Interdisciplinary Courses of Computer Science & Applications

Session 2020-21

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester- I

Session 2020-21

Course Code: BARM-1134

BCSM-1134

BECM-1134

COMPUTER SCIENCE

(COMPUTER FUNDAMENTALS & PC SOFTWARE)

(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Fundamentals of Computer: Introduction to computer, Applications of computer, Components of computers (Input unit, Output Unit, Memory Unit & CPU), type of Software, Translators (compiler, interpreter, assembler), Booting a System.

UNIT II

Input & Output Devices: Keyboards, Mouse, Joystick, Track Ball, Light Pen and Data Scanning devices (scanner, OCR, OMR, MICR, Bar Code Reader, Card Reader), Monitor, Printers (laser printer, dot matrix printer, ink jet printer).

Memories: Primary Memory-RAM and ROM. **Secondary Memory**- Hard Disk, CD, DVD.

Introduction to Windows based operating system and Desktop icons.

UNIT III

MS–Word: Introduction to word, Parts of window of word (Title bar, menu bar, status bar, and ruler),Understanding the Ribbon, Use of Office Button and Quick Access Toolbar, Creation of new documents, opening document, insert a document into another document. Page setup, margins, gutters, font properties, Alignment, page breaks, header &footer, deleting, moving, replace, editing text in document, saving a document, spell checker, printing a document. Creating a table, entering and editing, Text in tables. Changing format of table, height, width of row/column. Editing, deleting Rows, columns in table. Adding picture, page colors and Watermarks, Borders and shading, Templates, wizards, Mail Merge.

UNIT IV

MS-PowerPoint: Introduction to PowerPoint, Exploring menus, starting a new slide, saving presentation, moving/rearranging slides, printing slides. Applying theme to presentation, Views (slide View, slide sorter, notes view, outline view), Formatting & enhancing text formatting. Creating a graph, displaying slide show, adding multimedia. Slide transitions, applying Animation, Timing slide display, adding movies & sounds. Using a pick look Wizards to change format.

References/Textbooks:

1. *Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
2. *Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications, 2017.*

3.Joyce Cox, Joan Lambert and Curtis Frye, Microsoft office Professional 2010 Step by Step, Microsoft Press, 2010.

4.V. Rajaraman, Neeharika Adabala, Fundamentals of Computers, PHI Learning, 2015.

5.P.K. Sinha, Computer Fundamentals, BPB Publications, 2004.

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

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester- I

Session 2020-21

COMPUTER SCIENCE

(COMPUTER FUNDAMENTALS & PC SOFTWARE)

(PRACTICAL)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Practical based on Windows, MS Word, MS PowerPoint.

Bachelor of Arts / Bachelor of Science (Computer Science) / Bachelor of Science (Economics) Semester- II

(Session 2020-21)

Course Code: BARM-2134
BCSM-2134
BECM-2134

COMPUTER SCIENCE
(PROGRAMMING IN C)

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend different programming constructs involved in C programming.

CO2: Design symbolic representation of a problem and its solution through tools like algorithms, flowcharts, etc.

CO3: Design and control the execution of a program.

CO4: Apply programming concepts to provide solution for problems associated with different problem domains.

CO5: Identify storage classes associated with variables.

Bachelor of Arts / Bachelor of Science (Computer Science) /
Bachelor of Science (Economics) Semester- II
(Session 2020-21)
Course Code: BARM-2134
BCSM-2134
BECM-2134

COMPUTER SCIENCE
(PROGRAMMING IN C)
(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**
Theory: 50
Practical: 30
CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Data Representation, Introduction to Number Systems and Character Codes, Flow Charts, Problem Analysis, decision tables, pseudo codes and, algorithms.

UNIT–II

Programming Using C:
Basics of C: Introduction to C, Applications and Advantages of C, Tokens, Types of Errors

Data Types: Basic & Derived Data Types, User Defined Data Types, Declaring and initializing variables.

Operators and Expressions: Types of operators (Unary, Binary, Ternary), Precedence and Associativity

Data I/O Functions: Types of I/O function, Formatted & Unformatted console I/O Functions

UNIT–III

Control Statements: Jumping, Branching and Looping–Entry controlled and exit controlled, Advantages/Disadvantages of loops, difference between for, while and do–while.

Arrays: Types of Arrays, One Dimensional and Two-Dimensional Arrays.

Strings: Introduction to Strings and String functions, array of strings.

UNIT-IV

Functions: User Defined & Library Function, Function (Prototype, Declaration, Definition), Methods of passing arguments, local and global functions, Recursion.

Storage Classes: Introduction to various storage classes, scope and lifetime of a variable, Storage class specifiers (auto, register, static, extern), advantages and disadvantages.

Structure and Union: Introduction to structure and union, pointers with structure.

References/Textbooks:

1. E. Balagurusamy, Programming in ANSI C, Tata McGraw-Hill (2002), 5th edition.

2. Stephen G. Kochan, Programming in C, Pearson Education (2015), 4th edition.

3. Rachhpal Singh K.S. Kahlon, Gurvinder Singh, Programming in C, Kalyani Publishers (2011).

4. Yashwant Kanetkar, Let us C, BPB Publications (2020), 17th edition.

5. R.S. Salari, Application Programming in C, Khanna Book Publishing (2012), 4th edition.

6. Anshuman Sharma, Learn programming in C, Lakhanpal Publishers (2016), 7th edition.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester- II

(Session 2020-21)

Course Code: BARM-2134

BCSM-2134

BECM-2134

COMPUTER SCIENCE

(PROGRAMMING IN C)

(PRACTICAL)

Examination Time: (3+3) Hrs.

Max. Marks: 100
Theory: 50
Practical: 30
CA: 20

Practical based on Programming in C

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester- III

Session 2020-21

Course Code: BARM-3134

BCSM-3134

BECM-3134

COMPUTER SCIENCE

(COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS)

Course Outcomes:

After passing this course the student will be able to:

CO1: Understand numerical methods, nonlinear equations, interpolation methods and Simultaneous Solution of Equations.

CO2: Learn about Interpolation and Curve Fitting and Numerical differentiation.

CO3: Learn Correlation, Regression, Bivariate & Multivariate distribution and Interpretation of Trend Analysis.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester- III

Session 2020-21

Course Code: BARM-3134

BCSM-3134

BECM-3134

COMPUTER SCIENCE

(COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS)

(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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. The students can use Non–programmable/ scientific & Non–storage type calculator.

Unit –I

Introduction:

1. Numerical methods, Numerical methods versus numerical analysis, Errors and Measures of Errors.

2. Bisection method, false position method and Newton Raphson method.

3. Simultaneous Solution of Equations, Gauss Elimination Method, Gauss Jordan method, Gauss Siedel Method.

Unit -II

4. Interpolation and Curve Fitting, Lagrangian Polynomials, Newtons Methods: Forward Difference Method, Backward Difference Method and Divided Difference Method.

5. Numerical Integration: Traperzoidal Rule, Simpson's 1/3 Rule Simpson's 3/8 Rule.

Unit -III

6. Measure of Central Tendency, Preparing frequency distribution table, Mean Arithmetic, Mean Geometric, Mean Harmonic, Mean, Median and Mode.

7. Measure of dispersion, Range, Mean deviation, Standard deviation, co-efficient of variation, Moments, Skewness, Kurtosis.

Unit –IV

8. Correlation, Bivariate Distribution, Multivariate distribution.

9. Regression B.C., Linear Regression.

References/ Textbooks:

1. *B.S. Grewal, Numerical Methods in Engineering & Science: With Programs in C, C++ & MATLAB, Khanna Publisher, 2014.*
2. *V. Rajaraman, Computer Oriented Numerical Methods, Prentice Hall of India Private Ltd., 2009.*

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

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester- IV

(Session 2020-21)

Course Code: BARM-4134

BCSM-4134

BECM-4134

COMPUTER SCIENCE

(DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++)

Course Outcomes:

After passing course the student will be able to:

CO1: Write, compile and debug programs in C++, use different data types, operators and I/O function in a computer program.

CO2: Comprehend the concepts of Object-Oriented Programming Paradigm.

CO3: Comprehend various sorting and searching algorithms.

CO4: Implement the basic data structures and solve problems using fundamental algorithms.

CO5: Analyze complexity of algorithms to determine their efficiency.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester- IV

(Session 2020-21)

Course Code: BARM-4134

BCSM-4134

BECM-4134

COMPUTER SCIENCE

(DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++)

(THEORY)

Examination Time: (3+3) Hrs.

Max. Marks: 100
Theory: 50
Practical: 30
CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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. The students can use Non–programmable/ scientific & Non–storage type calculator.

UNIT–I

Data Structure: Introduction to elementary Data Organization, Common Operation on Data Structures, Algorithm Complexity, Big O Notation, Time-Space Tradeoff between Algorithm.

Arrays: Array Defined, Representing Arrays in memory, various operations on linear arrays, Multi-Dimensional arrays.

Linked Lists: Types of Linked Lists, representing linked list in memory, advantages of using linked lists over arrays, various operations of linked lists.

UNIT–II

Stacks: Description of stack structure, Implementation of stack, using arrays and linked lists, application of stack-converting Arithmetic expression from infix notational to polish and their subsequent evaluation, quicksort technique to sort an array.

Queues: Description of queue structure, Implementation of queue using arrays and linked lists, description or priorities of queues, deques.

Sorting and Searching: Sorting Algorithms, bubble sort, selection sort, insertion sort, quick sort, merge sort, heap sort, searching Algorithms, linear search and binary search.

UNIT–III

Object Oriented Programming: Objects & Classes, Constructor & Destructor, Operator Overloading, overloading unary operators, overloading binary operators, Data conversion, Pitfalls of operator overloading and conversion.

UNIT-IV

Inheritance, Derived class and base class, Derived class constructor. Overloading member functions, Inheritance in the English distance class, class hierarchies, Public & Private inheritance, Level of inheritance, Polymorphism, problems with single inheritance, multiple inheritance.

