BANGALORE UNIVERSITY

SCHEME AND SYLLABUS

For the course

BACHELOR OF COMPUTER APPLICATIONS (BCA)

NEP2021 Scheme

Academic Year 2021-22 and onwards

Department of Computer Science and Applications
BANGALORE UNIVESITY, BANGALORE

BANGALORE UNIVERSITY BCA SYLLABUS (NEP) [Based on I-C. Model of Karnataka State Higher Education Council]

Semester	Course Code	Title of the Paper	Credits	Languages, Skill Enhancement (SEC), & Ability Enhancement Courses (AECC)	Credits	Total Credits
I	CA-C1T	Discrete Structure	3	OE1: Open Elective [Event Management/ Financial Literacy]	3	27
	CA-C2T	Problem solving Techniques	3	Language L1 English	3	
	CA-C3T	Data Structure	3	Language L2 Kannada/Hindi/Sanskrit	3	
	CA-C4L	Problem solving Lab	2	SEC I : Environmental Studies	3	
	CA-C5L	Data Structure Lab	2	Physical Education	1	
				Health & Wellness	1	
II	CA-C6T	Computer Architecture	3	OE2: [Fundamentals of Investments in Capital/E- Business]	3	27
	CA-C7T	Object Oriented Programming using Java	3	Language L1 English	3	
	CA-C8T	Database Management System	3	Language L2 Kannada/Hindi/Sanskrit	3	
	CA-C9L	Java Lab	2	SEC 2 : Digital Fluency	3	
	CA-C10L	Database Management System Lab	2	Physical Education	1	
				NCC/NSS/CL/R&R	1	
III	CA-C11T	Operating Systems	3	OE3: Open Elective [Investments in Stock Market/ Entrepreneurship Skills]	3	27
	CA-C12T	Computer Networks	3	Language L1 English	3	
	CA-C13T	Python Programming	3	Language L2 Kannada/Hindi/Sanskrit	3	
	CA-C14L	Computer Networks Lab	2	SEC 3 : Constitution of India	3	
	CA-C15L	Python Programming Lab	2	Physical Education	1	
				NCC/NSS/CL/R&R	1	

BANGALORE UNIVERSITY BCA SYLLABUS (NEP) [Based on I-C. Model of Karnataka State Higher Education Council]

Semester	Course Code	Title of the Paper	Credits	Languages, Skill Enhancement (SEC), & Ability Enhancement Courses (AECC)	Credits	Total Credits
IV	CA-C16T	Software Engineering	3	OE4: Open Elective [Corporate Governance/Business Leadership Skills]	3	27
	CA-C17T	Design and Analysis of Algorithm	3	Language L1 English	3	
	CA-C18T	Internet Technologies	3	Language L2 Kannada/Hindi/Sanskrit	3	
	CA-C19L	Design and Analysis of Algorithm Lab	2	SEC 4 : Artificial Intelligence	3	
	CA-C20L	Internet Technologies Lab	2	Physical Education	1	
				NCC/NSS/CL/R&R	1	
V	CA-C21T	Artificial Intelligence	4	CA-V1 Vocation Course I : Quantitative Techniques	3	25
	CA-C22T	Data Analytics	4	CA-E1 Elective I : a. Data Mining b. Computer Graphics	3	
	CA-C23T	Web Programming	4	SEC III : Cyber Crime, Cyber Law, and Intellectual Property Right	3	
	CA-C24L	Data Analytics Lab	2			
	CA-C25L	Web Programming Lab	2			
VI	CA-C26P	Project Work	4	CA-V2 Vocation Course II : Electronic Content Design	3	24
	CA-C27T	Machine Learning	4	CA-E2 Elective II : a. Operations Research b. Software Testing	3	
	CA-C28T	Mobile Application Development	4	Internship	2	
	CA-C29L	Machine Learning Lab	2			
	CA-C30L	Mobile Application Development Lab	2			

CA-C1T: DISCRETE STRUCTURES

No. of Hours/Week: 03

Total Teaching Hours: 48

UNIT-I

[12 Hours]

Set Theory and Logic: Fundamentals of Set theory, Set Operations and the Laws of Set Theory, Counting and Venn Diagrams, Cartesian Products and Relations, Functions–One-to-One, Onto Functions, Function Composition and Inverse Functions. Mathematical Induction, The well ordering principle, Recursive Definitions, Structural Induction, Recursive algorithms. Fundamentals of Logic, Propositional Logic, Logical Connectives and Truth Tables, Logic Equivalence, Predicates and Quantifiers

UNIT-II

[12 Hours]

Counting and Relations: Basics of counting, Pigeonhole Principle, Permutation and Combinations, Binomial coefficients. Recurrence relations, Modeling with recurrence relations with examples of Fibonacci numbers and the tower of Hanoi problem. Divide and Conquer relations with examples (no theorems). Definition and types of relations, Representing relations using matrices and digraphs

UNIT-III

[12 Hours]

Matrices: Definition, order of a matrix, types of matrices, operations on matrices, determinant of a matrix, inverse of a matrix, rank of a matrix, linear transformations, applications of matrices to solve system of linear equations.

UNIT - IV

[12 Hours]

Graph Theory: Graphs: Introduction, Representing Graphs, Graph Isomorphism, Operations on graphs. Trees: Introduction, Applications of Trees, Tree Traversal, Spanning Trees, Minimum Spanning Trees, Prim's and Kruskul's Algorithms. Connectivity, Euler and Hamilton Paths, Planar Graphs. Directed graphs: Fundamentals of Digraphs, Computer Recognition - Zero-One Matrices and Directed Graphs, Out-degree, in-degree, connectivity, orientation, Eulerian and Hamilton directed graphs, tournaments

Text Books:

Ralph P. Grimaldi: Discrete and Combinatorial Mathematics, 5thEdition, Pearson Education, 2004. 2. C. L. Liu: Elements of Discrete Mathematics, Tata McGraw-Hill, 2000. 3. F. Harary: Graph Theory, Addition Wesley, 1969. 4. Richard Bronson, Schaum's Outline of Matrix Operations, McGraw-Hill publications, 2nd Edition, 2011

Reference Books:

1. Kenneth H Rosen. Discrete Mathematics and its Applications, McGraw-Hill publications, 7th edition, 2007. 2. J. P. Tremblay and R.P. Manohar. Discrete Mathematical Structures with applications to Computer Science, Mc Graw Hill Ed. Inc. 1975. 3. Charles G Cullen. Matrices and Linear Transformations, Dover Publications Inc., Second Edition, 1990

Web Resources:

1. https://www.my-mooc.com/en/categorie/mathematics
2. http://www.nptelvideos.in/2012/11/discrete-mathematical-structures.html 3. https://ocw.mit.edu/courses/mathematics/

CA-C2T: PROBLEM SOLVING TECHNIQUES

Total Teaching Hours: 48 **No. of Hours / Week: 03**

UNIT-I [12 Hours]

Introduction: The Role of Algorithms in Computing, Algorithms as a technology, Analyzing algorithms, Designing algorithms, Growth of Functions, Asymptotic notation, Standard notations and common functions. Fundamental Algorithms: Exchanging the values of two variables, Counting, Summation of a set of numbers, Factorial Computation, Generating of the Fibonacci sequence, Reversing the digits of an integer, Character to number conversion.

UNIT - II [12 Hours]

C Programming: Getting Started, Variables and Arithmetic expressions. Input and Output: Standard input and output, formatted output- printf, variable length argument list, formatted input-scanf. Control Flow: Statements and Blocks, If-else, else-if, switch, loops: while loop, for loop, do while, break and continue, goto and labels. Pointers and Arrays: pointers and address, pointers and function arguments, multidimensional array, initialization of pointer arrays, command line arguments.

