

cjdrmYyk fo'ofoky;]Hkksiky
Barkatullah University, Bhopal

As per model syllabus of U.G.C. New Delhi, drafted by Central Board of Studies
and Approved by Higher Education and the Governor of M.P.



foKku ladk;
Faculty of Science
(Approve by Computer Science BOS)

Syllabus & Prescribed Books

B.C.A. Semester Examination
2009 - 10
IV- Semester
(10+2+3)

dqylfpo
cjdrmYyk fo'ofoky;]Hkksiky

2009 & 10

eqY;

50@& :

COURSEWISE SCHEME

FOURTH SEMESTER

- | | |
|----------------------------------|---|
| 1. Course Code : | 7. Maximum marks : 400 |
| 2. Course Name : B.C.A. | 8. Minimum Passing percentage : 33 |
| 3. Total Subject : 4 | 9. Project Marks : 50 |
| 4. Compulsory Subject : 4 | 10. Project Passing marks : 17 |
| 5. Practical + viva : 1 | |
| 6. Project : Y | |

Sub. code	Subject Name	Theory										Practical		Total	
		Paper					CCE		Total Marks						
		1 st	2 nd	3 rd	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Compulsory															
	Foundation course	35	35	35	105	35	45	15	150	50	0	0	150	50	
	Data structures algorithms	35	0	0	35	12	15	5	50	17	0	0	50	17	
	Computer oriented numerical methods	35	0	0	35	12	15	5	50	17	0	0	50	17	
	We design	35	0	0	35	12	15	5	50	17	0	0	50	17	
	Implementation of numerical methods in C++	0	0	0	0	0	0	0	0	0	25	8	25	8	
	Data structure implementation										25	8	25	8	
	HTML XML														
	Job oriented														
	Project (External Assessment)	0	0	0	0	0	0	0	50	17	0	0	50	17	

fo'ks" k Vhi%& fo}r ifj"kn dh LFkbbZ lfeFr dh cSBd fnukad 26@12@08 ds in dZekad 8@13@43 ds fy;s x;s fu.kZ; vuqlkj Lukrd izkstsDV dk;Z esa 33 izfr'kr mRrh.kkZad vad izklr djuk vfuok;Z gksxkA rnuqlkj izkstsDV ds vadksa dks Js.kh iznk; gsrq x.kuk esa ugh fy;k tkosxkA

Note :- CCE may be through practicals based on implement of Numerical methods in C++

Department of Higher education, Govt. of M.P.
Semester wise Syllabus for Post Graduates As
recommended by Central board of Studies and
Approved by HE the Governor of M.P.
Session 2009-10

कक्षा	—	बी.ए. / बी.एस.सी. / बी.कॉम / बी.एस. होम साइंस / बी.ए. मैनेजमेन्ट / बी.सी.ए.
पेपर	—	I हिन्दी भाषा और विज्ञान – बोध
सेमेस्टर	—	चतुर्थ

कुल अंक – 35

इकाई – 1

1. विज्ञान – परिभाषा, शाखाएं, संक्षिप्त इतिहास
2. प्रमुख वैज्ञानिक आविष्कार और हमारा जीवन
3. भारतीय कृषि

इकाई – 2

1. भारतीय वनस्पतियाँ एवं जीव
2. जीवन – उद्भव और विकास
3. मुहावरे और लोकोक्तियाँ

इकाई – 3

1. सौर – मंडल
2. ब्रह्मांड और जीवन
3. पर्यावरण

इकाई – 4

1. व्यापार एवं उद्योग
2. जनजातीय जीवन
3. निबंध लेखन की कला

इकाई – 5

1. जल संरक्षण
2. मध्यप्रदेश के पर्यटन स्थल
3. सपनों की उड़ान : ए.पी.जे. अब्दुलकलाम

Department of Higher education, Govt. of M.P.
Semester wise Syllabus for Under Graduates
As recommended by Central board of Studies and
Approved by HE the Governor of M.P.
Session 2009-10

Class	-	B.A./B.Sc./B.Com./B.Sc. (H.Sc.)/B.A. (Mgt.)/ B.C.A.
Subject	-	Foundation Course
Paper Title	-	Paper II English Language and Scientific Temper
Semester	-	IV

Max. Marks— 35

Unit I:

Texts :

1. C. Rajagopalchari, “Three Questions”.
2. Desmond Morris, short extract from *The Naked Ape*.
3. Joseph K. Vetter, “ Eat What You Want”, First three paragraphs (*Reader’s Digest*, August 2006)
4. Urbashi Barat, “The Story of Kanada”.
5. “Against all Odds.” Adapted by Shubhra Tripathi from “The Natural Intelligence of Alexis Leon”. by Madhavankutty Pillai, *Reader’s Digest*, November 2007.
6. Keki N. Daruwalla, “Boatride along the Ganga”, Stanza 1.
7. Ashok Mahadeven, “For Heaven’s Sake”. Extract from article on J.V. Narlikar. *Reader’s Digest*, June 2007.

