KSKV KACHCHH UNIVERSITY

Proposed Syllabus – BCA (CBCS)

Semester - I

Subject Code	Title	Credits		Total Credits
		Theory	**Practical**	
BCA101	Business Communication (Core Compulsory)	2	-	2
BCA102	Problem Solving and Programming with C (Core Elective I)	3	-	3
BCA103	Advanced Mathematics – I (Core Elective II)	3	-	3
BCA104	Financial Accounting & Management – I (Core Elective III)	3	1	4
BCA105	Introduction to Internet and Web Programming (Core Elective IV)	3	-	3
BCA106	Computer Fundamentals & PC Software (Core Elective V)	3	-	3
BCA107L	Practical based on BCA102, BCA105 and BCA106 (Core Compulsory)	-	(3+2+4)	9
BCA108	Environment Science (Foundation Course)	1*	-	1*
		17	**10**	**27**

*The Credit of BCA108 is excluded from SGPA/CGPA

Semester - II

Subject Code	Title	Credits		Total Credits
		Theory	**Practical**	
BCA201	Computer Organization (Core Elective I)	4	-	4
BCA202	Advanced Programming with C (Core Elective II)	4	-	4
BCA203	Advanced Mathematics – II (Core Elective III)	3	-	3
BCA204	Financial Accounting & Management – II (Core Elective IV)	3	1	4
BCA205	Web Designing And Advanced Web Programming (Core Elective V)	4	-	4
BCA206	Database Management Systems Concepts (Core Elective VI)	4	-	4
BCA207L	Practical based on BCA202, BCA205 and BCA206 (Core Compulsory)	-	(3+3+1)	7
BCA208	Scope I (Foundation Course)	**1***		
		22	**8**	**30**

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Proposed Syllabus - BCA

Semester - I

Subject Code	Title	CCE	Semester Examination
BCA101	Business Communication	40%	60%
BCA102	Problem Solving and Programming with C	40%	60%
BCA103	Advanced Mathematics – I	40%	60%
BCA104	Financial Accounting & Management - I	40%	60%
BCA105	Introduction to Internet and Web Programming	40%	60%
BCA106	Computer Fundamentals & PC Software	40%	60%
BCA107L	Practical based on BCA102, BCA105 and BCA106	-	100%
BCA108	Environment Science	100%	-

Semester - II

Subject Code	Title	CCE	Semester Examination
BCA201	Computer Organization	40%	60%
BCA202	Advanced Programming with C	40%	60%
BCA203	Advanced Mathematics – II	40%	60%
BCA204	Financial Accounting & Management – II	40%	60%
BCA205	Web Designing And Advanced Web Programming	40%	60%
BCA206	Database Management Systems Concepts	40%	60%
BCA207L	Practical based on BCA202, BCA205 and BCA206	-	100%
BCA208	Scope I (Foundation Course)	**100%**	

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TEACHING AND EXAMINATION SCHEME

Semester - I

Sub Code	Subject	Teaching		Examinations			
		Hrs Per Week		Internal	External		
		Theory	Practical	Presentation/ Seminar/ Internal exam /Term Work	Theory	Practical/ Viva-Voce	Total
Passing Marks				**16**	**24**	**40**	
BCA101	Business Communication	3	2	10+10+10+10	60	-	100
BCA102	Problem Solving and Programming with C	3	3	10+10+10+10	60	-	100
BCA103	Advanced Mathematics – I	3	-	10+10+10+10	60	-	100
BCA104	Financial Accounting & Management - I	3	1	10+10+10+10	60	-	100
BCA105	Introduction to Internet and Web Programming	3	2	10+10+10+10	60	-	100
BCA106	Computer Fundamentals & PC Software	3	4	10+10+10+10	60	-	100
BCA107L	Practical based on BCA102, BCA105 and BCA106	-	Total 12 Practical as mentioned above	-	-	100	100
BCA108	Environment Science	1	-	100	-	-	100
Total		19	12				