UNIT - III [12 Hours]

Factoring Methods: Finding the square root of a number, the smallest Divisor of an integer, the greatest common divisor of two integers, computing the prime factors of an integer, generation of pseudo random numbers, raising a number to a large power. Array Techniques: Array order Reversal, Array counting or Histogramming, Finding the maximum number in a set, removal of duplicates from an ordered array, partitioning an array, Finding the kth smallest element, multiplication of two matrices.

UNIT - IV [12 Hours]

Merging: the two-way merge. Sorting: Sorting by selection, sorting by exchange, sorting by insertion, sorting by diminishing increment, sorting by partitioning. Searching: binary search, hash search. Text processing and Pattern searching: text line length adjustment, keyword searching in text, text line editing, linear pattern search

Text Books:

1. R.G.Dromey, “How to Solve it by Computer”, Pearson Education India, 2008.
2. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, “Introduction to Algorithms”, 3rd Edition, The MIT Press Cambridge, Massachusetts London, England, 2008
3. Brain M. Kernighan, and Dennis M. Ritchie, “The C Programming Language”, 2nd edition, Princeton Hall Software Series, 2012.

Reference Books:

1. Steven S. Skiena, “The Algorithm Design Module”, 2nd Edition, Springer-Verlag London Limited, 2008.
2. Donald E. Knuth, The Art of Computer Programming”, Volume 1: Fundamental Algorithms, 3rd Edition, Addison Wesley Longman, 1997.
3. Donald E. Knuth, The Art of Computer Programming”, Volume 2: Seminumerical Algorithms, 3rd Edition, Addison Wesley Longman, 1998.
4. Greg Perry and Dean Miller, “C programming Absolute Beginner’s Guide”, 3rd edition, Pearson Education, Inc, 2014.

Web Resources:

1. http://algorithmsforinterviews.com “Algorithms for Interviews”

CA-C3T: DATA STRUCTURES

Total Teaching Hours: 48

No. of Hours/week: 03

UNIT-I

[12 Hours]

Introduction and Overview: Definition, Elementary data organization, Data Structures, data Structures operations, Abstract data types, algorithms complexity, time-space trade off. Preliminaries: Mathematical notations and functions, Algorithmic notations, control structures, Complexity of algorithms, asymptotic notations for complexity of algorithms. Arrays: Definition, Linear arrays, arrays as ADT, Representation of Linear Arrays in Memory, Traversing Linear arrays, Inserting and deleting, Multi-dimensional arrays, Matrices and Sparse matrices.

UNIT - II

[12 Hours]

Linked list: Definition, Representation of Singly Linked List in memory,Traversing a Singly linked list, Searching in a Singly linked list, Memory allocation, Garbage collection, Insertion into a singly linked list, Deletion from a singly linked list; Doubly linked list, Header linked list, Circular linked list. Stacks: Definition, Array representation of stacks, Linked representation of stacks, Stack as ADT, Arithmetic Expressions: Polish Notation, Conversion of infix expression to postfix expression, Evaluation of Post fix expression, Application of Stacks, Recursion, Towers of Hanoi, Implementation of recursive procedures by stack. Queues: Definition, Array representation of queue, Linked list representation of queues. Types of queue: Simple queue, Circular queue, Double-ended queue, Priority queue, Operations on Queues, Applications of queues.

UNIT - III

[12 Hours]

Binary Trees: Definitions, Tree Search, Traversal of Binary Tree, Tree Sort, Building a Binary Search Tree, Height Balance: AVL Trees, Contiguous Representation of Binary Trees: Heaps, Lexicographic Search Trees: Tries, External Searching: B-Trees, Applications of Trees. Graphs: Mathematical Back ground, Computer Representation, Graph Traversal, Topological Sorting

UNIT - IV

[12 Hours]

Searching: Introduction and Notation, Sequential Search, Binary Search, Comparison of Methods. Sorting: Introduction and Notation, Insertion Sort, Selection Sort, Shell Sort, Divide And Conquer, Merge sort for Linked List, Quick sort for Contiguous List. Hashing: Sparse Tables, Choosing a Hash function, Collision Resolution with Open Addressing, Collision Resolution by Chaining.

Text Books:

1. Seymour Lipschutz, “Data Structures with C”, Schaum’s outLines, Tata Mc Graw Hill, 2011.
2. Robert Kruse, C.L.Tondo, Bruce Leung,Shashi Mogalla,“Data Structures and Program Design using C”, Pearson Education, 2009.

Reference Books:

1. Mark Allen Weiss,“ Data Structures and Algorithm Analysis in C”, Second Edition, Pearson Education, 2013.
2. Forouzan,“A Structured Programming Approach using C”,2nd Edition, Cengage LearningIndia,2008.

CA-C4P: Problem Solving Lab using C

Write, and execute C program for the following:

1. to read radius of a circle and to find area and circumference
2. to read three numbers and find the biggest of three
3. to check whether the number is prime or not
4. to read a number, find the sum of the digits, reverse the number and check it for palindrome
5. to read numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers
6. to read percentage of marks and to display appropriate message (Demonstration of else-if ladder
7. to find the roots of quadratic equation
8. to read marks scored by n students and find the average of marks (Demonstration of single dimensional array)
9. to remove Duplicate Element in a single dimensional Array
10. to perform addition and subtraction of Matrices
11. to find factorial of a number
12. to generate fibonacci series
13. to remove Duplicate Element in a single dimensional Array
14. to find the length of a string without using built in function
15. to demonstrate string functions
16. to read, display and add two m x n matrices using functions
17. to read a string and to find the number of alphabets, digits, vowels, consonants, spaces and special characters.
18. to Swap Two Numbers using Pointers
19. to demonstrate student structure to read & display records of n students
20. to demonstrate the difference between structure & union.

CA-C5P: DATA STRUCTURES LAB

NOTE: For all the programs write the output, flowchart and number of basic operations performed.

1. Given {4,7,3,2,1,7,9,0} find the location of 7 using Linear and Binary search and also display its first occurrence.

2. Given {5,3,1,6,0,2,4} order the numbers in ascending order using Bubble Sort Algorithm

3. Perform the Insertion and Selection Sort on the input {75,8,1,16,48,3,7,0} and display the output in descending order.

4. Write a program to insert the elements {61,16,8,27} into singly linked list and delete 8,61,27 from the list. Display your list after each insertion and deletion.

5. Write a program to insert the elements {61,16,8,27} into linear queue and delete three elements from the list. Display your list after each insertion and deletion.

6. Write a program to insert the elements {61,16,8,27} into circular queue and delete 4 elements from the list. Display your list after each insertion and deletion.

7. Write a program to insert the elements {61,16,8,27} into ordered singly linked list and delete 8,61,27 from the list. Display your list after each insertion and deletion.

8. Write a program to add 6x3+10x2+0x+5 and 4x2+2x+1 using linked list.

9. Write a program to push 5,9,34,17,32 into stack and pop 3 times from the stack, also display the popped numbers.

10. Write a recursive program to find GCD of 4,6,8.

11. Write a program to inert the elements {5,7,0,6,3,9} into circular queue and delete 6,9&5 from it(using linked list implementation)..

12. Write a program to convert an infix expression x^y/(5*z)+2 to its postfix expression

13. Write a program to evaluate a postfix expression 5 3+8 2 - *.

14. Write a program to create a binary tree with the elements {18,15,40,50,30,17,41} after creation insert 45 and 19 into tree and delete 15,17 and 41 from tree. Display the tree on each insertion and deletion operation

15. Write a program to create binary search tree with the elements {2,5,1,3,9,0,6} and perform inorder, preorder and post order traversal.