References/Textbooks:

1. Seymour Lipschutz, Data Structures, Schaum's Outline Series, McGraw Hill Company (2014) 1st edition (Revised).

2. Aaron M. Tenenbaum, Data Structures using C and C++, Pearson Education (2015), 2nd edition.

3. Yashavant Kanetkar, Data Strucutre Through C++, BPB Publications (2003).

4. Varsha H. Patil, Data Structures Using C++,Oxford; Illustrated edition (2012).

5. R. S. Salaria, Data Structures and Algorithms Using C++, Khanna Publishing (2018), 3rd edition.

6. S.K. Srivastava and Deepali Srivastava, Data Structures through C, BPB Publications (2004)

7. Yedidyah Langsam, Augestein and Tanenbaum, Data Structures using C and C++, Pearson Education India (2015), 2nd Edition

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester- IV

(Session 2020-21)

Course Code: BARM-4134
BCSM-4134
BECM-4134

COMPUTER SCIENCE
(DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++)
(PRACTICAL)

Examination Time: (3+3) Hrs.

Max. Marks: 100
Theory: 50
Practical: 30
CA: 20

Practical based on Data Structures & Programming Language Using C++

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–V

Session 2020-21

COURSE CODE: BARM-5134

BCSM-5134

BECM-5134

COMPUTER SCIENCE

(DATA BASE MANAGEMENT SYSTEM & ORACLE)

Course Outcomes:

After passing course the student will be able to:

CO1: Understand data, database and database models.

CO2: Gain knowledge of normalization and transaction control.

CO3: Gain knowledge of core database language-SQL.

CO4: Have a basic understanding of concepts of PL/SQL.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–V

Session 2020-21

COURSE CODE: BARM-5134

BCSM-5134

BECM-5134

COMPUTER SCIENCE

(DATA BASE MANAGEMENT SYSTEM & ORACLE)

(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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.The students can use only Non–programmable & Non–storage type calculator

UNIT–I

DBMS:

Introduction to database management system, Components of DBMS, Three Level Database system Architecture, ER. Diagrams.

Data Models, Hierarchical Model, Network Model and Relational Model, Relational Databases, Relational Algebra and Calculus.

UNIT–II

Normalisation: Introduction, Normal Forms: 1NF, 2NF, 3NF, BCNF, 4NF, 5NF.

Database Security: Protection, Integrity.

Recovery: Introduction, Recovery Techniques: Log Based Recovery and Shadow Paging.

Concurrency Control: Introduction, Concurrency control with locking methods, Two Phase locking, Precedence graph, Concurrency control based on timestamp ordering, Concurrency control based on optimistic scheduling.

UNIT–III

SQL * PLUS:

Introduction to Oracle 10g, Features of Oracle 10g.

SQL – DDL, DML, DCL,TCL,constraints, Join methods & Sub query, Union, Intersection,Built in Functions, View, and Security amongst users, Sequences, indexing object

UNIT–IV

PL/SQL:

Introduction to PL/SQL.
Cursors – Implicit & Explicit.
Procedures, Functions & Packages
Database Triggers.

References/Textbooks:

1. *C. J. Date, An Introduction to Database Systems, Pearson Education 2000.*
2. *F. Korth & Silverschatz, A., Database System Concepts, Tata McGraw Hill, 2010.*
3 *Elmasri & Navathe, Fundamentals of Database Systems, Addison-Wesley, 2011.*
4. *B.C.Desai, An Introduction to Database Management System, Galgotia Publication, 1991.*
5. *Ivan Bayross, SQL, PL/SQL - The Programming Language of Oracle, BPB Publications, 2010.*
6. *Gurvinder Singh, Parteek Bhatia, Simplified Approach to DBMS, Kalyani Publishers, 2016.*
7. *Anshuman Sharma, Fundamentals of DBMS, Lakhanpal Publications, 4th Edition.*

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

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–V

Session 2020-21

COURSE CODE: BARM-5134

BCSM-5134

BECM-5134

COMPUTER SCIENCE

(DATA BASE MANAGEMENT SYSTEM & ORACLE)

(PRACTICAL)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Lab based on Oracle 10g.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–VI

(Session 2020-21)

COURSE CODE: BARM-6134
BCSM-6134
BECM-6134

COMPUTER SCIENCE

(INFORMATION TECHNOLOGY)

Course Outcomes:

After passing course the student will be able to:

CO1: Identify usage of various communication media.

CO2: Describe, contrast and compare different types of Operating System.

CO3: Acquaint the usage of various information systems.

CO4: Comprehend client and server model.

CO5: Identify different career opportunities in IT field.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–VI

(Session 2020-21)

COURSE CODE: BARM-6134
BCSM-6134
BECM-6134

COMPUTER SCIENCE

(INFORMATION TECHNOLOGY)

(Theory)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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. The students can use only Non–programmable & Non–storage type calculator

UNIT–I

Data & Network Communication: Communication media: Twisted pair, Coaxial, Fiber optics, Wireless (Line of Sight & Satellite), Network Advantages, Types & Topologies, Communication using Network protocol/Network Interface card (NP/NIC), Transmission & Communication protocol/protocol (TCP/IP), Moderns

UNIT–II

Internet : Internet basics**,** its uses and applications. System Development Process & System development Tools.

Information Technology: Introduction to IT & its components, Information systems, Components of Computer based information systems.

UNIT–III

Information Systems: Management Information System, Decision Support System, Expert System, Functional information System, Transaction Processing System.

Careers in Computers: Role of Programmers, Program analysis, System Analyst, System Administrators, System Managers, System Integrators, DTP Manager & Administrators, MIS Director.

UNIT–IV

Operating Systems: Types of Operating systems: Multiuser, Multitasking & Multiprogramming and their examples.

Linux Commands : alias,cat,cd,chmod,chown,curl,df,echo,exit,find,free,whoami,grep ,cal, who, pwd etc.

Fundamental of Client Server: Basics of Client Server model and its applications. Designing a Client Server model by Creating Database Server and networking O.S. Server.

References/Textbooks:

1. Peter Norton, Introduction to Computers, McGraw Hill (2017), 7th edition.

2. Patrick, G.Mckeown, Living with the Computers, Harcourt College Pub (1990) 3rd edition.

3. Hussain & Hussain, Computer: Technology, Applications & Social Implications, PHI Learning (2006)

4. Behrouz A. Forouzan, Data Communications & Networking, McGraw-Hill Education (2012), 5th edition.

5. Andrew S. Tanenbaum, Computer Network, Prentice Hall (2010), 5th edition.

6. Abraham Silberschatz, Greg Gagne, Peter B. Galvin, Operating System Concepts, Wiley Publishers (2018), 10th edition.

7. *Yashavant Kanetkar, Unix Shell Programming, BPB Publications (2003), 1st edition.*

Bachelor of Arts / Bachelor of Science(Economics) Semester I

Session 2020-21
COURSE CODE: BARM-1124
BECM-1124

COMPUTER APPLICATION (VOCATIONAL)
(COMPUTER FUNDAMENTALS & PC SOFTWARE)

Course Outcomes:

After passing this course the student will be able to:

CO1: gain knowledge about various generations of computers.

CO2: understand the functionalities of hardware and software parts of the computer system.

CO3: make use of computer as per the need.

CO4: use and configure essential office applications including word processing, spreadsheets etc.

Bachelor of Arts / Bachelor of Science(Economics) Semester I

Session 2020-21
COURSE CODE: BARM-1124
BECM-1124

COMPUTER APPLICATION (VOCATIONAL)
(COMPUTER FUNDAMENTALS & PC SOFTWARE)
(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Fundamentals of Computer: Introduction to computer, Applications of computer, Components of computers (Input unit, Output Unit, Memory Unit & CPU), type of Software, Translators (compiler, interpreter, assembler), Booting a System.

UNIT II

Input & Output Devices : Keyboards, Mouse, Joystick, Track Ball, Light Pen and Data Scanning devices (scanner, OCR, OMR, MICR, Bar Code Reader, Card Reader), Monitor, Printers (laser printer, dotmatrix printer, ink jet printer).

Memories: Primary Memory-RAM and ROM. **Secondary Memory** - Hard Disk, CD, DVD.

Introduction to Windows based operating system and Desktop icons.

UNIT III

MS–Word: Introduction to word, Parts of window of word (Title bar, menu bar, status bar, and ruler), Understanding the Ribbon, Use of Office Button and Quick Access Toolbar, Creation of new documents, opening document, insert a document into another document. Page

setup, margins, gutters, font properties, Alignment, page breaks, header & footer, deleting, moving, replace, editing text in document, saving a document, spell checker, printing a document. Creating a table, entering and editing, Text in tables. Changing format of table, height, width of row/column. Editing, deleting Rows, columns in table. Adding picture, page colors and Watermarks, Borders and shading, Templates, wizards, Mail Merge.

UNIT IV

MS-PowerPoint: Introduction to PowerPoint, Exploring menus, starting a new slide, saving presentation, moving/rearranging slides, printing slides. Applying theme to presentation, Views (slide View, slide sorter, notes view, outline view), Formatting & enhancing text formatting. Creating a graph, displaying slide show, adding multimedia. Slide transitions, applying Animation, Timing slide display, adding movies & sounds. Using a pick look Wizards to change format.

References/Textbooks:

1. *Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
2. *Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications, 2017.*
3. *Joyce Cox, Joan Lambert and Curtis Frye, Microsoft office Professional 2010 Step by Step, Microsoft Press, 2010.*
4. *V. Rajaraman, Neeharika Adabala, Fundamentals of Computers, PHI Learning, 2015.*
5. *P.K. Sinha, Computer Fundamentals, BPB Publications, 2004.*

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

Bachelor of Arts / Bachelor of Science(Economics) Semester I

Session 2020-21
COURSE CODE: BARM-1124
BECM-1124

COMPUTER APPLICATION (VOCATIONAL)
(COMPUTER FUNDAMENTALS & PC SOFTWARE)
(PRACTICAL)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Practical based on Windows, MS Word, MS PowerPoint.