Unit II:

Comprehension of an unseen passage :

Questions should test (a) an understanding of the passage in question, (b) the themes and issues raised in the passage, and (c) a grasp of general language skills and issues with reference to words and usage written the passage.

To be answered by both objective/multiple-choice and short-answer questions.

Unit III:

Report-Writing of events and incidents for newspapers and magazines.

Unit IV:

Language skills : Reported speech, Voice, Expanding points into complete sentences, Reorganizing sentences to make a coherent passage.

Unit V:

Language skills : Synthesis of sentences; Transformation of simple, Compound and complex sentences, Positive, comparative and Superlatives; Expressing condition; elision.

उच्चशिक्षा विभाग, म.प्र. शासन
स्नातक कक्षाओं के लिये सेमेस्टर अनुसार पाठ्यक्रम
केन्द्रीय अध्ययन मण्डल द्वारा अनुशंसित तथा म.प्र. के राज्यपाल द्वारा अनुमोदित
Department of Higher Education Govt. of M.P. B.A/B.Com/B.Sc/
B.Sc home science semester wise Syllabus
As recommended by Central Board of Studies and approved by the Governor of M.P.

Max. Marks / अधिकतम अंक : 35

Class/ कक्षा	–	बी.ए./बी.एस.सी./बी.कॉम/बी.एस. होम साइंस/ बी.ए. मैनेजमेन्ट/बी.सी.ए.
Semester	–	IV
Subject	–	आधार पाठ्यक्रम
Paper Title	–	पर्यावरण अध्ययन

इकाई –1 Unit- 1	<p>प्राकृतिक संसाधन की समस्याएँ</p> <p>(क) जल संसाधन की समस्या— सतह एवं भूजल का उपयोग , अति दोहन बाढ़ सूखा , जल पर संघर्ष , बाँध –लाभ एवं समस्याए</p> <p>(ख)वन संसाधन की संस्याएँ –उपयोग एवं अति दोहन , वनोन्मूलन , इमारती लकड़ी, निस्सारण , बाधे एवं उनका बन और आदिवासीयो पर प्रभाव</p> <p>(ग) भूमि संसाधन की समस्याएँ— स्त्रोत के क्रय में भूमि का अवभ्रमण , मानव प्रेरित भू – स्खलन और मरुस्थीकरण</p> <p>Problems of natural resources:</p> <p>(a) Problems of water resources- Utilization of surface and ground water overutilization, flood, draught ,conflict over water,Dams and related problems.</p> <p>(b)Problems of forest resources -uses and over utilization, deforestation,Dams and its effects on forests and tribes .</p> <p>(c)Problems of land resources -land as a source , erosion of land, man-induced, land slides and desertification.</p>
इकाई –2 Unit- 2	<p>जैव विविधता और उसका संरक्षण –</p> <p>क— जैव विविधता का मूल्य – उपभोग्य , उपयोग , उत्पादक उपयोग , सामाजिक , नैतिक सौर्दयंगत तथा वैकल्पिक मूल्य</p> <p>ख— वैश्विक , राष्ट्रीय तथा स्थानीय स्तरो पर जैव विविधता वृहत</p>

	<p>विविधताओं के राष्ट्र रूप में भारत ।</p> <p>ग- जैव विविधता के खतरे – आवासीय हानि , वन्य जीवन में अनाधिकार घुसपैठ तथा मानव , वन्य जीवन –संघर्ष</p> <p>Bio-diversity and its protection -</p> <p>(a) Value of bio-diversity -consumable use: productive use , social , alternative , moral asthetic and values</p> <p>(b) Bio - diversity and multi -diversity at global and national levels.</p> <p>(c) Threats to bio -diversity -loss of habitat , poaching of wildlife, man wildlife conflicts.</p>
इकाई –3 Unit- 3	<p>जनसंख्या तथा पर्यावरण</p> <p>क- जनसंख्या – वृद्धि , राष्ट्रों के बीच अंतर</p> <p>ख – जनसंख्या –विस्फोट , परिवार कल्याण कार्यक्रम</p> <p>ग- पर्यावरण और मानव स्वास्थ्य</p> <p>Human population and environment</p> <p>(a) population growth , disparities between countries .</p> <p>(b) population explosion, family welfare programme (C) Environment and human health</p>
इकाई –4 Unit- 4	<p>पर्यावरण और उसका बहुअनुशासनिक स्वरूप</p> <p>क- प्राकृतिक संसाधन</p> <p>ख – सामाजिक समस्याएँ और पर्यावरण ग- पारिस्थिकि तन्त्र</p> <p>multidisciplinary nature of environmental studies : (a) natural resources</p> <p>b social problems and the environment c environmental awarenes</p>
इकाई –5 Unit- 5	<p>पर्यावरण और उसका बहुअनुशासनिक स्वरूप</p> <p>क- प्राकृतिक संसाधन</p> <p>ख – सामाजिक समस्याएँ और पर्यावरण ग- पारिस्थिकि तन्त्र</p> <p>multidisciplinary nature of environmental studies :</p> <p>(a) natural resources</p> <p>(b) social problems and the environment</p> <p>(c) environmental awareness</p>