16. Write a program to Sort the following elements using heap sort {9.16,32,8,4,1,5,8,0}

17. Given S1={“Flowers”} ; S2={“are beautiful”} I. Find the length of S1 II. Concatenate S1 and S2 III. Extract the substring “low” from S1 IV. Find “are” in S2 and replace it with “is”

Open Elective Course (OEC)
Event Management

Course Credits	No. of Hours per week	Total No. of Teaching Hours
3 Credits	3+0+0 Hrs	42 Hrs

Pedagogy: Classroom lecture, tutorials, Group discussion, Seminar, Case studies, fieldwork etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

- Understand the process of organizing an event.
- Understand the importance of a checklist in organizing an event.
- Familiarize with organizing corporate events
- Obtain a sense of responsibility for the multidisciplinary nature of event management.
- Learn to promote the events.

Syllabus

Module No. INTRODUCTION TO EVENT MANAGEMENT [8 Hrs]

Introduction to Event Management: Meaning , Scope, Types of Events (Corporate, Private, or Charity, Indoor Events, OutDoor Events , Celebrity Events) Tools For Event Planning & Management , MICE Events, Event Operations and Services (Setting Up, Parking , Maintenance, Ticketing , Food and Beverage, Logistics) .

Module No. 2 : EVENT PLANNING [8 Hrs]

Event Planning: Event Checklist, Hosting , Principles of Holding Event , Reserving Event Hall, Preparing and Designing ,The Schedule of Event Permissions, Policies , Government & Local Authorities , Phonographic , Performance License , Five Bridges Of Event Management , Characteristics of Successful Event Management

Module No. 3 : Investment Analysis [10 Hrs]

Corporate Event Organization : Preparing A Blueprint , Facilities Planning and Organizing (Assigning Staff , Maintenance of Inventory For The Chemicals and Equipments , Cleaning, Maintenance, Aesthetic Upkeep , Maintaining Back Areas, Public Areas and Surroundings, Floral Designing (- Assigning The Responsibilities , Event Organizer Arrangements , Corporate Event Packages , Corporate Hospitality , Well- Being of the Patrons & Participants , Entailing The Entertainment In Corporate Events and Corporate Event Reporting .

Module No 4: MARKETING OF EVENTS [10 Hrs]

Marketing for Events: Introduction , Importance , Public relation strategies , Brainstorming sessions , writing for public relation (Reviews). Tools of promotion: Media, Types of Media (Print , Electronic, Social Media Networks). Advertising, Promotional Aids (Invitation, Brochures, Leaflets)

Module No. 5: POST EVENT FUNCTIONS [06 Hrs]

Post event functions: Basic guidelines of Budgeting , Essence of margin, Break even Analysis, Cost-Benefit Analysis, Forecasting Techniques, SWOC Analysis.

Skill Developments Activities:

- Prepare an event report with imaginary activities.
- Prepare a checklist for a birthday party.
- Prepare a Budget for Organizing an Event.
- Write a public relation letter for medical event
- Prepare a break even analysis with imaginary figures for an event. Any otheractivities, which are relevantto the course.

Reference:

- Mark Sonderm CSEP -Event entertainment and production:publishers; wiley and sons, Inc
- Annestephen; Event management, HPH.
- K. Venkatramana -Event Management - SHBP.
- K Ramachandra and Allabaksh Principles of Event Management HPH
- Rekha and Vibha Marketing management -VBH
- Nihaasif Event management-VBH

Note: Latest edition of textbooks and reference Books may be used

Open Elective Course (OEC)
Financial Literacy

Course Credits	No. of Hours per week	Total No. of Teaching Hours
3 Credits	3+0+0 Hrs	42 Hrs

Pedagogy: Classroom lecture, tutorials, Group discussion, Seminar, Case studies, fieldwork etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

- Describe the importance of financial literacy and list out the institutions providing financial services;
- Prepare financial plan and budget and manage personal finances;
- Open, avail, and manage/operate services offered by banks;
- Open, avail, and manage/operate services offered by post offices;
- Plan for life insurance and property insurance & select instrument for investment in shares

Syllabus

Module No. 1: Introduction to Financial Literacy (07 Hrs)

Meaning, importance and scope of financial literacy; Prerequisites of Financial Literacy – level of education, numerical and communication ability; Various financial institutions – Banks, Insurance companies, Post Offices; Mobile App based services. Need of availing of financial services from banks, insurance companies and postal services.

Module No. 2: Financial Planning and Budgeting (07 Hrs)

Meaning, importance and need for financial planning; Personal Budget, Family Budget, Business Budget; Procedure for financial planning and preparing budget; avenues for savings from surplus.

Module No. 3: Banking Services (10 Hrs)

Types of banks; Banking products and services –Types of bank deposit accounts – Savings Bank Account, Term Deposit, Current Account, Recurring Deposit, PPF, NSC etc.; Formalities to open various types of bank accounts, PAN Card, Address proof, KYC norm; Various types of loans – short term, medium term, long term, micro finance, and related interest rates offered by various nationalized banks and post office; Cashless banking, e-banking, Check Counterfeit Currency; CIBIL, ATM, Debit and Credit Card, and APP based Payment system; Banking complaints and Ombudsman. Unified Payment Interface (UPI).

Module No. 4: Post Office Financial Services (08 Hrs)

Post office Savings Schemes: Savings Bank, Recurring Deposit, Term Deposit, Monthly Income Scheme, Kishan Vikas Patra, Senior Citizen Savings Scheme (SCSS), Sukanya Samriddhi Yojana/ Account (SSY/SSA); India Post Payments Bank (IPPB). Money Transfer: Money Order, E-Money order. Instant Money Order, collaboration with the Western Union Financial Services; MO Videsh, International Money Transfer Service, Electronic Clearance Services (ECS), Money gram International Money Transfer, Indian Postal Order (IPO).

Module No. 5: Protection and Investment Related Financial Services (10 Hrs)

Insurance Services: LifeInsurance Policies: Life Insurance, Term Life Insurance, Endowment Policies, Pension Policies, ULIP, Health Insurance and its Plans, Property Insurance: Policies offered by various general insurance companies. Post office life Insurance Schemes: Postal Life Insurance and Rural Postal Life Insurance (PLI/RPLI). Housing Loans: Institutions providing housing loans, Loans under Pradhan Mantri Awas Yojana – Rural and Urban.
Investment avenues in Equity and Debt Instruments: Portfolio Management: Meaning and importance; Share Marketand Debt Market,Sensex and its significance; Investment in Shares – Mutual Fund – SIP.

Skill Developments Activities:

- Visit banks, post offices, and insurance companies to collect information and required documents related to the services offered by these institutions and to know the procedure of availing of these services.
- Fill up the forms to open accounts and to avail loans and shall attach photocopies of necessary documents.
- Prepare a personal and family budget for one/six/ twelve month on imaginary figures.
- Try to open a Demat account and trade for a small amount and submit the report on procedure on opening of Demat account and factors considered for trading.
- Any other activities, which are relevant to the course.

Reference

- Avadhani, V. A. (2019). Investment Management. Mumbai: Himalaya Publishing House Pvt. Ltd.
- Chandra, P. (2012). Investment Game: How to Win. New Delhi: Tata McGraw Hill Education.
- Kothari, R. (2010). Financial Services in India-Concept and Application. New Delhi: Sage Publications India Pvt. Ltd.
- Milling, B. E. (2003). The Basics of Finance: Financial Tools for Non-Financial Managers. Indiana: universe Company.
- Mittra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. (2015). Financial Planning. New Delhi: Sage Publications India Pvt. Ltd.
- Zokaityte, A. (2017). Financial Literacy Education. London: Palgrave Macmillan.