Bachelor of Arts / Bachelor of Science (Economicsi) Semester II

(Session 2020-21)
COURSE CODE: BARM-2124
BECM-2124

COMPUTER APPLICATION (VOCATIONAL)
(PROGRAMMING USING C)

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend different programming constructs involved in C programming.

CO2: Design symbolic representation of a problem and its solution through tools like algorithms, flowcharts, etc.

CO3: Design and control the execution of a program.

CO4: Apply programming concepts to provide solution for problems associated with different problem domains.

CO5: Identify storage classes associated with variables.

Bachelor of Arts / Bachelor of Science(Economics) Semester II

(Session 2020-21)
COURSE CODE: BARM-2124
BECM-2124

COMPUTER APPLICATION (VOCATIONAL)
(PROGRAMMING USING C)
(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Data Representation, Flow Charts, Problem Analysis, Decision tables, Pseudo codes and Algorithms.

Programming Using C:
Basics of C: Introduction to C, Applications and Advantages of C, Tokens, Types of Errors
Data Types: Basic & Derived Data Types, User Defined Data Types, Declaring and initializing variables.

UNIT-II

Operators and expressions: Types of operators **(**Unary, Binary, Ternary), Precedence and Associativity

Data I/O Functions: Types of I/O function, Formatted & Unformatted console I/O Functions

Control Statements: Jumping, Branching and Looping–Entry controlled and exit controlled, Advantages/Disadvantages of loops, difference between for, while and do–while.

UNIT-III

Arrays: Types of Arrays, Advantages/Disadvantages of arrays. Insertion, Deletion, Searching and sorting operations on array

Strings: Introduction to Strings and String functions, array of strings.

Functions: User Defined & Library Function, Function (Prototype, Declaration, Definition), Methods of passing arguments, local and global functions, Recursion.

UNIT-IV

Storage classes: Introduction to various storage classes, scope and lifetime of a variable, Storage class specifiers (auto, register, static, extern), advantages and disadvantages.

Pointers: Introduction, Advantages/Uses of pointers, Limitations of pointers, Difference between void pointer and Null pointer, Pointer arithmetic, operators not allowed on pointers, Types of Pointer**,** Passing Pointers to function, concept of pointer to pointer.

Structure and Union: Introduction to structure and union, pointers with structure**.**

References/Textbooks:

1. E. Balagurusamy, Programming in ANSI C, Tata McGraw-Hill (2002), 5th edition.

2. Stephen G. Kochan, Programming in C, Pearson Education (2015), 4th edition.

3. Rachhpal Singh K.S. Kahlon, Gurvinder Singh, Programming in C, Kalyani Publishers (2011).

4. Yashwant Kanetkar, Let us C, BPB Publications (2020), 17th edition.

5. R.S. Salari, Application Programming in C, Khanna Book Publishing (2012), 4th edition.

6. Anshuman Sharma, Learn programming in C, Lakhanpal Publishers (2016), 7th edition.

Bachelor of Arts / Bachelor of Science(Economics) Semester II

(Session 2020-21)
COURSE CODE: BARM-2124
BECM-2124

COMPUTER APPLICATION (VOCATIONAL)
(PROGRAMMING USING C)
(PRACTICAL)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Lab based on Programming Using C

Bachelor of Arts / Bachelor of Science(Economics) Semester III

Session 2020-21
COURSE CODE: BARM-3124
BECM-3124

COMPUTER APPLICATIONS (VOCATIONAL)
(OPERATING SYSTEM)

Course Outcomes:

After passing this course the student will be able to:

CO1: Understand the basic knowledge of operating system, its types and functions.

CO2: Have knowledge of Unix operating system and its uses.

CO3: Gain knowledge about piping, filters, batch processing, shell programming and vi editors.

Bachelor of Arts / Bachelor of Science(Economics) Semester III

Session 2020-21
COURSE CODE: BARM-3124
BECM-3124

COMPUTER APPLICATIONS (VOCATIONAL)
(OPERATING SYSTEM)
(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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 Operating System, Types of Operating systems: Multiuser, Multitasking & Multiprogramming, Functions of Operating System, Booting a System, Language Processors: Compiler, Assembler, Interpreter, Linker and Loader.

1. CPU Scheduling (For First come First serve, Shortest Job First, Priority, Round Robin Scheduling).

UNIT-II

2. Memory Management (Logical address space and physical address space, schemes).

3. File Management.

4. I/O Device Management.

5. Data Management.

6. Security.

UNIT-III

Introduction to Unix**,** Features and Benefits of Unix, Components of Unix (Kernel, Shell), UNIX file system (Data Block, list, super block, boot block), Types of Files (Ordinary, Directory and Special Files), Login and Logout from Unix Session, Types of Shells (Bourne, c-shell, Korn-shell), Shell as a command interpreter.

UNIT–IV

Simple Directory and File Commands Cat, is, in, chmod, mail, who, whoami, cal, pwd, date, ps, mkdir, cd, rmdir, rm, tput, clear. Piping, filters, shell programming (echo, read, case constructs)

Editors (vi): Commands for opening, inserting, modifying, deleting and saving files.

References/Textbooks:

1. *Avi Silberschatz, Peter Baer Galvin, Greg Gagne, Operating System Concepts, Wiley, 2013.*
2. *Charles Crowley, Operating Systems: A Design-Oriented Approach, Tata McGraw Hill, 2001.*
3. *Deitel, An Introduction to Operating Systems, Second Edition, Addison Wesley, 1990.*
4. *William Stallings, Operating Systems: Internals and Design Principles, Pearson Education Limited, 2014.*
5. *Anshuman Sharma, Fundamentals of Operating System, Lakhanpal Publishers, 2nd Edition.*

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

Bachelor of Arts / Bachelor of Science(Economics) Semester III

Session 2020-21
COURSE CODE: BARM-3124
BECM-3124

COMPUTER APPLICATIONS (VOCATIONAL)
(OPERATING SYSTEM)
(PRACTICAL)

Practical based on UNIX.

Bachelor of Arts / Bachelor of Science(Economics) Semester IV

(Session 2020-21)
COURSE CODE: BARM-4124
BECM-4124

COMPUTER APPLICATIONS (VOCATIONAL)
(RELATIONAL DATA BASE MANAGEMENT SYSTEMS & ORACLE)

Course Outcomes:

After passing this course the student will be able to:

CO1: Illustrate the concept of database normalization and its various forms.

CO2: Apply SQL to design basic to intermediate level of databases.

CO3: Identify the importance of security in database management system.

CO4: Comprehend the concept of PL/SQL and its relationship with SQL.

Bachelor of Arts / Bachelor of Science(Economics) Semester IV

(Session 2020-21)
COURSE CODE: BARM-4124
BECM-4124

COMPUTER APPLICATIONS (VOCATIONAL)
(RELATIONAL DATA BASE MANAGEMENT SYSTEMS & ORACLE)

(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Basic Concepts: An overview of Database Management, (database, database system, why database). An architecture for a database system (levels of the architecture, mapping, data independence), DBA, Definition of CODD's Rules

Normalization of Data: First, Second and Third Normal form

Database Models : Hierarchical, Network, Relational

Introduction to Relational database systems

UNIT II

ORACLE 10g: Introduction to Oracle

Data Types: Char, numbers, date long, raw, long raw.

DDL Commands of SQL: Create Tables, Constraints, Alter Table, Drop Table, Rename.

Data Manipulation Language: Insert Into, Update Statement, Delete Statement, Select statement (Select distinct, Select from where, Select from where order by, Select group by clause, Select Group by having clause).
Transaction Control Language: Roll back, Savepoint, Commit.

UNIT III

Built in Functions- Aggregate Functions (Sum, Avg, max, min, count), Character Functions (Lower, Upper, Length, Substr, RPAD, LPAD), Arithmetic Functions (Round, Trune, Sqrt, Mod, Abs, Sine) Date and Time Functions and Other Miscellaneous Functions (Add-months, Month-between, NVL, NVL2, decode) & Conversion Functions (to-char,to-number, to-date).

Join methods & Sub query, Union, Intersection, Minus, Views, Security amongst users.

UNIT IV

PL/SQL: Introduction to PL/SQL, Relationship between SQL & PL/SQL, Advantages, block structure, Valuable and Constant declaration, Declaration using attributes %type attribute, control statements.

References/Textbooks:

1. Silberschatz, Korth & Sudarshan, Database Systems Concepts, McGraw-Hill Inc.(2020), 7th edition.

2. C.J. Date, An Introduction of Database System, Addison-Wesley Publishing co. (2003), 8th edition.

3. Anshuman Sharma, Fundamentals of DBMS, Lakhanpal Publishers (2016), 4th edition.

4. Ivan Bayross, SQL/PL/SQL. The Programming Language of Oracle, BPB Publications(2010), 4th edition.

5. Ramez Elmasri and Shamkant Navathe, Fundamentals of Database Systems, Pearson Education (2015), 7th edition.

6. P.S. Gill, Database Management Systems, Dreamtech Press (2019), 2th edition.

Bachelor of Arts / Bachelor of Science(Economics) Semester IV

(Session 2020-21)

COURSE CODE: BARM-4124
BECM-4124

COMPUTER APPLICATIONS (VOCATIONAL)
(RELATIONAL DATA BASE MANAGEMENT SYSTEMS & ORACLE)

(PRACTICAL)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Practical based on Relational Data Base Management System & ORACLE

Bachelor of Arts / Bachelor of Science(Economics) Semester V

Session 2020-21
COURSE CODE: BARM-5124
BECM-5124

COMPUTER APPLICATIONS (VOCATIONAL)
(INTERNET AND WEB DESIGNING)

Course Outcomes:

After passing course the student will be able to:

CO1: Understand Internet basics and it's working.