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Semester - II

Sub Code	Subject	Teaching		Examinations			
		Hrs Per Week		Internal	External		
		Theory	Practical	Presentation/ Seminar/ Internal exam /Term Work	Theory	Practical/ Viva-Voce	Total
	Passing Marks			**16**	**24**	**40**	
BCA201	Computer Organization	4	-	10+10+10+10	60	-	100
BCA202	Advanced Programming with C	4	3	10+10+10+10	60	-	100
BCA203	Advanced Mathematics – II	3	-	10+10+10+10	60	-	100
BCA204	Financial Accounting & Management – II	3	1	10+10+10+10	60	-	100
BCA205	Web Designing And Advanced Web Programming	4	3	10+10+10+10	60	-	100
BCA206	Database Management Systems Concepts	4	1	10+10+10+10	60	-	100
BCA207L	Practical based on BCA202, BCA205 and BCA206	-	Total 8 Practicals as mentioned above	-	-	100	100
BCA108	Scope I (Foundation Course)	1	-	-	100	-	100
Total		22	8				

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BCA101 – BUSINESS COMMUNICATION

UNIT 1: INTRODUCTION TO COMMUNICATION   **(15%)**
Meaning and Definition - Process - Functions - Objectives - Importance - Essentials of good communication - Communication barriers - Overcoming communication barriers

UNIT 2: TYPES OF COMMUNICATION   **(5%)**
Written - Oral - Face-to-face - Silence - Merits and limitations of each type

UNIT 3: BUSINESS LETTERS   **(10%)**
Need and functions of business letters - Planning & layout of business letter - Kinds of business letters- Essentials of effective correspondence -

UNIT 4: DRAFTING OF BUSINESS LETTERS   **(15%)**
Enquiries and replies - Placing and fulfilling orders - Complaints and follow-up - Sales letters – Circular letters - Application for employment and resume

UNIT 5: ORAL COMMUNICATION   **(30%)**
Meaning, nature and scope - Principles of effective oral communication - Techniques of effective speech - Media of oral communication (Face-to-face conversation - Teleconferences - Press Conference - Demonstration - Radio Recording - Dictaphone - Meetings - Rumour - Demonstration and Dramatisation - Public address system - Grapevine - Group Discussion - Oral report - Closed circuit TV). The art of listening - Principles of good listening.

UNIT 6: INFORMATION TECHNOLOGY FOR COMMUNICATION   **(25%)**
Word Processor - Telex - Facsimile (Fax) - E-mail - Voice mail - Internet – Multimedia - Teleconferencing - Mobile Phone Conversation - Video Conferencing - SMS - Telephone Answering Machine - Advantages and limitations of these types.

Topics Prescribed for workshop/skill lab
i) Group Discussion
ii) Mock Interview
iii) Decision Making in a Group
iv) Written Communication
v) Presentation

Reference Books:
- Business Communication - K. K. Sinha - Galgotia Publishing Company, New Delhi.
- Media and Communication Management - C. S. Rayudu - Himalaya Publishing House, Bombay.
- Essentials of Business Communication - Rajendra Pal and J. S. Korlhalli - Sultan Chand & Sons, New Delhi.

- Business Communication (Principles, Methods and Techniques) Nirmal Singh - Deep & Deep Publications Pvt. Ltd., New Delhi.
- Business Communication - Dr. S.V. Kadvekar, Prin. Dr. C. N. Rawal and Prof. Ravindra Kothavade - Diamond Publications, Pune.
- Business Correspondence and Report Writing - R. C. Sharma, Krishna Mohan - Tata McGraw-Hill Publishing Company Limited, New Delhi.
- Communicate to Win - Richard Denny - Kogan Page India Private Limited, New Delhi.
- Modern Business Correspondence - L. Gartside - The English Language Book Society and Macdonald and Evans Ltd.
- Business Communication - M. Balasubrahmanyan - Vani Educational Books.
- Creating a Successful CV - Siman Howard - Dorling Kindersley.