Note: Latest editionof textbooks and reference Booksmay be used

PART I-WORK BOOK	Total hours per week/Credits
Unit 1: Receptive Skills: Reading Skills and Listening Skills	**15 hours**
Chapter 1: Comprehension passage, classification and process analysis	3 hrs
Chapter 2: Referencing Skill, Brochure, Advertisements and Picture reading	3 hrs
Chapter 3: Data Interpretation	3 hrs
Chapter 4: Data Interpretation	3 hrs
Chapter 5: Non-verbal and Verbal signs of active listening	1 hrs
Chapter 6: Non-verbal and Verbal signs of active listening	2 hrs
Unit 2: Productive Skills: Speaking Skills and Writing Skills	**15 hrs**
Chapter 7: Introducing oneself, Introducing others, Requests, Offering help Congratulating, Enquiries and Seeking permission.	4 hrs
Chapter 8: Giving instructions to do a task and to use a device, Giving Directions	4 hrs
Chapter 9: Concord, Question Forms, Question Tags.	3hrs
Chapter 10: Use of Derivatives, Linkers.	4 hrs
Part 2-Course Book-CONFLATIONS-I Prasaranga, Banglore university Press	**28 hrs**
Chapter 11: I Shall Go Back in the New Year - Nilim Kumar	4 hrs
Chapter 12: Sonnet (My Father) - Yehuda Amichai	4 hrs
Chapter 13: The Wolf - Farooq Sarwar	4 hrs
Chapter 14: Leaving - M.G.Vassanji	4 hrs
Chapter 15: Real Food - Chimamanda Ngozi Adichie	4 hrs
Chapter 16: Wings of Fire - Dr A.P.J. Abdul Kalam	4 hrs
Chapter 17: Relations between Men and Women - Raja Ram Mohan Roy	4 hrs

ಪರಿವಿಡಿ

ಘಟಕ-1 : ಕನ್ನಡ ನಾಡು-ನುಡಿ ಚಿಂತನೆ

ಘಟಕ-2 : ಆಕಾಶ

ಘಟಕ-3- ತಾರುಣ್ಯ

ಘಟಕ-3- ಸಂಕೀರ್ಣ

SUBJECT : HINDI

I Semester B.C.A., B.Sc.(FAD)- Language under AECC for the year 2021-22 onwards

Max. Marks:60+40

Texts:

Edited by: Smt. Malathi A.M
Dr. Suryavanshi .D.P

1. Hindi Niband Sahitya: "Nibandh Sagar"
(Printed and Published by Prasaranga, Bangalore University,Bangalore)
2. Karyalayi Hindi: Alekhan, Tippan, Prativedan (Report)

3. Sankshepan

Reference Books:

1) Karyalay Alekhan Aur Tippan :	Prakashak-Karnatak Mahila Hindi Seva Samiti, Chamarajpet, Bangalore.
2) Prayojan Mulak Hindi Ki Nayi Bhumika:	Kailash Nath Pandey, Lokabharathi Prakashan, Ilahabad

DIVISION OF MARKS

1. Objective type Questions		10x 1=10
2. 2 Annotations from prose	(2) out of (3)	2 x 7=14
3. 1 main question from prose	(1) out of (2)	1 x16=16
4. 1 short notes from prose	(1) out of (2)	1 x 5-05
5. Karyalayi Hindi	(2) out of (3)	2 x 4=08
6. Sankshepan	(1 Passage)	1 x7-07
		Theory Total=60
Internal Assessment Marks		=40
CREDITS-03	HOURS-04	Total=100

I Semester BCA/BHM & other Courses
Title: Sanskrit Poetry, Grammar and Comprehension

Semester	Ability Enhancement compulsory course(L+T)	Marks	Credits
1	a) Introduction to Classical Sanskrit Poetry b)Selected Portion of a Sanskrit Poetic composition-Buddhacharitha- Sarga-Ill	42	3
	a) Simple Sanskrit Sentence formation b) Subantha Prakaranam-Ajantha Shabda, Sarvanama Shabda C) Comprehension in Sanskrit	18	
	Continuous Evaluation Attendance, Assignment, Internal Test Creative Writing, Conversation in Sanskrit	40	
	Total	100	3

Scheme of Examination

1. Multiple choice questions	1x8=8
2. Essay type questions (1 of 2)	1x8=8
3. Short notes (2 of 4)	2x4=8
4. Translation and explanation of Shlokas (4 of 6)	4x3=12
5. Reference to context (2 of 4)	2x3=6
6. Grammar (Should be answered in Sanskrit only)	
a) Simple Sanskrit Sentence formation (5 of 8)	5x1=05
b) Identifying Linga, Vibhakti & Vachana (5 of 8)	5x1=05
7. Comprehension in Sanskrit	4x2=8

Books for study & Reference:

1. Buddhacharitham-EH Johnston
2. Buddhacharitham III Canto-S Rangachar.
3. ಸಂಸ್ಕೃತ ಗದ್ಯ ಪದ್ಯಸಂಗ್ರಹ: ಪ್ರಸಾರಂಗ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ
4. History of Classical Sanskrit Literature by M. Krishnamacharyar.
5. Samkruta Sahitya Ithihasa (Kannada Translation)-on
6. Bhasha Shastra Mattu Samskruta Sahitya Charitre (kannada) edited by Dr K. Krishnamurthy Vidwan Ranganatha Sharma and vidwan H.K. Siddagangaiah,
7. History of Classical Sanskrit Literature-S.Rangachar
8. Samskruta Sahitya Sameekshe (Kannada) Dr. M. Shivakumara Swamy
9. Higher Sanskrit Grammar-M.R. Kale.
10. Subhodha Samskrutha Vyakarana-D.N. Shanbhag.

Editor 1. Buddhacharitham:- III Canto Vidushi. Malathi. H

University Grants Commissions
ENVIRONMENTAL STUDIES
ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)

Total Contact Hours: 45	Course Credits: 3
No. of Teaching Hours/week: 3	Duration of ESA/Exam: 2 Hours
Formative assessment Marks: 40	Semester and end assessment marks: 40

Content of ENVIRONMENTAL STUDIES-AECC		45 Hours
Unit 1	**Chapter 1: Introduction to Environmental Studies:** • Multidisciplinary nature of environmental studies. • Scope and importance; Concept of sustainability and sustainable development.	02
	Chapter 2: Ecosystems What is an ecosystem? Structure and function of ecosystem Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems: a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)	06
	Chapter 3: Natural Resources: Renewable and Non- Renewable Resources • Land resources and land-use change; Land degradation, soil erosion and desertification. • Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations. • Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (International & Inter-state). • Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.	07
Unit-2	**Chapter 4: Biodiversity and Conservation** • Levels of biological diversity: Genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hotspots. • India as a mega-biodiversity nation; Endangered and endemic species of India. • Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity • Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.	08
	Chapter 5: Environmental Pollution • Environmental Pollution: Types, causes, effects and controls; Air, water, soil and noise pollution. • Nuclear hazards and human health risks. • Solid waste management, Control measures of urban and industrial waste. • Pollution case studies.	07

Content of ENVIRONMENTAL STUDIES-AECC		45 Hours
Unit-3	**Chapter 6: Environmental Policies and Practices** • Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. • Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wildlife (Protection) Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD). • Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.	07
	Chapter 7: Human Communities and the Environment • Human population growth: Impacts on environment, human health and welfare. • Resettlement and rehabilitation of project affected persons; case studies. • Disaster management: Floods, Earthquake, Cyclones and Landslides. • Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan. • Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. • Environmental communication and public awareness, case studies (e.g., CNG vehicles in cities).	06
	Chapter 8: Field work (Any two) • Visit to an area to document environmental assets: river/forest/flora/fauna, etc. • Visit to a local polluted site-urban/Rural/Industrial/Agricultural. • Study of common plants, insects, birds, and basic principles of identification. • Study of simple ecosystems - pond, river, Delhi ridge, etc.	02