CO2: Gain knowledge of email service on different mail servers.

CO3: Understand different Internet protocols and search engines.

CO4: Have knowledge of basic web designing using markup languages.

Bachelor of Arts / Bachelor of Science(Economics) Semester V

Session 2020-21
COURSE CODE: BARM-5124
BECM-5124

COMPUTER APPLICATIONS (VOCATIONAL)
(INTERNET AND WEB DESIGNING)
(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for the Paper Setters:–
Eight questions of equal marks (10 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

Internet: Introduction, its evolution, working, IP Address, DNS and its classification, working of DNS, Internet Services, ISP, Types of internet connection, Internet Security, Advantages, Disadvantages and Uses of Internet.

Search Engines: Introduction, its working, searching using google, web directory, Meta search engines.

UNIT – II

E–Mail: Introduction, its working, E-mail protocols: SMTP, POP, IMAP, Structure of E-mail, Operations on E-mail, Address Book, Signature, File attachment, MIME, Web based E-mail, Spams, Advantages and limitations of E-mail

Browsers: Introduction, Features of Internet Explorer and Google Chrome.

UNIT – III

HTTP: HTTP Protocol and its structure

WWW: Introduction and its working

TCP/IP Protocols: PPP, SLIP

FTP: Introduction, its working, FTP Commands, FTP Session, Advantages and Disadvantages of FTP

UNIT – IV

HTML and Web Designing: Introduction, Structure and creation of HTML document, Formatting Text, Lists, Font element, Advantages and Disadvantages of HTML, Hyperlinks, Images, Tables, Frames, Forms.

References/Textbooks:

1. *Keith Sutherland, Understanding the Internet: A Clear Guide to Internet Technologies, Butterworth-Heinemann, 2000.*
2. *S. K. Bansal, Internet Technologies, APH Publishing Corporation, 2002.*
3. *Forouzan B., Data Communications and networking, McGraw Hill, 2007.*

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

Bachelor of Arts / Bachelor of Science(Economics) Semester V

Session 2020-21
COURSE CODE: BARM-5124
BECM-5124

COMPUTER APPLICATIONS (VOCATIONAL)
(INTERNET AND WEB DESIGNING)
(PRACTICAL)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Practical Based on Internet and Web Designing.

Bachelor of Arts / Bachelor of Science(Economics) Semester VI

(Session 2020-21)
COURSE CODE: BARM-6124
BECM-6124

COMPUTER APPLICATIONS (VOCATIONAL)
(BUSINESS DATA PROCESSING)

Course Outcomes:

After passing course the student will be able to:

CO1: Identify the impact of data and information on working of various organizations.

CO2: Comprehend different types of Data Processing Methods.

CO3: Design triggers and cursors in database management system.

CO4: Apply function and formulas in spreadsheets for data processing.

Bachelor of Arts / Bachelor of Science(Economics) Semester VI

(Session 2020-21)
COURSE CODE: BARM-6124
BECM-6124

COMPUTER APPLICATIONS (VOCATIONAL)
(BUSINESS DATA PROCESSING)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for the Paper Setters:–
Eight questions of equal marks (10 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 Data Processing.

Need of Computers in Business.

Characteristics of Business Organization and Use of computers in various work areas of business like: Payroll System, Inventory Control, Online Reservation, Computer in Banks and Computer Application in Educational Institutions

UNIT–II

Data Processing Methods: Batch Processing, Online Systems, Time Sharing, Real Time Systems and Distributed Processing

File Organization: Types of Files (Master, Transaction, Work, Backup, Audit Files), File Organization (Serial, Sequential, Indexed Sequential, Direct Assess Files).

UNIT–III

Spreadsheets (Data Analysis Package): Introduction to Spreadsheets, Creating a simple worksheet, Computations in a Worksheet, Printing the Worksheet, Graphs and What if Analysis (Data sort, fill, query, filter)
Iterative controls: Simple Loops (Loop–end loop), Numeric FOR Loops and While Loops

Introduction and Advantages of procedures and functions with examples.

UNIT–IV

Introduction to database Triggers: Creation a database trigger with example, Enable and disable database trigger and Drop a database trigger

Introduction to Cursors: Types of Cursors, General Cursor attributes, Implicit Cursors, Explicit Cursors: Declaring an Explicit Cursor, Opening an Explicit Cursor, Fetching Records, Closing the Cursor.

References:

1. Murdick & Ross, Introduction to Management Information Systems, Prentice Hall (1977).

2. Muneesh Kumar, Business Information Systems, Vikas Publishing (1998), 1st edition.

3. Silberschatz, Korth & Sudarshan, Database Systems Concepts, McGraw-Hill Inc.(2020), 7th edition.

4. Anshuman Sharma, Fundamentals of DBMS, Lakhanpal Publishers (2016), 4th edition.

5. Rachhpal Singh, Gurvinder Singh, Windows based computer courses, Kalyani Publishers (2011).

6. Peter Norton, Introduction to Computers, McGraw Hill Education (2017), 7th edition.

Bachelor of Commerce (Pass.) Semester – I

(Session 2020-21)
Course Code: BCRM–1127
COMPUTER FUNDAMENTALS

COURSE OUTCOMES:

After passing this course the student will be able to:

CO1: understand the basic knowledge of computer and its uses.

CO2: gain knowledge about office tools like word processing, spreadsheets, etc.

CO3: learn basic word processing skills such as text input formatting, editing, cut, copy, paste, spell check, margin, printing, charts etc.

CO4: use spreadsheet application for data organization and manipulation.

Bachelor of Commerce (Pass.) Semester – I

(Session 2020-21)
Course Code: BCRM–1127
COMPUTER FUNDAMENTALS

Examination Time: (3+3) Hours

Max. Marks: 50
Theory: 25
Practical: 15
CA: 10

Instructions for Paper Setter -

Eight questions of equal marks (5 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: Computer as System, Features, Computer Memory –Primary (RAM & ROM) and Secondary (Hard Disk, CD, DVD), Storage Devices (Magnetic and Optical).

Computer Applications: Data Processing, Information Processing, Commercial, Office Automation, Industry, Healthcare, Education, Graphics and Multimedia

UNIT-II

Microsoft Word: Introduction to word, features, Parts of window of word (Title bar, menu bar, ribbon, office button, status bar, and ruler), creation of new documents, opening document, insert a document into another document. Page setup, margins, gutters, font properties, Alignment, page breaks, header and footer, deleting, moving, replace, editing text in document, saving a document, spell checker, printing a document.

UNIT-III

Microsoft Word: Creating a table, entering and editing text in tables, changing format of table, height, width of row/column, adding and deleting rows/columns, adding picture and shapes, page colors and watermarks, borders, shading, templates, wizards and mail merge

Microsoft Excel: Introduction to worksheet, features, creating a new workbook, manual math formulas (average, count, etc.), use “cell references” with formulas.

UNIT IV

Microsoft Excel: Creation of graphs, editing it and formatting, adding/deleting/moving the text in worksheet, linking different sheets, sorting the data, filtering the data (auto and advance filters), What-if analysis, open an already existing workbook, saving workbook, printing a worksheet, closing the workbook.

References/Textbooks:

1. *Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
2. *Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications, 2017.*
3. *Joyce Cox, Joan Lambert and Curtis Frye, Microsoft office Professional 2010 Step by Step, Microsoft Press, 2010.*
4. *V. Rajaraman, Neeharika Adabala, Fundamentals of Computers, PHI Learning, 2015.*
5. *P.K. Sinha, Computer Fundamentals, BPB Publications, 2004.*
6. *Peter Norton, Peter Norton's Computing Fundamentals, McGraw-Hill Technology Education, 2006.*
7. *R. Parameswaran, Computer Applications in Business, S Chand & Company, 2010.*

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

Bachelor of Commerce (Honours) Semester-I

(Session 2020-21)

COURSE CODE: BCOP-1127
WORKSHOP ON MS-OFFICE PACKAGE

Course Outcomes:

After passing course the student will be able to:

CO1: gain knowledge about office tools like word processing, spreadsheets, etc.

CO2: understand word processing software to create professional and academic documents.

CO3: create effective presentations useful for corporate tasks.

CO4: use spreadsheet application for data organization and manipulation.

Bachelor of Commerce (Honours) Semester-I

(Session 2020-21)

COURSE CODE: BCOP-1127
WORKSHOP ON MS-OFFICE PACKAGE

Max. Marks: 50

Practical: 40

CA: 10

Examination Time: 3 Hrs

Instructions for the Paper Setter:

- Paper will be set on the spot by the examiner

UNIT-I

Microsoft Word:

- Shortcuts for navigation, insertion, deletion, and selection
- Formatting fonts with bolding, bullets and numbers
- Creative use of cut, copy and paste
- Format painter
- Tables
- Graphics, Smart Art, watermarks, hyperlinks, print screen function and Word art
- Page numbering
- Borders and shading
- Headers/footers
- Shortcut features like AutoCorrect, quick sections, find and replace
- Page breaks, drop caps
- Spelling, grammar, thesaurus

UNIT-II

Microsoft Excel:

- Navigation and keyboard shortcuts
- Text, number and date shortcuts
- Add columns, rows (Autosum, auto-calculate)
- Manual math formulas (average, count,etc.)
- Use “cell references” with formulas
- Copy formulas (fill handle)
- Cut, copy, paste spreadsheets, range, and formulas
- Delete/insert rows and columns
- AutoCorrect
- Print options (orientation, margins, gridlines, header/footer)

UNIT-III

- Create charts to illustrate your spreadsheets; revise and format charts
- Create, sort and filter lists
- Apply formatting options, including conditional formatting

Microsoft PowerPoint:

- Slide content: planning, opening slides, sequencing
- Bullet/number slides(variations, sequencing, layout)
- Graphics, shapes(alternatives to bullets; use color to influence mood; use images to reinforce messages)
- Smart art(effective use of diagrams)

UNIT-IV

- Photos and internet photos(formatting options)
- Copy/paste shortcuts(from other programs; linking)
- Create/import org charts, graphs and tables
- Hyperlinks to others programs and the internet
- Insert media clips, movies, sounds
- Views: Slide sorter, Outline, Notes as editing and presentation tools
- Presenting: transitions, animation, hiding slides, pausing and highlighting
- Automatic presentations (narrations, timing)
- Presentation methods to connect with individuals and groups

References/Textbooks:

6. *Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
7. *Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications, 2017.*
8. *Joyce Cox, Joan Lambert and Curtis Frye, Microsoft office Professional 2010 Step by Step, Microsoft Press, 2010.*
9. *P.K. Sinha, Computer Fundamentals, BPB Publications, 2004.*
10. *Ebooks at OpenOffice.org*
11. *R. Gabriel Gurley, A Conceptual Guide to OpenOffice.org3, 2nd Edition.*

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

Bachelor of Business Administration (Semester – I)

(Session 2020-21)

Course Code: BBRM-1126
COMPUTER APPLICATIONS FOR BUSINESS- I

COURSE OUTCOMES

After passing this course the student will be able to:

CO1: understand the basic knowledge of computer, its components, Input / Output devices of computer.

