1	Write a program to check given number is prime or not.	4
2	Write a program to demonstrate encapsulation using of class.	4
3	Write a program to demonstrate use constructors and Destructor.	4
4	Write a program to demonstrate single inheritance & multiple inheritances.	4
5	Write a program to demonstrate use of friend function & class.	4
6	Write a program to demonstrate use of operator overloading.	4
7	Write a program to demonstrate use of template.	4
8	Write a program to demonstrate use of exception handling.	4
9	Demonstration of creating database and table.	4
10	Defining different types of database constraint and Create table with various constraints as PRIMARY KEY, FOREIGN KEY	4
11	Demonstrate to Controls and Properties.	4
12	Demonstrate to create Records in Table using Form	4
13	Demonstrate to create design form of Order System.	4
14	Demonstrate to create & format reports.	4
15	Demonstrate to design multiple entry Forms with data.	4
	Note: Database Management System practical performed on MS-Access	
Study Resources	W. Balguruswamy, Publication - TMH Object Oriented Programming using C++ - Stroustrup, B. (2013). The C++ Programming Language (4th ed.). Addison-Wesley. - Lippman, S. B., Lajoie, J., & Moo, B. E. (2012). C++ Primer (5th ed.). Addison-Wesley. - Schildt, H. (2017). C++: The Complete Reference (5th ed.). McGraw-Hill Education. - Deitel, P. J., & Deitel, H. M. (2017). C++ How to Program (10th ed.). Pearson. - Prata, S. (2014). C++ Primer Plus (6th ed.). Addison-Wesley. - Silberschatz, A., Korth, H. F., & Sudarshan, S. (2020). Database System Concepts (7th ed.). McGraw-Hill Education. - Elmasri, R., & Navathe, S. B. (2016). Fundamentals of Database Systems (7th ed.). Pearson. - Garcia-Molina, H., Ullman, J. D., & Widom, J. (2008). Database Systems: The Complete Book (2nd ed.). Pearson. - Connolly, T. M., & Begg, C. E. (2014). Database Systems: A Practical Approach to Design, Implementation, and Management (6th ed.). Pearson. - Ramakrishnan, R., & Gehrke, J. (2002). Database Management Systems (3rd ed.). McGraw-Hill Education.	