Barkatullah University, Bhopal
Semester-Wise Scheme for BCA
Session 2009-10 onwards
BCA Semester IV

Code No	Name of the Paper	Marks (Theory + CCE)
FC	As applicable in other courses	
BCA401	Data Structure & Algorithms	35+15
BCA402	Computer Oriented Numerical Methods	35+15
BCA403	Systems Analysis and Design	35+15
BCA404	Web Design	35+15
BCA405	Implementation of Numerical Methods in C++, Data Structure Implementation, HTML, XML (Practical + Viva)	25+25
BCA406	Project (External Assessment)	50

Barkatullah University, Bhopal
Semester-Wise Scheme for BCA
Session 2009-10 onwards

Paper Code: BCA401

Semester IV

DATA STRUCTURE & ALGORITHMS

Max Marks: 35

Unit I

Definition of Data Structure, its types, Basic operations in Data Structures.

Array – its representation, Operations on arrays, address calculation of single and multi dimensional arrays in memory, Applications of arrays.

Unit II

Stack: Representation of Stacks, operations on Stacks, infix and postfix notations, postfix expression evaluation, application of Stacks.

Queues: Representation of queues, operations on queues, circular queue, Dequeue, Priority Queue, Applications of queues.

Unit III

Linked list: Single Linked List – description & operations, Doubly Linked List – description & operations, Linked implementation of Stacks and queues, Header linked list.

Unit IV

Trees: Basic terminology, binary tree, binary search tree, Operations on binary tree: Insertion & Deletion algorithms.

Traversal of binary trees: Inorder, Preorder & Post order.

Unit V

Searching: Linear Search, Binary Search.

Sorting: Selection Sort, Bubble Sort - method & its algorithm, Quick Sort, Merge Sort.

Graphs: Related Concepts and its representations. Graph Traversal Schemes: Depth first search, Breadth first search.

TEXT BOOKS:

1. Data Structure by Schaum Series.
2. Data Structure by Tanenbaum.

REFERENCE BOOK:

1. Data Structure by Sartaj Sahani.
2. Data Structure using C++ by Yashwant Kanetkar.

Barkatullah University, Bhopal
Semester-Wise Scheme for BCA
Session 2009-10 onwards

Paper Code: BCA402

Semester IV

COMPUTER ORIENTED NUMERICAL METHODS

Max Marks: 35

UNIT I

Solutions of Algebraic, Transcendental & Simultaneous Algebraic Equations. Introduction to Algebraic & Transcendental Equations, Newton-Raphson method, Regula-Falsi method, Successive Bisection method, Secant method, Comparison of Regula-Falsi method with Bisection method, Gauss Elimination method, Gauss-Seidal method, Gauss Jordan method, Concept of Pivoting.

UNIT II

Interpolation & Extrapolation: Newton's Interpolation formulae, Newton's forward difference & Backward difference formula, Lagrange's Interpolation formula, Newton's divided-difference interpolation, Sterling's and Bessel's Central difference formula.

UNIT III

Numerical Integration & Differentiation: Introduction, Newton's Cotes formulae, Trapezoidal rule, Simpson's rule, Weddle's rule.

UNIT IV

Solution of ordinary Differential & Integral Methods: Euler's, Picard's and Taylor's series methods. Modified Euler method, Picard's method for successive approximation, method of successive differentiation, Runge-kutta second & forth order methods.

UNIT V

Correlation & Regression: Karl Pearson's Coefficient of Correlation, Rank Coefficient of Correlation, Partial & Multiple Correlation, Lines of Regression, Coefficient of Regression.

TEXT BOOKS:

1. Computer Oriented Numerical Methods by Rajaraman.
2. Mathematical Statistics by Ray & Harswarup Sharma.
3. Numerical Analysis by Prahlad Tiwari.

REFERENCES BOOKS:

1. Method of Numerical Methods by Shastri.
2. Computer Based Numerical Algorithms by Krishnamurthy.
3. Computer Oriented Numerical Methods by Salvadori.
4. Numerical Methods by H C Agarwal.
5. Fundamentals of Mathematical Statistics by Gupta & Kapoor.