CO2: use operating system with the proper knowledge of functionality of operating system.

CO3: learn Word processing software to create, edit and format documents.

CO4: gain knowledge on spreadsheet software as how to calculate, organize, edit and present numerical data and apply formulae on it.

Bachelor of Business Administration (Semester – I)

(Session 2020-21)

COURSE CODE: BBRM-1126
COMPUTER APPLICATIONS FOR BUSINESS- I

Examination Time: 3+3 Hours **Max. Marks: 50**
Theory:25
Practical: 15
CA:10

Instructions for Paper Setter -

Eight questions of equal marks 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

Computer Fundamentals: Definition of computer, Components of a computer system, Brief history of evolution of computers and generation of computers.
Internal and External Memory Storage: RAM, ROM, PROM, EPROM. Commonly used Input / Output/Memory storage devices: Punched Card, VDU, CRT. Difference between Hardware & Software. Types of software system. Software & Application. software, Interpreter.

UNIT-II

Operating System: Definition, Types of operating on the Basis of processing. Introduction to various types of operating system such as windows & DOS Overview and Anatomy of windows, Working with files and folder in windows. Basic Commands of Internal & External commands in DOS.

UNIT-III

MS-Word: Overview, Creating, Saving, Opening, Importing, Exporting& Inserting files. Formatting pages, paragraphs and sections. Indents and outdates. Creating lists and numbering. Heading Styles, Fonts and size editing, positioning& viewing text. Finding & replacing text, inserting page breaks, page numbers, book marks, symbols & dates. Using tabs and tables Header, Footer & Printings.

UNIT-IV

MS-Excel: Worksheet overview. Entering information. Worksheet . Opening and saving workbook. Formatting number and texts. Protecting cells. Producing Charges and printing operations graphs.
MS-Power Point: Presentation Basics Menus & Toolbars. Opening & Saving & existing presentation creating & Saving a presentation using auto content wizard. Design Template Blank Presentation. The slides sorter view. Insert slides from another presentation. Inserting pictures and graphics. Slide show, printing, slides.

References / Textbooks:

1. *Peter Norton, Introduction to Computers, Tata McGraw-Hill, 2006.*
2. *Sanjay Sexana, A First Course in Computers, Vikas Publishing House, New Delhi, 2015.*
3. *V. Rajaraman, Neeharika Adabala, Fundamentals of Computers, PHI Learning, 2015.*
4. *Dr. S.S Srivastava., MS-Office, Firewal Media, New Delhi, 2008.*
5. *Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*

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

Session 2020-21
Bachelor of Business Administration Semester II
Course Code: BBRL -2326
Course Title: Computer Based Accounting System

Course Outcomes:

After passing this course, the student will be able to:

CO1: Understand the role of computerised accounting software in the business environment.

CO2: Develop competence and expertise, to an advanced level, using different accounting software packages, in maintaining data and providing user information.

CO3: Become familiar with basic accounting software named TALLY ERP9.

CO4: Maintain accounts in TALLY ERP9.

Session 2020-21
Bachelor of Business Administration Semester II
Course Code: BBRL -2326
Course Title: Computer Based Accounting System

Examination Time: 3+3 Hours **Max. Marks: 50**
Theory:40
CA:10

Instructions for the Paper Setter

- Eight questions of equal marks 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. 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

Computerized Accounting: - Meaning, need, Concepts of Accounting groups, Hierarchy of accounts, Codification in accounting.

Accounting package - Setting up an accounting entity, Creation of groups and accounts

Designing and creating vouchers; Data Entry operations using the vouchers, Processing for reports to prepare ledger accounts, trial balance and balance sheet.

Unit-II

Database Design for Accounting

Identifying and appreciating the data content in accounting transactions; overview of database concepts, ER model; creating and implementing RDM for Financial Accounting; SQL to retrieve data and generate accounting information.

Unit-III

Documenting transactions using vouchers; System of vouchers and database design for accounting; Storing and maintain transaction data.

Tally

Financial Accounting Packages: Preparation and online finalization of accounts on Tally, ERP 9.0; Introduction of Tally, ERP 9.0, Phases of Implementation, Aides for implementation. Accounts Management (Using Tally, ERP 9.0 Software Package);

Unit-IV

Accounts Masters, Accounts Transaction, Accounts Reports. Preparation and Compilation of complete balance sheet of any Industries/Organization/ Firms.

(The mentioned versions of Tally must be replaced with latest available version)

Suggested Readings:

1. Hall, J.A, “Accounting Information System”, South Western College Publishing.

2. Gelinas, Ultric, J. and Steve, G. Suffon, “Accounting Information System, South Western Thomson Learning.

3. “Tally- ERP 9, Simple Steps of Learning”, Kogent Learning.

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

Bachelor of Science (Home Science) Semester-I
Session 2020 - 21
Course Code: BHSM - 1127
COMPUTER BASICS
(Theory)

Course Outcomes:

After passing this course the students will be able to:

CO1: understand the basics knowledge of Computer and its uses.
CO2: find and evaluate information on the Web effectively.
CO3: learn the basics of e-mail, such as sending, forwarding and receiving mail, attaching documents, creating mailboxes, filters, and address books.
CO4: learn basic word processing skills such as text input formatting, editing, cut, copy, paste, spell check, margin, tab controls, keyboard shortcuts, printing, clipart, charts etc.

Bachelor of Science (Home Science) Semester-I
Session 2020-21
COURSE CODE: BHSM - 1127
COMPUTER BASICS
(Theory)

Examination Time: (3 + 3) Hrs

Max. Marks: 100
Theory: 50
Practical: 30
CA: 20

Instructions for Paper Setter -

- Eight questions of equal marks (10 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 subdivided 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 computer and its characteristic:
History of computers, Generations of Computers, Types of Computers, input devices, ouput devices, memory devices, software and its types, working with windows, features, desktop, using context menu, creating shortcut, working with dialog box, arranging windows, setting properties of desktop, transfer from CD,DVD. Pen Drive to Hard disk and vice versa, coping files.
Definition of Virus, Malware, Spyware and removal.

UNIT -II

MS Word

· How to open MS word document from file and to exit from a document.
· How to edit a document.
· Formatting the whole text in different fonts and sizes and colors.
· Inserting pictures from a file, inserting a Table or a chart.
· How to use Mail merge how to copy one document or Text from one document to another.
· How to put headers and footers on a document.

UNIT- III

MS-Power Point
Presentation & its features, components, viewing a slide show using blank presentation adding text, saving, closing, opening the presentation, viewing presentation, normal view, Outline view, slide sorter view, slide show, creating a wizard using presentation, editing presentations,

adding new slide, changing the new slides, editing text type, deleting the text object, interesting text boxes, formatting text, modifying slides, working with slide outlines, moving objects , copying objects, searching text, replacing text, spell check, using clip art, word Art, auto shapes.

UNIT-IV

Internet and E-mail:

What Internet Provides, Internet terms, Internet requirements, getting started Internet, Surfing Net, moving about the Web, E-Mail, its features, creating and E-Mail message, Reading Mail, replying mail, draft message, sending mail. Phishing and SPAM mail.

References / Textbooks:

1. *Anshuman Sharma, Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
2. *Rachhpal Singh & Gurvinder Singh, Windows based computer courses, Kalyani Publisher, 2014.*
3. *Peter Norton, Introduction to Computers, Tata McGraw-Hill, 2006.*
4. *P.K. Sinha, Computer Fundamentals, BPB Publications, 2004.*
5. *Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications, 2017.*

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

Bachelor of Science (Home Science) Semester-I
Session 2020-21
COURSE CODE: BHSM - 1127
COMPUTER BASICS (PRACTICAL)

Note: Paper will be set on the spot by the examiner.

· Window Basics
· Internet Usage
· MS word
· MS Power Point

BACHELOR OF SCIENCE (HOME SCIENCE) SEMESTER II
(Session 2020-21)

Course Code: BHSM - 2127
COMPUTER APPLICATIONS FOR HOME SCIENTISTS

Course Outcomes:

After passing this course the students will able to:

CO1: Apply features of spreadsheet software for data manipulation, data entry, worksheet formatting, functions and formulae.

CO2: Comprehend the basics of E-Commerce and various multimedia devices.

CO3: Comprehend internet basics, its working and the use of email.

CO4: Create and manage YouTube channel and blog.

CO5: Comprehend about the process of Social Media Marketing.

BACHELOR OF SCIENCE (HOME SCIENCE) SEMESTER II
(Session 2020-21)
Course Code: BHSM - 2127
COMPUTER APPLICATIONS FOR HOME SCIENTISTS
(Theory)

Examination Time: (3+3) Hrs.

Max. Marks: 100
Theory: 50
Practical: 30
CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Spreadsheet Software
Workbook and worksheet, entering data, editing cell contents, Inserting and deleting rows, column, using auto-fill, creating list, formatting data, using formula

Internet
Introduction to internet, searching information on internet.