Reference

1. Bharucha, E. (2015). Textbook of Environmental Studies.
2. Carson, R. (2002). Silent Spring. Houghton Mifflin Harcourt.
3. Climate Change: Science and Politics. (2021). Centre Science and Environment, New Delhi.
4. Gadgil, M., & Guha, R. (1993). This Fissured Land: An Ecological History of India. Univ. of California Press.
5. Gleeson, B. and Low, N. (eds.) (1999). Global Ethics and Environment, London, Routledge.
6. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. (2006). Principles of Conservation Biology. Sunderland: Sinauer Associates.
7. McCully, P. (1996). Rivers no more: the environmental effects of dams (pp. 29-64). Zed Books.
8. McNeill, John R. (2000). Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Nandini, N., Sunitha N., & Sucharita Tandon. (2019). A text book on Environmental Studies (AECC). Sapna Book House, Bengaluru.
10. Odum, E.P., Odum, H.T. & Andrews, J. (1971). Fundamentals of Ecology. Philadelphia: Saunders.
11. Pepper, I.L, Gerba, C.P. & Brusseau, M.L. (2011). Environmental and Pollution Science. Academic Press.

12. Rajit Sengupta and Kiran Pandey. (2021). State of India's Environment 2021: In Figures. Centre Science and Environment.
13. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. (2012). Environment. 8th Edition. John Wiley & Sons.
14. Rosencranz, A., Divan, S., & Noble, M. L. (2001). Environmental law and policy in India.
15. Sengupta, R. (2003). Ecology and economics: An approach to sustainable development. OUP.
16. Singh, J.S., Singh, S.P. and Gupta, S.R. (2014). Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
17. Sodhi, N.S., Gibson, L. & Raven, P.H. (Eds). (2013). Conservation Biology: Voices from the Tropics. John Wiley & Sons.
18. Wilson, E. O. (2006). The Creation: An appeal to save life on Earth. New York: Norton.
19. World Commission on Environment and Development. (1987). Our Common Future. Oxford University Press.

CA-C6T: COMPUTER ARCHITECTURE

Total Teaching Hours: 48 **No. of Hours / Week: 03**

UNIT-I

[12 Hours]

Number Systems: Binary, Octal, Hexa decimal numbers, base conversion, addition, subtraction of binary numbers, one's and two's complements, positive and negative numbers, character codes ASCII, EBCDIC. Computer Arithmetic: Addition and Subtraction, Multiplication and Division algorithms, Floating-point Arithmetic Operations, Decimal arithmetic operations. Structure of Computers: Computer types, Functional units, Basic operational concepts, Von-Neumann Architecture, Bus Structures, Software, Performance, Multiprocessors and Multicomputer, Digital Logic Circuits: Logic gates, Boolean algebra, Map Simplification. Combinational Circuits: Half Adder, Full Adder, flipflops.Sequentialcircuits:Shiftregisters,Counters,IntegratedCircuits,Mux,Demux,Encoder,Decoder.Data representation: Fixed and Floating point.

UNIT - II

[12 Hours]

Basic Computer Organization and Design: Instruction codes, Computer Registers, Computer Instructions and Instruction cycle. Timing and Control, Memory-Reference Instructions, Input-Output and interrupt. Central processing unit: Stack organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Complex Instruction Set Computer (CISC) Reduced Instruction Set Computer (RISC), CISC vs RISC

UNIT - III

[12 Hours]

Register Transfer and Micro-operations: Register Transfer Language, Register Transfer, Bus and Memory Transfers, Arithmetic Micro-Operations, Logic Micro-Operations, Shift Micro-Operations, Arithmetic logic shift unit. Micro-programmed Control: Control Memory, Address Sequencing, Micro-Program example, Design of Control Unit. Input Output: I/O interface, Programmed IO, Memory Mapped IO, Interrupt Driven IO, DMA. Instruction level parallelism: Instruction level parallelism (ILP)-over coming data hazards, limitations of ILP

UNIT - IV

[12 Hours]

Memory System: Memory Hierarchy, Semiconductor Memories, RAM(Random Access Memory), Read Only Memory (ROM), Types of ROM, Cache Memory, Performance considerations, Virtual memory, Paging, Secondary Storage, RAID. Multiprocessors And Thread level Parallelism: Characteristics of multiprocessors, Multi-Threaded Architecture, Distributed Memory MIMD Architectures, Interconnection structures,

Text Books:

1. Mano M Morris, "Computer System Architecture", 3rd edition Pearson India(2019).
2. William Stallings, "Computer Organization and Architecture designing for performance", 10th edition, Pearson(2016)

Reference Books:

1. Subrata Ghoshal, "Computer Architecture And Organization", Pearson India(2011). 2. Andrew S. Tanenbaum " Structured Computer Organization", 5th edition, Pearson Education Inc(2006). 3. Carl Hamacher, Zvonks Vranesic,SafeaZaky, "Computer Architecture And Organization", 5th edition McGraw Hill New Delhi,India(2002). 4. Kai Hwang, "Advanced Computer Architecture - Parallelism, Scalability, Programmability", Tata Mcgraw-Hill (2008).

CA67T: OBJECT ORIENTED PROGRAMMING USING JAVA

Total Teaching Hours: 48 **No. of Hours / Week: 03**

UNIT-I

[12 Hours]

Introduction to Java: Basics of Java programming, Data types, Variables, Operators, Control structures including selection, Looping, Java methods, Overloading, Math class, Arrays in java. Objects and Classes: Basics of objects and classes in java, Constructors, Finalizer, Visibility modifiers, Methods and objects, Inbuilt classes like String, Character, String Buffer, File, this reference

UNIT - II

[12 Hours]

Inheritance and Polymorphism: Inheritance in java, Super and sub class, Overriding, Object class, Polymorphism, Dynamic binding, Generic programming, Casting objects, Instance of operator, Abstract class, Interface in java, Package in java, UTIL package.

UNIT - III

[12 Hours]

Event and GUI programming: Event handling in java, Event types, Mouse and key events, GUI Basics, Panels, Frames, Layout Managers: Flow Layout, Border Layout, Grid Layout, GUI components like Buttons, Check Boxes, Radio Buttons, Labels, Text Fields, Text Areas, Combo Boxes, Lists, Scroll Bars, Sliders, Windows, Menus, Dialog Box, Applet and its life cycle, Introduction to swing, Exceptional handling mechanism. I/O programming: Text and Binary I/O, Binary I/O classes, Object I/O, Random Access Files.

UNIT - IV

[12 Hours]

Multithreading in java: Thread life cycle and methods, Runnable interface, Thread synchronization, Exception handling with try-catch-finally, Collections in java, Introduction to JavaBeans and Network Programming.