FYBCA SEMESTER-II

BCA-Minor-124: M-Commerce

Total Hours: 30

Credits: 2

Course objectives	- To study the fundamental e-commerce concepts - To evaluate the benefits and challenges associated with M-commerce. - To know the process of online transaction in real life. - To give the practical knowledge of online marketing, sale-perches, advertisement.	
Course outcomes	After successful completion of this course, students are expected to - Enter basic online transaction. - Use simple digital payments. - Examine the psychological and behavioral aspects of mobile consumers. - Obtain basic knowledge of cashless transaction	
Unit	Content	Hours
Unit I	Mobile Commerce - Introduction of M-Commerce - Types of Mobile Commerce Services - Technologies Of Wireless Business – Benefits and Limitations, - Mobile Marketing & Advertisement, Non- Internet Applications in - M-Commerce – Wireless / Wired Commerce Comparisons.	7
Unit II	M-Commerce Applications - Mobile financial services, Mobile advertising, - Mobile Payment, Mobile Ticketing, - Mobile product location and shopping, Mobile business services, - Mobile auction, Mobile entertainment, Mobile office, - Mobile distance education.	8
Unit III	Business– To– Business Mobile Commerce - Enterprise Enablement - Email and Messaging – Field Force Automation (Insurance, Real Estate, Maintenance, Healthcare) - Field Sales Support (Content Access, Inventory) – Asset Tracking and Maintenance/Management – Remote IT Support Customer Retention (B2C Services, Financial, Special Deals) – Warehouse Automation – Security.	7
Unit IV	Digital Payments (Cashless Payments) - Digital Payment System- Introduction, Advantages, - Mobile Wallets, Bank Pre-Paid Cards, Point of Sale Machines, - Micro ATM's ,Unified Payment Interface, Aadhar Enabled Payment System(AEPS) , - Digital Signatures - Legal positions of Digital Signatures, Procedure & working of Digital Signature technology , Risks and e-Payment System	8
Study Resources	- Barnes, S. J. (2002). M-Commerce: Technologies, Services, and Business Models. Wiley. - Tsalgatidou, A., & Pitoura, E. (Eds.). (2006). Mobile and Ubiquitous Commerce: Advanced E-Business Methods. IGI Global. - Kim, D. J., Ferrin, D. L., & Rao, H. R. (Eds.). (2008). Mobile Commerce: Technology, Theory and Applications. Springer. - Tao, Y., & Liu, L. (2016). Mobile Commerce Applications. CRC Press. - Xiao, B., Hu, X., & Wang, Y. (Eds.). (2018). Mobile Commerce and Wireless Computing Systems. IGI Global. - Thakur, R., Sahoo, S. K., & Obaidat, M. S. (Eds.). (2019). Handbook of Research on Mobile and Wireless Computing. IGI Global. - Balasubramanian, S. (2018). Mobile Commerce: Concepts, Methodologies, Tools, and Applications. IGI Global. - Dholakia, R. R., & Dholakia, N. (2017). Mobile Commerce: Opportunities, Applications, and Technologies of Wireless Business. Routledge. - Mukerji, S., & Tripathi, A. (2012). Handbook of Research on Global Diffusion of Broadband Data Transmission. IGI Global. - Jiang, J., Hua, H., & Chen, X. (2015). Handbook of Research on Ubiquitous Computing Technology for Real Time Enterprises. IGI Global.	

FYBCA SEMESTER-II
BCA-Minor-125: Practicals on M-Commerce

Total Hours: 60

Credits: 2

Course objectives	• To study the fundamental e-commerce concepts. • To evaluate the benefits and challenges associated with M-commerce. • To know the process of online transaction in real life. • To give the practical knowledge of online marketing, sale-perches, advertisement.	
Course outcomes	After successful completion of this course, students are expected to • Enter basic online transaction. • Use simple digital payments. • Obtain basic knowledge of cashless transaction. • Examine the psychological and behavioral aspects of mobile consumers.	
	Content	Hours
1	Mobile Payment Integration and Security & Seamless Mobile Shopping Experience	4
2	Personalized Recommendations and Targeted Offers & Efficient Mobile Checkout Process	4
3	Enhanced Mobile Catalog and Product Display & Mobile Loyalty Programs and Rewards	4
4	Social Media Integration for Mobile Commerce & Location-Based Services and Geo-Targeting	4
5	Mobile Analytics and User Behavior Tracking & Mobile Wallet Integration and Digital Coupons	4
6	Mobile Push Notifications for Order Updates & Responsive Design for Mobile Devices	4
7	Performance Optimization for Mobile Commerce & Mobile App Localization and Internationalization	4
8	Voice Search and Voice Commerce Integration & Mobile Augmented Reality (AR) for Product Visualization	4
9	In-App Messaging and Customer Support & Mobile Order Tracking and Shipment Notifications & Cross-Platform Compatibility for Mobile Commerce Mobile Commerce Accessibility and Inclusive Design.	4
10	Develop a mobile inventory management system that enables real-time inventory tracking.	4
11	Study the Creating Mobile Customer Support Features	4
12	Study the Social Media Integration	4
13	Study the Mobile Shopper Support Features	4
14	Study the Mobile Analytics and Performance Monitoring	4
15	Study the Exploration of Emerging Mobile Technologies	4
Study Resources	• Barnes, S. J. (2002). M-Commerce: Technologies, Services, and Business Models. Wiley. • Tsalgatidou, A., & Pitoura, E. (Eds.). (2006). Mobile and Ubiquitous Commerce: Advanced E-Business Methods. IGI Global. • Kim, D. J., Ferrin, D. L., & Rao, H. R. (Eds.). (2008). Mobile Commerce: Technology, Theory and Applications. Springer. • Tao, Y., & Liu, L. (2016). Mobile Commerce Applications. CRC Press. • Xiao, B., Hu, X., & Wang, Y. (Eds.). (2018). Mobile Commerce and Wireless Computing Systems. IGI Global. • Thakur, R., Sahoo, S. K., & Obaidat, M. S. (Eds.). (2019). Handbook of Research on Mobile and Wireless Computing. IGI Global.	