UNIT-II

WWW: Introduction , working of WWW, Web browsing (opening, viewing, saving and printing a web page and bookmark).

E-Commerce
Basics, Architecture, Types, Applications.

UNIT-III

Payment gateway: Popular payment methods (Net-banking, m-Banking, UPI, Debit/Credit Card, Mobile Wallets)

Multimedia & its Applications
Introduction to Multimedia and its usage, record sound using devices, using scanner, Web Camera.

UNIT IV

YouTube Studio: Navigating studio, Uploading videos, Edit Video settings, Analytics, Copyright and Monetization.

Blog Writing: Blog Domain, choice of CMS, Register a domain or subdomain with a website host.

Social Media Marketing: Social Media, Importance of Social Media, SMO Strategy for Business, Business Profile Creation, Viral Marketing, Application of Facebook and Twitter for social media marketing.

References/Textbooks:

1. Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications (2017).
2. Rachhpal Singh, Gurvinder Singh, Windows based computer courses, Kalyani Publishers (2011).
3. Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers (2016), 5th ed.
4. Ramesh Bangia, Introduction To Multimedia, Laxmi Publications Pvt. Ltd.(2015).
5. Laudon, E-Commerce, Pearson Education India (2016), 10th ed.
6. https://www.tutorialspoint.com/social_media_marketing/
7. https://blog.hubspot.com/marketing/how-to-start-a-blog

BACHELOR OF SCIENCE (HOME SCIENCE) SEMESTER II
(Session 2020-21)
Course Code: BHSM - 2127
COMPUTER APPLICATIONS FOR HOME SCIENTISTS
(Practical)

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Note: Paper will be set on the spot by the examiner.

1) Microsoft Excel
2) Searching on Internet
3) Multimedia Usage
4) YouTube and Blog

BACHELOR OF SCIENCE (FASHION DESIGNING) SEMESTER–I

(Session 2020-21)

Course Code: BFDM-1126
BASICS OF COMPUTER

Course Outcomes:

After passing this course the student will be able to:

CO1: analyze basic working of computer and its components.
CO2: gain knowledge of computer Equipment- hardware and software.
CO3: recognize how to use word processing software for creating professional documents.

BACHELOR OF SCIENCE (FASHION DESIGNING) SEMESTER–I

(Session 2020-21)

Course Code: BFDM-1126
BASICS OF COMPUTER

Examination Time: 3+3Hrs **Max. Marks: 100**
Theory: 50
Practical: 30
CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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 Computer, Data Processing, Concept of data and information,

UNIT II

- Classification of computer.
- Computer Hardware-Central Processing Unit, Main Memory, Secondary Memory
- I/O devices

UNIT III

- General concept of MS Word: Word Processing, Formatting, editing
- MS-Word: Spell- grammar check, Mail Merge, Printing and saving.

UNIT IV

- Computer applications in various fields of fashion Industry.

References/Textbooks:

1.Anshuman Sharma, Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.
2.Rachhpal Singh & Gurvinder Singh, PC Software, Kalyani Publisher, 2009.
3.Peter Norton, Peter Norton's Computing Fundamentals, McGraw-Hill Technology Education, 2006.

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

Bachelor of Science (Honours) Mathematics Semester II

Session 2020-21

COURSE CODE: BOMM-2137

COMPUTER FUNDAMENTALS AND INTRODUCTION TO C LANGUAGE

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for the Paper Setters:

Eight questions of equal marks (10 marks each) are to be set, two in each of the four Sections (A-D). Questions may be subdivided 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 : Early computing devices, diverse uses of computers, block diagram, use of CPU and I/O devices, software and hardware, application software and system software, primary and secondary storage devices, Flowcharts and algorithms.

UNIT-II

Introduction to 'C' language: Tokens, Identifiers, Keywords, constants and literals, Data types. Operators: arithmetic, relational and logical, precedence and order of evaluation

UNIT-III

Control Statements: Decision control, loop control and case control. Functions and storage classes.

UNIT-IV

Arrays: initializing an array. one dimensional arrays: array manipulation; searching, insertion, deletion of an element from an array; finding the largest/smallest element in array; two dimensional arrays, addition/multiplication of two matrices, program to transpose a square matrix; null terminated strings as array of characters.

References / Textbooks:

1. E. Balagurusamy, Programming in ANSI C, Tata McGraw-Hill (2002), 5th edition.
2. Stephen G. Kochan, Programming in C, Pearson Education (2015), 4th edition.
3. Rachhpal Singh, Gurvinder Singh, Windows based computer courses, Kalyani Publishers (2011).
4. Yashwant Kanetkar, Let us C, BPB Publications (2020), 17th edition.
5. R.S. Salari, Application Programming in C, Khanna Book Publishing (2012), 4th edition.
6. Anshuman Sharma, Learn programming in C, Lakhanpal Publishers (2016), 7th edition.

Bachelor of Science (Honours) Mathematics Semester III

Session 2020-21

PYTHON PROGRAMMING

Course Code: BOMM-3135

Course Outcomes:

After passing course the student will be able to:

CO1: Understand formulation of algorithms and programs for problem solving.

CO2: Gain understanding of various programming constructs like data types, operators, string processing and control structures.

CO3: Have knowledge of object oriented programming paradigm.

CO4: Have understanding of file handling, exception handling and SQLite database connectivity in python.

Bachelor of Science (Honours) Mathematics Semester III

Session 2020-21

PYTHON PROGRAMMING

Course Code: BOMM-3135

Examination Time: (3+3) Hours

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for the Paper Setters:

Eight questions of equal marks (10 marks each), (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided 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 python and Setting up the Python development Environment, Basic syntax, interactive shell, editing, saving, and running a script, Concept of data types, Declaring and using Numeric data types: int, float, complex Lists and Tuples and their basic operations, Python console Input / Output. Arithmetic operators and expressions, Conditions, Comparison operators, Logical Operators, Is and In operators.

UNIT II

String Handling, Unicode strings, Strings Manipulation: - compare strings, concatenation of strings, slicing strings in python, converting strings to numbers and vice versa. Dictionaries Control statements: if-else, Nested If-Else, Loops (for, while) Loop manipulation using pass, continue, break and else

UNIT III

Built in function and modules in python, user defined functions, passing parameters, arguments and return values; formal vs actual arguments, Lamda function in python, Recursion, organizing python codes using functions, Programming using functions, modules and external packages

UNIT IV

Files: manipulating files and directories, os and sys modules; text files: reading/writing text and numbers from/to a file; creating and reading a formatted file (csv or tab separated) understanding read functions, read(), readline() and readlines() Understanding write functions, write() and writelines() Manipulating file pointer using seek. Introduction to graphics.

References / Textbooks:

1. *Mark Lutz, Learning Python, O'Reilly Media, 2013.*
2. *David Beazley, Python cookbook, O'Reilly Media, 2013.*
3. *David Beazley, Python Essential Reference, Addison-Wesley Professional, 2009.*
4. *John Zelle, Python programming: An Introduction to Computer Science, Franklin, Beedle & Associates Inc, 2004.*
5. *Alex Mortelli, Python in a Nutshell, O'Reilly Media, 2006.*

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

Bachelor of Science (Honours) Mathematics Semester IV

Session: 2020-21

COURSE CODE: BOMM-4135

FOUNDATION OF STATISTICAL COMPUTING

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Statistical Computing: Introduction, Role of Programming and Statistical Software. Data Statistics: Sampling, Cumulative statistics, Statistics for Data frames, matrix objects and lists.

Introduction to R, Help functions in R, Vectors, Common Vector Operations, Using all and any function, subletting of vector. Creating matrices, Matrix operations, Applying Functions to Matrix Rows and Columns, Adding and deleting rows and columns.

UNIT - II

Lists, Creating lists, general list operations, Accessing list components and values, applying functions to lists, recursive lists

Creating Data Frames – Matrix-like operations in frames , Merging Data Frames, Applying functions to Data frames, Factors and Tables , factors and levels , Common functions used with factors , string operations

UNIT - III

Input/ Ouput: scan() , readline() Function, Printing to the Screen Reading and writing CSV and text file. Control statements: Loops, Looping Over Nonvector, Sets, if-else , writing user defined function, scope of the variable, R script file.

UNIT - IV

Graphics in R: Graph Syntax ((title, xlabel, ylabel, pch, lty, col.), Simple graphics (Bar, Multiple Bar, Histogram, Pie, Box-Plot, Scatter plot, qqplot), Low-level and High-Level plot functions. Using Analytical Algorithms (KNN, K-means, Naive Bayes) for Predictive analysis and Modelling.

Note:

Practical: Based on simple mathematical problems and based on syllabus of Statistical Methods for descriptive Statistics.

References / Textbooks:

1. Andrie de Vries and Joris Meys, R Programming for Dummies, Wiley (2016), 2nd Edition.
2. Sandip Rakshit, R Programming for Beginners, McGraw Hill Education (2017), 1st Edition.
3. Sandip Rakshit, Statistics with R Programming, McGraw Hill Education (2018), 1st Edition.
4. Garrett Grolemund, Hands on Programming with R, O'Reilly (2014), 1st Edition
5. Mark Gardener, Beginning R: The Statistical Programming Language, Wiley (2013)
6. Tilman M. Davies, The Book of R: A first Course in Programming and Statistics, No Strach Press (2016), 1st Edition

Bachelor of Science (Honours) Agriculture Semester-IV

(Session: 2020-21)

COURSE CODE: BACM-4128
AGRI-INFORMATICS

COURSE OUTCOMES:

After passing this course student will be able to:

CO1: Comprehend about computer system, various operating systems.

CO2: Work with Word processing applications , database applications and using world wide web.

CO3: Demonstrate usage of smart phones for advice and ICT tools in Agriculture.

CO4**:** Illustrate case studies like MOOOfarm, E-Dairy Mitra, MOOOCoins etc.