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PATTERN OF QUESTION PAPER

BCA101 – BUSINESS COMMUNICATION

* Internal options are compulsory (i.e. Q.1 or Q.1; Q.2 or Q.2 etc.)
* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

The structure for the questions is as under:

Questions	Section	Marks
Question – 1 UNIT – I	A (Objective type) *(no internal option)*	5 marks
	B (Descriptive - Essay type - Short notes *with internal option)*	10 marks
Question – 2 UNIT – II	A –do-	5 marks
	B –do-	10 marks
Question – 3 UNIT – III	A –do-	5 marks
	B –do-	10 marks
Question – 4 UNIT – IV	A –do-	5 marks
	B –do-	10 marks

Types of questions for section A are varied: like: one line answers/ two line answers/ definitions/ reasoning/ derivations of equations/ derivations of sums/ drawing small figures/ matching the figures etc.

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BCA102 – PROBLEM SOLVING AND PROGRAMMING WITH C

INTRODUCTION TO PROGRAMMING LANGUAGES   **(20%)**
Introduction to machine level language, Assembly language and Higher level language. Their limitations and features.
Classification of Computer Languages – Procedural language, Non- procedural language and problem oriented.

TOOLS AND TECHNIQUES OF PROBLEM ANALYSIS   **(30%)**
Algorithm Development, Flowcharting. Numerous examples in algorithm development and Flowcharting.

PROGRAMMING IN C LANGUAGE
Introduction to C, Program characteristics, Character set, Constants and Variables, Operators and Expressions, Bit level manipulations, Data Types, I/O operations, Control/conditional Statement, Looping statements, Nested structures.   **(25%)**

Arrays and strings, User defined Functions   **(25%)**

Text Books:
- Programming in ANSI C, Balagurusamy, TMH

Reference Books:
- Fundamental of Computers, V. Rajaraman, Prentice Hall of India.
- Computer fundamentals and Programming in C – Pradip Dey, Manas Ghosh, Oxford press.
- Programming with C, Gottfried, McGraw-Hill Internationals.
- Programming with C, Venugopal & Prasad, TMH.
- Let us C – Yashwant Kanetkar, BPB.

List of sample algorithms and flowcharts (Can be used for practical also)

Introduction
- Read and print single value
- Interchanging/swapping values of two variables.

Formula based
- Find area of circle, rectangle etc.
- Find simple interest.
- Conversion of temperature.

Condition/decision based
- Find maximum/minimum from two/three numbers.
- Check for odd/even.
- Check for +ve, -ve, zero.
- Find grade for given total marks.

Loop based
- Addition of first 10 successive numbers.
- Addition of first 10 odd/even numbers.
- Find summation of successive numbers ranging from n1 to n2.
- Find factorial of n.
- Find power (XN)
- Find total marks of 5 subjects for 10 students.

Counting
- Count odd and even numbers from given range
- Count +ve,-ve, zeros from given range
- Given salary of 100 employees, count number of employees having salary in following categories:
  1. Less than 2000
  2. between 2000 to 5000
  3. between 5000 to 10000
  4. above 10000

Series
- 21 + 24 + 27 + ………… N terms
- 1, 11, 111,……….N terms
- 12 + 22 + 32 + ………… N terms
- 1, 1, 2, 3, 5, 8, ………… N terms (Fibonacci)
- R + R2 + R3 + ………… N terms
- 1/1 + 1/2 +1/3 + ………… N Terms

Including all above topics
- Find n C r
- Check for prime
- Find factorial for given range of values
- Check for palindrome
- Find reverse of given integer number
- Sum of digits of an integer number
- Minimum/maximum from N numbers
- Average of any N numbers
- Conversion from decimal to hex/octal/binary.
- Conversion from hex/octal/binary to decimal.