Text Books:

1. E. Balagurusamy, Programming with JAVA, McGraw Hill, New Delhi, 2007

Reference Books:

1. Raj Kumar Buyya, Object Oriented Programming with JAVA, McGraw Hill, 2009
2. Herbert Schildt, Java A Beginner's Guide – Create, Compile, and Run Java Programs Today, Sixth Edition, Oracle Press, 2014
3. Ken Arnold, James Gosling, "The Java Programming Language, Fourth Edition, Addison Wisely, 2005
4. Herbert Schildt, 'The Complete Reference Java, 7th Edition, McGraw Hill, 2007

Web Resources:

1. https://docs.oracle.com/javase/tutorial/
2. https://javabeginnerstutorial.com/core-java-tutorial/

CA-C8T: DATABASE MANAGEMENT SYSTEMS

Total Teaching Hours: 48 **No. of Hours / Week: 03**

UNIT-I

[12 Hours]

Databases and Database Users: Introduction, An example, Characteristics of the Database Approach, Actors on the Scene, Workers behind the Scene, Advantages of Using DBMS Approach, A Brief History of Database Applications, When Not to Use a DBMS. Database System Concepts and Architecture: Data Models, Schemas, and Instances, Three-schema Architecture and Data Independence, Database Languages and Interfaces, The Database System Environment, Centralized and Client-Server Architectures, Classification of Database Management Systems.

UNIT - II

[12 Hours]

Data Modeling Using Entity-Relationship Model: Using High-Level Conceptual Data Models for Database Design, An Example Database Application, Entity Types, Entity Sets, Attributes and Keys, Relationship Types, Relationship Sets, Roles and Structural Constraints, Weak Entity Types, Refining the ER Design Company Database Diagrams, Naming Conventions and Design. Issues, File organization and storage, secondary storage devices, type of single level ordered index, multi-level indexes, indexes on multiple keys, other types of indexes.

UNIT - III

[12 Hours]

Relational Model and Relational Algebra: Relational Model Concepts, Relational Model Constraints and Relational Database Schemas, Update Operations, Transactions and Dealing with Constraint Violations, Unary Relational Operations: SELECT and PROJECT, Relational Algebra Operations from SET Theory, Binary Relational Operations: JOIN and DIVISION, Additional Relational Operations, Examples of Queries in Relational Algebra. Relational Database Design: Anomalies in a database, functional dependency, normal forms, lossless join and dependency, BCNF, normalization through synthesis, higher order normal forms. SQL- SQL Data Definition and Data Types, Specifying Constraints in SQL, Schema Change Statements in SQL, Basic Queries in SQL, More Complex SQL Queries, Insert, Delete and Update Statements in SQL, Specifying Constraints as Assertion and Trigger, Views(Virtual Tables) in SQL, Embedded SQL, Dynamic SQL,

UNIT - IV

[12 Hours]

Introduction to transaction processing, transaction and system concepts, desirable properties of transactions, transaction support in SQL. Concurrency control techniques: two-phase locking techniques, concurrency control based on timestamp ordering. Recovery techniques: recovery concepts, recovery in multi-database systems, database backup and recovery from catastrophic failures.

Text Books:

1. Elmasri and Navathe: Fundamentals of Database Systems, 7th Edition, Addison - Wesley, 2016.
2. Silberschatz, Korth and Sudharshan Data base System Concepts, 7th Edition, Tata McGraw Hill, 2019.

Reference Books:

1. C.J. Date, A. Kannan, S. Swamynatham: An Introduction to Database Systems, 8th Edition, Pearson education, 2009
2. Database Management Systems :Raghu Ramakrishnan and Johannes Gehrke: , 3rd Edition, McGrawHill, 2003

1. Write a simple java application, to print the message, “Welcome to java”

2. Write a program to display the month of a year. Months of the year should be held in an array.

3. Write a program to demonstrate a division by zero exception

4. Write a program to create a user defined exception say Pay Out of Bounds. .

5. Write a java program to add two integers and two float numbers. When no arguments are supplied, give a default value to calculate the sum. Use function overloading.

6. Write a program to perform mathematical operations. Create a class called AddSub with methods to add and subtract. Create another class called MulDiv that extends from AddSub class to use the member data of the super class. MulDiv should have methods to multiply and divide A main function should access the methods and perform the mathematical operations.

7. Write a program with class variable that is available for all instances of a class. Use static variable declaration. Observe the changes that occur in the object’s member variable values.

8. Write a java program to create a student class with following attributes: Enrollment_id: Name, Mark of sub1, Mark of sub2, mark of sub3, Total Marks. Total of the three marks must be calculated only when the student passes in all three subjects. The pass mark for each subject is 50. If a candidate fails in any one of the subjects his total mark must be declaredas zero. Using this condition write a constructor for this class. Write separate functions for accepting and displaying student details. In the main method create an array of three student objects and display the details.

9. In a college first year class are having the following attributesName of the class (BCA, BCom, BSc), Name of the staff No of the students in the class, Array of students in the class

10. Define a class called first year with above attributes and define a suitable constructor. Also write a method called best Student () which process a first-year object and return the student with the highest total mark. In the main method define a first-year object and find the best student of this class 11. Write a Java program to define a class called employee with the name and date of appointment. Create ten employee objects as an array and sort them as per their date of appointment. ie, print them as per their seniority.

12. Create a package‘ student.Fulltime.BCA‘ in your current working directory

a. Create a default class student in the above package with the following attributes: Name, age, sex. b. Have methods for storing as well as displaying

13. Write a small program to catch Negative Array Size Exception. This exception is caused when the array is initialized to negative values.

14. Write a program to handle Null Pointer Exception and use the “finally” method to display a message to the user.

15. Write a program which create and displays a message on the window

16. Write a program to draw several shapes in the created window

17. Write a program to create an applet and draw grid lines

18. Write a program which creates a frame with two buttons father and mother. When we click the father button the name of the father, his age and designation must appear. When we click mother similar details of mother also appear.

8

19. Create a frame which displays your personal details with respect to a button click
20. Create a simple applet which reveals the personal information of yours.
21. Write a program to move different shapes according to the arrow key pressed.
22. Write a java Program to create a window when we press M or m the window displays Good Morning, A or a the window displays Good After Noon E or e the window displays Good Evening, N or n the window displays Good Night
23. Demonstrate the various mouse handling events using suitable example.
24. Write a program to create menu bar and pull-down menus.

PART – A

1. Draw E-R diagram and convert entities and relationships to relation table for a given scenario. Two assignments shall be carried out i.e. consider two different scenarios (eg. bank, college)

Consider the Company database with following Schema

EMPLOYEE (FNAME, MINIT, LNAME, SSN, BDATE,ADDRESS,SEX,SALARY, SUPERSSN, DNO)

DEPARTMENT (DNAME, DNUMBER,MGRSSN,MSRSTARTDATE)

DEPT_LOCATIONS (DNUMBER, DLOCATION)

PROJECT (PNAME, PNUMBER, PLOCATION, DNUM)

WORKS_ON (ESSN, PNO<HOURS)

DEPENDENT (ESSN, DEPENDENT_NAME, SEX, BDATE, RELATIONSHIP)

2. Perform the following:

a. Viewing all databases, Creating a Database, Viewing all Tables in a Database, Creating Tables (With and Without Constraints), Inserting/Updating/Deleting Records in a Table, Saving (Commit) and Undoing (rollback)

3. Perform the following: a. Altering a Table, Dropping/Truncating/Renaming Tables, Backing up / Restoring a Database.

4. For a given set of relation schemes, create tables and perform the following Simple Queries, Simple Queries with Aggregate functions, Queries with Aggregate functions (group by and having clause).

5. Execute the fallowing queries

a. How the resulting salaries if every employee working on the 'Research' Departments is given a 10% raise.

b. Find the sum of the salaries of all employees of the 'Accounts' department, as well as the maximum salary, the minimum salary, and the average salary in this department

6. Execute the fallowing queries

a. Retrieve the name of each employee Controlled by Department number 5 (use EXISTS operator).

b. Retrieve the name of each dept and number of employees working in each Department which has at least 2 employees

7. Execute the fallowing queries

a. For each project, retrieve the project number, the project name, and the number of employee who work on that project.(use GROUP BY)

b. Retrieve the name of employees who born in the year 1990's

8. For each Department that has more than five employees, retrieve the department number and number of employees who are making salary more than 40000.