Bachelor of Science (Honours) Agriculture Semester-IV
(Session: 2020-21)

Course Code: BACM-4128
AGRI-INFORMATICS
(THEORY)

Examination Time: (3+3) Hrs. **Max. Marks: 50**

Theory: 25

Practical: 15

CA: 10

Instructions for Paper Setter - Eight questions of equal marks (05 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 Computers, Operating Systems, definition and types, Applications of MSOffice for document creation & Editing, Data presentation, interpretation and graph creation, statistical analysis, mathematical expressions, Database, concepts and types, uses of DBMS in Agriculture.

Unit – II

World Wide Web (WWW): Concepts and components. Introduction to computer programming languages, concepts and standard input/output operations, e-Agriculture, concepts and applications, Use of ICT in Agriculture. Computer Models for understanding plant processes.

Unit – III

IT application for computation of water and nutrient requirement of crops, Computer controlled devices (automated systems) for Agri-input management, Smartphone Apps in Agriculture for farm advises, market price, postharvest management etc, Geospatial technology for generating valuable agri-information.

Unit – IV

Decision support systems, concepts, components and applications in Agriculture. Agriculture Expert System, Soil Information Systems etc for supporting Farm decisions. Preparation of contingent crop-planning using IT tools.

SUGGESTED READINGS

- Vanitha G (2011). Agro-Informatics. New India Publishing Agency.

ADDITIONAL RESOURCES:

- Web sites: http://www.agrimoon.com/
- http://www.agriinfo.in/ eagri.org
- http://www.agriglance.com/
- http://agritech.tnau.ac.in/

Bachelor of Science (Honours) Agriculture Semester-IV

(Session: 2020-21)
Course Code: BACM-4128
AGRI-INFORMATICS
(PRACTICAL)

Examination Time: (3+3) Hrs. **Max. Marks: 50**

Theory: 25

Practical: 15

CA: 10

Instructions for Practical Examiner: Question paper is to be set on the spot jointly by the Internal and External Examiners. Two copies of the same should be submitted for the record to COE Office, Kanya Maha Vidyalya, Jalandhar.

LIST OF EXPERIMENTS

1. Study of Computer Components, accessories, practice of important DOS Commands.
2. Introduction of different operating systems such as windows, Unix/ Linux, Creating, Files & Folders, File Management.
3. Use of MS-WORD and MS Power-point for creating, editing and presenting a scientific Document.
4. Use of MS-EXCEL - Creating a spreadsheet, use of statistical tools, writing expressions, creating graphs, analysis of scientific data.
5. Use of MS-ACCESS: Creating Database, preparing queries and reports, demonstration of Agriinformation system.
6. Introduction to World Wide Web (WWW). Introduction of programming languages.
7. Hands on Crop Simulation Models (CSM) such as DSSAT/Crop-Info/CropSyst/ Wofost; Computation of water and nutrient requirements of crop using CSM and IT tools.
8. Hands on Decision Support System.
9. Preparation of contingent crop planning.

SUGGESTED READINGS

- Vanitha G (2011). Agro-Informatics. New India Publishing Agency.

ADDITIONAL RESOURCES:

- Web sites: http://www.agrimoon.com/
- http://www.agriinfo.in/ eagri.org
- http://www.agriglance.com/
- http://agritech.tnau.ac.in/

Master of Science (Chemistry) Semester - I
Session 2020-21

(Theory)
COMPUTER FOR CHEMISTS
Course code: MCHM - 1135

Examination Time: (3+3) Hours

Max. Marks: 75
Theory: 40
Practical: 20
CA: 15

Note: The students are allowed to use Non-Programmable Calculator.

Instructions for Paper Setter -

Eight questions of equal marks (8 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.

1. Computer Programming in C language (30 Hrs.)

UNIT-I

Principles of programming, algorithms and flowcharts.

Elementary programming, a typical C program, print function.

Introduction of declarations, assignments and variables: concept of an integer, concept of a variable, rules for naming variables, assignment statement, arithmetic operators.

Integer arithmetic expressions, truncation effects, relative priority of arithmetic operators, use of parenthesis, modulus operator.

UNIT-II

Floating point numbers, scientific notation, converting integers to floating point and vice versa, coercion and cast operator, type char.

Decision making in C, scanf function, relational operators, logical operators, if statement, if else statement, nesting of if statement.

UNIT-III

The while loop, do while loop, for loop, nesting of for loop.

Type char and ASCII code, character strings and how to print them, octal and hexadecimal notation.

User defined functions, returning value from a function, functions with more than one parameters.

UNIT-IV

Arrays, declaring an array, initializing an array, break statement, strings and character arrays, sorting an array, finding maximum and minimum in an array, multidimensional arrays. Input and output.

2.Computer programs in Chemistry (15Hrs.)

(these are to be done in the practical class)

Development of small computer codes involving simple formulae in chemistry:

UNIT - I

1. Calculation of mean, median, mode.
2. Solution of a quadratic equation.
3. Calculation of linear regression.
4. Calculation of curve linear regression.

UNIT - II

5. Calculation of Bohr orbit from de Broglie Lambda for electron.
6. Calculation of wave number and frequency from value of wavelength.
7. Calculation of van der Waalsradii.
8. Radioactive decay.
9. Rate constant of a 1st order reaction, 2nd order reaction.
10. Determination
11. Calculation of lattice energy using Born Land e equation.

UNIT - III

12. Addition, multiplication and solution of inverse of 3 X 3matrix.
13. Calculation of average molecular weight of a polymer containing n1 molecules of

molecular weight m1, n2 molecules of molecular weight M2 and soon.

14. Program for calculation of molecular weight of organic compound containing C, H, N, O and S.
15. Calculation of reduced mass of diatomic molecule.
16. Calculate the RMS and most probable velocity of a gas.

UNIT - IV

17. Calculate the ionic mobility from ionic conduct ancevalues.
18. Determine the thermodynamic parameters for isothermal expansion of monoatomic ideal gas.
19. Calculation of value of g- factor from value of J and S.
20. Calculate the bond length and bond angles using crystal structure data.

References / Textbooks:

1. *K.V. Raman, Computers in Chemistry, Tata McGraw Hill, 1993.*
2. *Henry Mullish, Herbert L. Cooper, The Spirit of C: An Introduction to Modern Programming, Jaico Publications, 1987.*
3. *Anshuman Sharma, Learn Programming in C, Lakhanpal Publishers, 7th Edition.*
4. *E Balagurusamy, Programming in ANSI C, Tata McGraw-Hill, 2002.*
5. *Yashvant Kanetkar, Let Us C, BPB Publications, 2016.*
6. *Byron Gottfried, Schaum's Outline Programming with C, McGraw Hill, 1996.*

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

Master of Science (Zoology) Semester–I

Session 2020-21

(Theory)

COMPUTER PROGRAMMING & DATA PROCESSING

Course Code: MZOM-1134

Examination Time: 3+3 Hours

Max. Marks: 50
Theory: 25
Practical: 15
CA: 10

Instructions for Paper Setter -

Eight questions of equal marks (5 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

1. Introduction to Computer capabilities, Classifications and generations.
2. Computer architecture, organization, its components, Introduction to hardware and software concepts, operating systems, peripherals, I/O devices, Limitations of computer.

Unit - II

Basic Features and usage of:

3. Word Processing Software: Creating, Editing, Formatting and Printing document
4. Spreadsheet Software: Creating, Editing, Formatting and Printing a sheet
5. Presentation Software: Creating, Editing, Formatting and Printing a presentation

Unit - III

6. Introduction to C Programming language.
   Program structure, elements, character set, constants, variables, data types, identifiers, operators and expressions.
   I/O Statements: printf and scanf statement.

Unit - IV

Control statements: if, if else, else if ladder, nesting, switch, Looping statements: do while, while, for

Arrays: Basic usage, Declaration, Initialization and Types.

References / Textbooks:

1. *Anshuman Sharma, Learn Programming in C, Lakhanpal Publishers, 7th Edition.*
2. *E Balagurusamy, Programming in ANSI C, Tata McGraw-Hill, 2002.*
3. *Yashvant Kanetkar, Let Us C, BPB Publications, 2016.*
4. *Gurwinder Singh, Rachhpal Singh, Fundamentals of Computer and PC Software, Kalyani Publishers, 2015.*
5. *Anshuman Sharma, Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
6. *Byron Gottfried, Schaum's Outline Programming with C, McGraw Hill, 1996.*

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

MASTER OF ARTS (ECONOMICS) SEMESTER II

(Session 2020-21)
COURSE CODE: MECM- 2125 (OPT - XI)
COMPUTER APPLICATIONS FOR ECONOMISTS

COURSE OUTCOME

After passing this course the student will be able to:

CO1: Comprehend the organization of Computer System, functioning of various units and storage.

CO2: Demonstrate the use of Mobile as computing device and apply new technology in day to day activities.

CO3: Apply features of word processing and spreadsheet software for data manipulation, data entry, worksheet formatting, functions and formulae.

CO4: Comprehend and apply SPSS for economics related calculations.

MASTER OF ARTS (ECONOMICS) SEMESTER II

(Session 2020-21)
COURSE CODE: MECM- 2125 (OPT - X1)
COMPUTER APPLICATIONS FOR ECONOMISTS

Examination Time: (3+3) Hrs. **Max. Marks: 100**

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Fundamentals of Computer: Introduction to computer, Applications of computer, Input and Output devices, Memory – Primary and Secondary.

Latest trends and Technologies in IT: Digital Camera, Smart finger: Distance measuring tool, Nipper, Stylus, Tiny cube speaker, Airpods, Mobile as a computing device, Payment gateway, Payment methods: Net-banking, m-Banking, UPI, Debit/Credit Card, Mobile Wallets.