FYBCA SEMESTER-II
BCA-SEC-126: Office Automation-II

Total Hours: 30

Credits: 2

Course objectives	Student will be able to • Customize the formatting of charts presentation • Deal with shapes and images • Use media in presentation • Create and edit a PivotChart	
Course outcomes	After successful completion of this course students are expected to : • Demonstrating the basic mechanics and navigation of a spreadsheet. • Learning the use and utility of functions and formulas on spreadsheet. • Using clip art to enhance ideas and information in Excel worksheets. • Analyzing data using Pivot Tables and Pivot Charts.	
Unit	Content	Hours
Unit I	Create and Manage Presentations ○ Create a Presentation ○ Insert and Format Slides ○ Modify Slides, Handouts, and Notes ○ Change Presentation Options and Views ○ Configure a Presentation for Print ○ Configure and Present a Slide Show.	7
Unit II	Insert and Format Text, Shapes, and Images ○ Insert and Format Text ○ Insert and Format Shapes and Text Boxes ○ Insert and Format Images ○ Order and Group Objects	8
Unit III	Insert Tables, Charts, SmartArt, and Media ○ Insert and Format Tables ○ Insert and Format Charts ○ Insert and Format SmartArt graphics ○ Insert and Manage Media	7
Unit IV	Apply Transitions and Animations ○ Apply Slide Transitions ○ Animate Slide Content ○ Set Timing for Transitions and Animations	8
Study Resources	• Frandsen T., (2010), Microsoft Powerpoint 2007, BookBoon • Curtis F.(2007), Microsoft Office Powerpoint Step by Step • https://testbook.com/computer-awareness/microsoft-office • https://documentation.libreoffice.org/assets/Uploads/Documentation/en/GS5.0/PDF/GS5001-IntroducingLibreOffice.pdf • https://www.teachmint.com/tfile/studymaterial/b-com/ccclibreofficecalcpdf/e66b485b-3992-44c9-8972-209158129d10	

FYBCA SEMESTER-II
BCA-SEC-127: Practicals on Office Automation-II

Total Hours: 30

Credits: 1

Course objectives	•To aqunt basic knowledge of worksheet •To study various formatting of worksheet •To learn how to use various functions in worksheet •To learn drawing a charts in worksheet
Course outcomes	After successful completion of this course, students are expected to: •Demonstrating the basic mechanics and navigation of an Excel spreadsheet. •Securing information in an Excel workbook •Working knowledge of organizing and displaying large amounts and complex data •Learning formulas, creating charts and graphs that can easily explain or simplify complex information or data.
	Content
1	Create a new presentation and insert different types of slides
2	Insert different shapes and images in presentation and apply formatting on it.
3	Insert tables and charts in presentation.
4	Demonstration on inserting media files in ppt.
5	Apply different slide transition and templates in presentation.
6	Apply animation to shapes and slides.
7	Demonstration of different views in powerpoint.
8	Apply different slide show options in presentation
Study Resources	• Frandsen T., (2010), Microsoft Powerpoint 2007, BookBoon • Curtis F.(2007), Microsoft Office Powerpoint Step by Step • https://testbook.com/computer-awareness/microsoft-office • https://documentation.libreoffice.org/assets/Uploads/Documentation/en/GS5.0/PDF/GS5001-IntroducingLibreOffice.pdf • https://www.teachmint.com/tfile/studymaterial/b-com/ccclibreofficecalcpdf/e66b485b-3992-44c9-8972-209158129d10

Note: At least 06 experiments should be performed.