9.For each project on which more than two employees work, retrieve the project number, project name and the number of employees who work on that project.

10. For a given set of relation tables perform the following: Creating Views (with and without check option), Dropping views, Selecting from a view

PART – B

Create the following tables with properly specifying Primary keys, Foreign keys and solve the following queries.
BRANCH (Branchid, Branchname, HOD)
STUDENT (USN, Name, Address, Branchid, sem)
BOOK (Bookid, Bookname, Authorid, Publisher, Branchid)
AUTHOR (Authorid, Authorname, Country, age)
BORROW (USN, Bookid, Borrowed_Date)

1. Perform the following:
   a. Viewing all databases, Creating a Database, Viewing all Tables in a Database, Creating Tables (With and Without Constraints), Inserting/Updating/Deleting Records in a Table, Saving (Commit) and Undoing (rollback) Execute the following Queries:
2.
   a. List the details of Students who are all studying in 2nd sem BCA.
   b. List the students who are not borrowed any books.
3.
   a. Display the USN, Student name, Branch_name, Book_name, Author_name, Books_Borrowed_Date of 2nd sem BCA Students who borrowed books.
   b. Display the number of books written by each Author.
4.
   a. Display the student details who borrowed more than two books.
   b.Display the student details who borrowed books of more than one Author.
5.
   a. Display the Book names in descending order of their names.
   b. List the details of students who borrowed the books which are all published by the same publisher. Consider the following schema: STUDENT (USN, name, date_of_birth, branch, mark1, mark2, mark3, total, GPA)
6. Perform the following:
   a. Creating Tables (With and Without Constraints), Inserting/Updating/Deleting Records in a Table, Saving (Commit) and Undoing (rollback)
7. Execute the following queries:
   a. Find the GPA score of all the students.
   b. Find the students who born on a particular year of birth from the date_of_birth column.
8.
   a. List the students who are studying in a particular branch of study.
   b. Find the maximum GPA score of the student branch-wise.

Open Elective Course (OEC)
Name of the Course: Fundamentals of Investments in Capital Market.

Course Credits	No. of Hours per week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs

Pedagogy: Classroom lecture, Tutorials, Group discussion, Seminar, Case studies, Fieldwork etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

- Increasing public understanding of SEBI, its goals, powers, management, and functions.
- Introduce the mechanisms of stock market activities.
- Understanding the practical aspects of primary market operations & book building process
- Creating an insight into the functions of stock exchange and their working

Syllabus

Module No. 1: An overview of capital market (12 Hours)
Financial System – Meaning, Definitions, Features and Functions of Financial System. Classification of Financial System. Meaning and Importance of Capital Market and Money Market. Basic functions of Capital Market and Money Market. Differences between Capital Market and Money Market. Classification of Capital Market. Kinds of Financial Instruments in the Industrial Securities Market.

Module No. 2: Primary and Secondary Market (14 Hours)
Primary Market - Meaning and Role of Primary Market. Methods of floating New Issue - IPO, FPO, Public Issue, Bonus Issue, Right Issue, Private Placement, Intermediaries (Players) in the New Issue Market. Benefits and Limitations of Primary Market.
Secondary Market - Meaning and Role of Secondary Market. Structure & Functions of Secondary Market. Benefits and Limitations of Secondary Market. Differences between Primary Market and Secondary Market. Stock Exchange - Meaning and Role of Stock Exchange. Functions, Benefits and Limitations of Stock Exchange. Trading and Settlement System in Stock Exchanges. DEMAT A/C – Procedure for Opening and operating DEMAT A/C. Online Trading (Investment) Procedure in Stock Exchanges; Stock Brokers - Types and Functions. Objectives of NSE, BSE & OTCEI.

Module No. 3: Investment Avenues (8 Hours)
Meaning and Objectives of Investment. Meaning and Types of Investment Avenues - Bank Fixed Deposits in Banks, Fixed Deposits in Companies, Post Office Monthly Income and Other Schemes, Public Provident Fund, National Pension Scheme, Equity and Preference Shares, Mutual Funds, Debentures, Systematic Investment Plans (SIPs), Gold ETF, RBI Bonds, Unit Linked Insurance Plan (ULIP)

Module No. 4: Securities and Exchange Board of India SEBI (8 Hours)SEBI - Constitution and Objectives of SEBI. Powers and Functions of SEBI. SEBI Committees, SEBI Departments, SEBI Guidelines for Primary and Secondary Markets. Role of SEBI in the protection of investor interests.

Skill Developments Activities:

- Enlist the functions of Stock Exchanges in India.
- Visit a nearest stock broking company and enlist the procedure for stock trading.
- Organize a Mock Stock Exchange Activity and prepare a related Report.
- List out and understand a few Recent Developments in Secondary Market
- Any other activities, which are relevant to the course.

Open Elective Course (OEC)
Name of the Course: E - Business

Course Credits	No. of Hours per week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs

Pedagogy: Classroom lecture, Tutorials, Group discussion, Seminar, Case studies, Fieldwork etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

- Understand the basic concepts of E-commerce;
- Have the knowledge of the different types of E-Commerce Models.
- Understand the processes of developing and implementing E-Payments.
- Be aware of the ethical, social, and security issues of E-commerce.
- Distinguish the different stages of developing a website.

Syllabus

Module No. 1: Introduction to E - Business and E - Commerce (10 Hrs)
Meaning, Features and Benefits of E-Commerce. E-Commerce VS Traditional Commerce. Media Convergence, Business Applications & Need for E-Commerce, Meaning, Nature and Benefits of E-Business, Business Application of E-Commerce, Business-to-Consumer (B2C), Business-to-Business (B2B), Consumer-to-Consumer (C2C), and Consumer-to-Business (C2B). Differences between E-Commerce and E-Business.

Module No. 2: E - Payment Systems (12 Hrs)
Meaning and Features of E – Payment System. E - Payment System VS Traditional Payment System. Types of E-Payment Systems - Electronic Clearing Services, Credit and Debit Card Payments, Contactless Cards, Rupay Cards, UPI, RTGS, NEFT, IMPS, AePS, E-Money. Benefits and Limitations of E – Payment System.

Module No. 3: Securities in E - Commerce (08 Hrs)
Meaning, Definitions, Dimensions and Scope of E – Security. E-Commerce Security Environment. Threats in Computer Systems: Virus, Hacking, Sniffing, Cyber – Vandalism, Etc.,

Module No. 4: E - Start ups (12 Hrs)
Meaning, Definition and Nature of E – Startups. Challenges and Steps of Launching Online Business. Benefits and Limitations of Online Business. Meaning and benefits of E-Procurement. Types & Drivers of e-procurement. Components of e- procurement systems. Implementation of e- procurement system. Reasons behind the success of e-commerce companies - Case studies of Walmart, Amazon, IKEA, Starbucks, PhonePe, Flipkart, Big Basket, Justdial, OLX and OYO.

Skill Developments Activities:

- List out any five examples for each E-commerce model.
- Write a step to install and set up a UPI account in Mobile.
- Write a brief case study on the online shopping system in India.
- Derive or discuss case study for E-Commerce Security Issues and Solutions
- Any other activities, which are relevant to the course.