UNIT II

Word Processing: Introduction to word processing & its features, parts of window of word processing (Title bar, menu bar, status bar, and ruler), understanding the ribbon, use of office button and quick access toolbar, creation of new documents, opening document, insert a document into another document. Page setup, margins, gutters, font properties, alignment, page breaks, header & footer, deleting, moving, replace, editing text in document, saving a document, spell checker, printing a document. Creating a table, entering and editing text in tables, changing format of table, height and width of row/column editing, adding and deleting rows/columns. Adding picture, page colors and watermarks, borders, shading, drawing objects.

UNIT –III

Spreadsheet: Introduction to worksheet/spreadsheet, features, creating a new workbook, different functions on different data in excel, creation of chart, creation of worksheet, adding,

deleting, moving the text in worksheet, linking, sorting the data, querying the data, filtering the data (auto and advance filters), open an already existing workbook, saving workbook, printing a worksheet, closing the workbook & exiting.

UNIT -IV

SPSS: Introduction, Data editor Window, Syntax, Output basics, If command, Filter command, Entering and modifying data, Creating a chart, using interactive chart function, difference between excel and SPSS.

References/Textbooks:

1. Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications (2017).
2. Rachhpal Singh, Gurvinder Singh, Windows based computer courses, Kalyani Publishers (2011).
3. Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers (2016), 5th ed..
4. E. Balagurusamy, Programming in ANSI C, Tata McGraw-Hill (2002), 5th ed.
5. Yashwant Kanetkar, Let us C, BPB Publications (2020), 17th ed.
6. Anshuman Sharma, Learn programming in C, Lakhanpal Publishers (2016), 7th ed.
7. Lokesh Jasrai, Data Analysis using SPSS, SAGE Publications Pvt. Ltd. (2020), 1st Edition

Master of Arts (Psychology) Semester-III

Course Code: MSYM - 3126

COMPUTER BASICS

(Theory)

Course Outcomes:

After passing this course the students will be able to:

CO1: understand the basics knowledge of Computer and its uses.

CO2: find and evaluate information on the Web effectively.

CO3: learn the basics of e-mail, such as sending, forwarding and receiving mail, attaching documents, creating mailboxes, filters, and address books.

CO4: learn basic word processing skills such as text input formatting, editing, cut, copy, paste, spell check, margin, tab controls, keyboard shortcuts, printing, clipart, charts etc.

Master of Arts (Psychology) Semester-III
Session 2019-20
Course Code: MSYM - 3126
COMPUTER BASICS
(Theory)

Examination Time: (3+3) Hrs

Max. Marks: 100
Theory:
50
Practical: 30
CA:
20

Instructions for Paper Setter -

Eight questions of equal marks (10 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. Each question carries 10 marks

UNIT -I

Contents

Introduction to computer and its characteristic:
History of computers, Generations of Computers, Types of Computers, input devices, ouput devices, memory devices, software and its types, working with windows, features, desktop, using context menu, creating shortcut, working with dialog box, arranging windows, setting properties of desktop, transfer from CD,DVD. Pen Drive to Hard disk and vice versa, coping files.
Definition of Virus, Malware, Spyware and removal.

UNIT -II

MS Word

- How to open MS word document from file and to exit from a document.
- How to edit a document.
- Formatting the whole text in different fonts and sizes and colors.
- Inserting pictures from a file, inserting a Table or a chart.
- How to use Mail merge how to copy one document or Text from one document to another.
- How to put headers and footers on a document.

UNIT- III

MS-Power Point

Presentation & its features, components, viewing a slide show using blank presentation adding text, saving, closing, opening the presentation, viewing presentation, normal view, Outline view, slide sorter view, slide show, creating a wizard using presentation, editing presentations, adding new slide, changing the new slides, editing text type, deleting the text object, interesting text boxes, formatting text, modifying slides, working with slide outlines, moving objects , copying objects, searching text, replacing text, spell check, using clip art, word Art, auto shapes.

UNIT-IV

Internet and E-mail:

What Internet Provides, Internet terms, Internet requirements, getting started Internet, Surfing Net, moving about the Web, E-Mail, its features, creating and E-Mail message, Reading Mail, replying mail, draft message, sending mail. Phishing and SPAM mail.

Reference/Textbooks:

1. *Anshuman Sharma, Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
2. *Rachhpal Singh & Gurvinder Singh, Windows based computer courses, Kalyani Publisher, 2014.*
3. *Peter Norton, Introduction to Computers, Tata McGraw-Hill, 2006.*
4. *P.K. Sinha, Computer Fundamentals, BPB Publications, 2004.*
5. *Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications, 2017.*

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

Master of Arts (Psychology) Semester-III

Session 2019-20

Course Code: MSYM - 3126

COMPUTER BASICS (PRACTICAL)

Note: Paper will be set on the spot by the examiner.

· Window Basics
· Internet Usage
· MS word
· MS Power Point

MASTER OF ARTS (PSYCHOLOGY) SEMESTER IV
(Session 2020-21)
COURSE CODE: MSYM - 4126
COMPUTER APPLICATIONS FOR PSYCHOLOGISTS

Course Outcomes:

After passing this course the students will able to:

CO1: Apply features of spreadsheet software for data manipulation, data entry, worksheet formatting, functions and formulae.

CO2: Comprehend the basics of E-Commerce and various multimedia devices.

CO3: Comprehend internet basics, its working and the use of email.

CO4: Create and manage YouTube channel and blog.

CO5: Comprehend about the process of Social Media Marketing

MASTER OF ARTS (PSYCHOLOGY) SEMESTER IV
(Session 2020-21)
COURSE CODE: MSYM - 4126
COMPUTER APPLICATIONS FOR PSYCHOLOGISTS
(Theory)

Examination Time: (3+3) Hrs. **Max. Marks: 100**
Theory: 50
Practical: 30
CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 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

Spreadsheet Software
Workbook and worksheet, entering data, editing cell contents, Inserting and deleting rows, column, using auto-fill, creating list, formatting data, using formula

Internet
Introduction to internet, searching information on internet.

UNIT-II

WWW: Introduction, working of WWW, Web browsing (opening, viewing, saving and printing a web page and bookmark).

E-Commerce
Basics, Architecture, Types, Applications.

UNIT-III

Payment gateway: Popular payment methods (Net-banking, m-Banking, UPI, Debit/Credit Card, Mobile Wallets)

Multimedia & its Applications
Introduction to Multimedia and its usage, record sound using devices, using scanner, Web Camera.

UNIT IV

YouTube Studio: Navigating studio, uploading videos, Edit Video settings, Analytics, Copyright and Monetization.

Blog Writing: Blog Domain, choice of CMS, Register a domain or subdomain with a website host.

Social Media Marketing: Social Media, Importance of Social Media, SMO Strategy for Business, Business Profile Creation, Viral Marketing, Application of Facebook and Twitter for social media marketing.

References/Textbooks:

1. Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications (2017).
2. Rachhpal Singh, Gurvinder Singh, Windows based computer courses, Kalyani Publishers (2011).
3. Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers (2016), 5th ed.
4. Ramesh Bangia, Introduction To Multimedia, Laxmi Publications Pvt. Ltd.(2015).
5. Laudon, E-Commerce, Pearson Education India (2016), 10th ed.
6. https://www.tutorialspoint.com/social_media_marketing/
7. https://blog.hubspot.com/marketing/how-to-start-a-blog

MASTER OF ARTS (PSYCHOLOGY) SEMESTER IV
(Session 2020-21)
COURSE CODE: MSYM - 4126
COMPUTER APPLICATIONS FOR PSYCHOLOGISTS
(Practical)

Examination Time: (3+3) Hrs.

Max. Marks: 100
Theory: 50
Practical: 30
CA: 20

Note: Paper will be set on the spot by the examiner.

1) Microsoft Excel

2) Searching on Internet

3) Multimedia Usage

4) YouTube and Blog

Master of Commerce (Semester- IV)

Session 2020-21

Course Code: MCML - 4122

Course Title: E-Commerce

Course Outcomes:

After passing course the student will be able to:

CO1: Comprehend on basic terms of E-Commerce, its evolution, aims and benefits.

CO2: Acquaint the steps to be followed for opening a new E-Commerce business.

CO3: Discuss knowledge on various issues involved in relation to secure electronic transactions and Laws for E-Commerce.

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

Master of Commerce (Semester- IV)

Session 2020-21

Course Code: MCML - 4122

Course Title: E-Commerce

Examination Time: (3+3) Hrs. **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 E Commerce and Definition, E-Commerce based activities, Goals of ECommerce, Functions, Advantages and disadvantages of E-Commerce, Scope of ECommerce, Framework of E-Commerce, Electronic Commerce and Electronic Business.

Steps to open online business store.

UNIT-II

Electronic Business models: B2B, B2C, C2C, Websites as market place. Pure online vs. brick and click business.

Electronic Payment systems; Payment Gateways; Different methods of E-payments: Debit Cards, Credit Cards, Paytm, UPI, Google Pay.

UNIT-III

Security and Legal Aspects of E-Commerce: Threats in E-Commerce, Security of Clients and Service-Provider; Cyber Laws – Relevant provisions of Information Technology Act 2000, offences. Secure electronic records and digital signatures.

UNIT-IV

Business process Re-engineering, Methodology, Planning methods for change. Case studies of E-Banking, E-Governance, Supply chain management, e-Retailing.

References/Textbooks:

1. Laudon, E-Commerce, Pearson Education India (2016), 10th edition.

2. David Whiteley, E - Commerce: Strategy, Technologies and Applications, McGraw Hill Education (2017).

3. K.K. Bajaj, Debjani Nag, E-Commerce: The Cutting Edge of Business, McGraw Hill Education (2017), 2nd edition.

4. Nidhi Dhawan, A Handbook of E-commerce, Sun India Publications (2017).

5. Janice Reynolds, The Complete E-Commerce Book: Design, Build & Maintain a Successful Web-based Business, CRC Press (2004), 2nd edition.

6. Syamales Maiti, Sweety Sadhukhan, E-commerce and business communication, McGraw-Hill (2019), 1st edition.