Barkatullah University, Bhopal
Semester-Wise Scheme for BCA
Session 2009-10 onwards

Paper Code: BCA403

Semester IV

SYSTEM ANALYSIS & DESIGN

Max Marks: 35

Unit I

Overview of System Analysis & Design – Definition, Characteristics, System Concepts, Elements and Types. System Development Life Cycle – Impetus for change, Steps involved in SDLC, People involved in SDLC. Initial Investigation – Background Analysis, Fact finding techniques, tools for Information gathering, types of interviews and questionnaires.

Unit II

Structured Analysis – Definition, tools for structured analysis. Feasibility Study – Definition, Considerations – Technical, Economic, Behavioral & Political, Steps in Feasibility Study, Feasibility Report.
Cost Benefit Analysis (CBA) – Categories – Hardware, Personnel, Facility, Operating and Supply Costs, Procedure for CBA Determination.

Unit III

System Design – Definition, Process of Design, Structured Design, Elements of Functional Decomposition – Module, Connection and Coupling, HIPO and IPO Charts, Major development activities of Design Stage, Data Validation, Audit Trail.
System Testing – Why Testing?, Factors considered for testing, Test Data & Test Plan, Phases of Testing, Types of System Tests.

Unit IV

Quality Assurance – Definition, Goals in System Life Cycle, Levels of Quality Assurance, Trends in Testing. Implementation – Conversion, Stages of Conversion, Combating resistance to change, Post Implementation Review, Review Plan. Software Maintenance – Maintenance/Enhancement, Activities of a Maintenance procedure, reducing maintenance costs.

Unit V

System Security – Data Security, Threats to System Security, Risk Analysis, Control Measures, System Audit, Protection Against VIRUS. Hardware and Software Selection – Hardware/Software Suppliers, Procedure for Hardware/Software Selection, Major Phases in Selection, Types of Software, Attributes of Software, Criteria for Software Selection, Evaluation Process, Financial Consideration in Selection – Rental, Lease, Purchase options.

TEXT BOOKS:

1. System Analysis and Design - by Elias M Awad.
2. System Analysis & Design – by V K Jain, *Dreamtech Press*.
3. System Analysis & Design – by Theoroff.

REFERENCE BOOKS:

1. Computers Today – by Suresh K Basandra.
2. Modern System Analysis & Design – by A Hoffer, F George, S Valaciah, *Low Price Edn. Pearson Education.*
3. Information Technology & Computer Applications – by V.K.Kapoor, *Sultan Chand & Sons, New Delhi.*
4. Introduction to Systems Analysis and Design – by Lee.

Barkatullah University, Bhopal
Semester-Wise Scheme for BCA
Session 2010-11 onwards

Paper Code: BCA404

Semester IV

WEB DESIGN

Max Marks: 35

Unit I

Introduction to Internet & World Wide Web , Internet Addressing , Browsers, URL, Web Server, Web Site, Homepage, Domain Names – Basic concepts. Facilities available over the Internet - email, www, ftp, telnet, usenet, blog, faq, chat. Components of Internet - client/server, modem, cable, modem, backbone, router, IP addresses, address classes, DNS names, subnet, UDP & TCP, Uses of Internet. Introduction to HTML – HTML Overview, Structure of HTML documents, Types of Documents, HTML Elements and Attributes.

Unit II

Basic Formatting of HTML documents layout – Font, Lists, Paragraph, Break Rule, Horizontal Rule, Colors, Backgrounds, text elements, <PRE>, etc., Links in html – anchor element and its attributes, images and anchors, using META information. HTML Media Types – media like element <MARQUEE>, Audio & Video support in Web browsers.

Unit III

Advanced Layout: Tables, Frames, Layers.

Tables – layout, elements and attributes, ROWSPAN, COLSPAN.

Frames – using frames, layout of frames, problems using frames.

Layers – Concept of layers, Positioned and Inflow Layers.

Unit IV

Style Sheets – Basic Concept of Style sheet, using style sheet, Cascading Style sheets(css), using style sheets - basics and properties , positioning with style sheets.

Basic Interactivity in html: Forms – Concept of Forms, <FORM> element, attributes, Controls used for forms, examples of form design.

Unit V

Advanced Features in HTML: Scripting, DHTML & XML, Web Publishing – Concepts. Scripting – purpose of scripting, specifying scripts & designing events. DHTML: Overview of DHTML and Document Object Model, html & scripting access, rollover buttons. XML: Basic XML structure, ways to use XML, rewriting html as xml.

TEXT BOOKS:

1. The Complete Reference to HTML – by Thomas A Powell, *TMH, II Edition*.
2. Using HTML – by Lee Anne Phillips, *PHI*

REFERENCE BOOKS:

1. Learning Computer Fundamentals, MS Office & Internet & Web Technology – by Dinesh Maidasani, *Firewall Media*.
2. Introductions to Internet & Java – by Kiran Nayar, Sukhjeet Kaur, *Kalyani Publishers*.