Reference Books:

- Dr. C. S. Rayudu – E Commerce, HPH
- C.S.V Murthy- E Commerce, HPH
- Kamlesh K. Bajaj, —E-Commerce- The Cutting Edge of Business‖, Tata McGraw-Hill, 1 st Edition, 2005.
- J. Christopher Westland, Theodore H. K Clark, —Global Electronic Commerce- Theory and Case Studies‖, University Press, 1st Edition, 1999.
- Dr. Sudeshna Chakraborty , Priyanka Tyagi - E Commerce for Entrepreneurs-1st edition BPB Publications
- S.J. P.T. Joseph-E-COMMERCE : An Indian Perspective- 6th edition -PHI Learning Pvt. Ltd

Note: Latest edition of textbooks and reference Books may be used.

BCA II Semester - ENGLISH

PART II-COURSEBOOK
CONFLATIONS-1

1. I Shall Go Back in the New Year-Nilim Kumar
2. The Wolf-Farooq Sarwar
3. Leaving-M.G.Vassanji
4. Wings of fire-Dr A.P.J, Abdul Kalam
5. Relations between Men and Women- Raja Ram Mohan Roy

BCA II Semester - ENGLISH

PART1-WORKBOOK
Unit 1: Receptive Skills: Reading Skills and Listening Skills

1. Reading passage to give a Title
2. Reading for Vocabulary building synonyms, homonyms, homophones, suffixes, prefixes, collocations, often confused words.
3. Reading passages on Specific fields for Vocabulary building.
4. Barriers for effective listening
5. Types of Listening
6. Techniques to improve listening skills.
7. Listening Activities listening to pre-recorded audios, movies and other listening activities.

Unit 2: Productive Skills: Speaking Skills and Writing Skills

8. Reported Speech
9. Dialogue writing
10. Verbal Communication and Non-verbal communication
11. Summarizing
12. Speech Writing
13. Essay Writing

PART II-COURSEBOOK
CONFLATIONS-II

1. Earth Never dies-NiyiOsundare
2. The Death of a Government Clerk- Anton Chekhov
3. Bonds of Friendship- Craig Burkholder
4. A Corpse in the well-Shankar RamachandraKharat
5. The Refugee-Pearl S.Buck

ಗಣಕ ಕನ್ನಡ-1 ಬಿ.ಸಿ.ಎ. 2ನೇ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯ.

ಪರಿವಿಡಿ

ಘಟಕ-1 : : ವಾಣಿಜ್ಯ

ಘಟಕ-2 : : ದಾಂಪತ್ಯ

ಘಟಕ-3 : : ತಂತ್ರಜ್ಞಾನ

ಘಟಕ-4 : : ಸಂಕೀರ್ಣ

BCA HINDI Syllabus 2nd Semester 2023

II Semester B.C.A., B.Sc. (FAD) Language under AECC
for the year 2021-22 onwards

Texts: **Max. Marks:60+40**
CREDITS-03 **HOURS-04**

1. Hindi Kahani Sahitya: "Katha Nidhi" Edited by: Dr. Narayana K
Dr. Basavaraju.M

(Printed and Published by Prasaranga, Bangalore University, Bangalore)

2. Prayojan Mulak Hindi :
1) Rozgar Parak Hindi, Filmi Jagath, Vigyapan,Srujanathmak Lekhan, Hindi Software
2) Anuvad Kala: Paribhasha, Prakar, Anuvad Ki Avashyakata, Achche Anuvadak Ke Gun

Reference Books:
1) Prayojan Mulak Hindi Ke Naye Ayam: Dr. Pandit Banne
2) Prayojan Mulak Hindi Ki Nayi Bhumika: Kailash Nath Pandey
3) Prayojan Mulak Hindi Ke Vivid Roop: Dr. Rajendra Mishra, Rakesh Sharma

II Semester R.C.A., B.Sc. (FAD)- Language under AECC

1. Objective type Questions		10x 1=10
2. 2 Annotations from prose	(2) out of (3)	2 x 7=14
3. 1 main question from prose	(1) out of (2)	1 x16=16
4. I short notes from prose	(1) out of (2)	1 x 5=05
5. Prayojan Mulak Hindi	(3) out of (5)	3 x 5=15
		Theory Total=60
		Internal Assessment Marks=40
		Total=100

II Semester BCA/BHM & other Courses
Title: Sanskrit Prose Literature, Grammar and Translation

Semester	Ability Enhancement compulsory course(L+T)	Marks	Credits
II	a) Introduction to Samskrula Gadya Kavya b) Selected Portion of a Sanskrit Prose composition **Vethala Panchavimshathi - Selected four stories**	42	3
	a) Correction of errors b) Tiganta Prakaranam-Lat Lakara, Lang Lakara Lot Lakara Vidhiling Lakara, Lrut Lakara C) Translation from Sanskrit to Kannada/English	18	
	Continuous Evaluation Attendance, Assignment, Internal Test Creative Writing, Conversation in Sanskrit	40	
	Total	100	3

Scheme of Examination

1. Multiple choice questions	1x8=8
2. Essay type questions (1 of 2)	1x8=8
3. Short notes (2 of 4)	2x4=8
4. Translation of Prose(1 of 2)	1x6=6
5. Reference to context (4 of 6)	4x3=12
6. Grammar (Should be answered in Sanskrit only)	
a) Correction in error (5 of 8)	5x1=05
b) Identification of Lakara, Purusha & Vachana (5 of 8)	5x1=05
7. Translation from Kannada/English to Sanskrit	1x8=8

Books for study & Reference:

1.Vethala Panchavimshathi: Published by Chowkamba Vidyabhavan.

2. History of Sanskrit Literature by M.R. Kale.

3. Samkruta Sahityada Itihasa (Kannada) S Ramachandra Shastri-Prasaranga, Bangalore University Publications.

4. Bhasha Shastra Mattu Samskruta Sahitya Charitre (kannada) edited by Dr K. Krishnamurthy Vidwan Ranganatha Sharma and vidwan H.K. Siddagangaiah

5. History of Sanskrit Literature- S.Rangachar

6. History of Classical Sanskrit Literature- M. Krishnamachariyar

7. Samskruta Sahitya Sameekshe (Kannada) Dr. M. Shivakumara Swamy

8. Higher Sanskrit Grammar-M.R. Kale.

Editor Vethala Panchavimshathi- Dr. R.Shobha

Digital Fluency

Course Title: Digital Fluency	**Course Credits: 3**
Total Contact Hours: 15 hours of theory and 30 hours of practical.	Duration of ESA:
Formative Assessment Marks: 40 marks	Summative Assessment Marks: 60 marks

Course Content: In concurrence with Digital 101 on Nasscom 101 environment

Sl.no	Content	Details of topic	Duration
1.	Registration	Future Skills Course Registration Process	05 Theory hours and 10 practical hours
2.	Module 1: Emerging Technologies	Overview of Emerging Technologies:i. Artificial Intelligence, Machine Learning, Deep Learning,ii. Database Management for Data Science, Big Data Analytics,iii. Internet of Things (IoT) and Industrial Internet of Things (IoT)iv. Cloud computing and its service modelsv. Cyber Security and Types of cyber attack	05 Theory hours and 10 practical hours
3.	Module 2: Applications of Emerging Technologies	Applications of emerging technologies:i. Artificial Intelligenceii. Big Data Analyticsiii. Internet of Thingsiv. Cloud Computingv. Cyber Security	05 Theory hours and 10 practical hours
4.	Module 3: Building Essential Skills Beyond Technology	Importance of the following:i. Effective Communication Skillsii. Creative Problem Solving & Critical Thinkingiii. Collaboration and Teamwork Skillsiv. Innovation & Design Thinkingv. Use of tools in enhancing skills	05 Theory hours and 10 practical hours

References to learning resources:

1. The learning resources made available for the course titled "Digital 101" on Future Skills Prime Platform of NASSCOM