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PATTERN OF QUESTION PAPER

BCA102 – PROBLEM SOLVING AND PROGRAMMING WITH C

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1 (A) Answer any five (two or three line answers, 5 out of 7) (5 * 2marks)   [10]
Q.1 (B) Short Note (1out of 2) (1* 5marks)   [5]

Q.2. (A) Attempt any three (3 out of 5) (3 * 3marks)   [9]
Q.2 (B) Descriptive question (1 out of 2) (1* 6marks)   [6]

Q.3 (A) Short Notes (3 * 4marks)   [12]
Q.3 (B) Questions on finding errors or output of in given code (2 out of 3) (2 * 1.5marks) [3]

Q.4 Questions on writing C programs (2 out of 4) (2 * 7.5marks)   [15]

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BCA103 – ADVANCED MATHEMATICS – I

UNIT 1: SET THEORY   (30%)
Introduction to set theory, Methods of representation of a set, Operations on set/Properties (with logical & Venn-diagrammatic proofs), Examples related to Venn-diagrams, Cartesian product.

UNIT 2: FUNCTIONS   (20%)
Definition of function, Classification of functions, Domain and range of functions, Introduction to Linear, Quadratic, Higher degree functions, Exponential, logarithmic functions examples related to logarithmic and exponential functions, Introduction to trigonometric functions, Break-Even Analysis.

UNIT 3: INTRODUCTION TO MATRICES   (20%)
Definition of Matrix, Types of Matrices (Square, Row/Column, Identity, Null, Triangular, Transpose, Symmetric, Skew-symmetric, Scalar, Diagonal Matrix.), Arithmetic operation on Matrices (Addition, Subtraction, Multiplication of Matrices)

UNIT 4: CO-ORDINATE GEOMETRY   (30%)

Introduction to Co-ordinates, Quadrants and Lines .Distance between two points in R2 (without proof), Section formula (without proof), Area of the triangle (without proof).Co-linearity of points, Equation of Straight line, General Equation of line, Angle between two lines (without proof), Parallel and Perpendicular Lines and related examples.

Text Books:
- Business Mathematics by Dr. D. C. Sancheti & V.K.Kapoor. S.CHAND & SONS PUBLICATIONS

Reference Books:
- Advanced Mathematics by Dr. K.R. Kachot
- Schaum Series (for Basic Maths).
- Shantinarayan (for Coordinate Geometry)

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PATTERN OF QUESTION PAPER

BCA103 – ADVANCED MATHEMATICS – I

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1. (A) Define the following terms. (6 out of 6) (6 * 1marks)   [6]
Q.1. (B) Any three sums (3 out of 5) (3 * 3marks)   [9]

Q.2. (A) long sum question   [5]
<div align="center">OR</div>
Q.2. (A) long sum question
Q.2. (B) Any four questions (4 out of 5) (4 * 2.5marks)   [10]

Q.3. (A) two or three lines question (3 out of 5) (3 * 2marks)   [6]
Q.3. (B) Attempt any three questions (3 out of 5) (3 * 3marks)   [9]

Q.4. long sum questions (3 out of 5) (3 * 5marks)   [15]

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BCA104 – FINANCIAL ACCOUNTING & MANAGEMENT - I

ACCOUNTING: PRINCIPLES, CONCEPT AND CONVENTIONS (TESTING THROUGH OBJECTIVE QUESTIONS ONLY)
Double entry system of Accounting : types of Accounts; Journalising : Introduction of Basic Books of Accounts of sole proprietary concern (i.e. subsidiary books excluding bank book but including three columnar cash book, ledgers. Closing of books of accounts and preparation of trial balance. **(30%)**

Accounting Cycle (the full cycle upto trial balance should be covered and explained with illustrations covering around 10 sample transaction, using vouchers. Preparing Account from vouchers. **(20%)**

FINAL ACCOUNTS **(40%)**
Preparation of Trading Account, Profit and Loss Account and Balance Sheet of a sole proprietary concern and partnership firm, with simple adjustments. Closing entries should be explained and clarified.

Balance sheet of a limited company (Only Vertical formats) (The formats and its importance should be explained to the students) (In the examples/problems, the detailed presentation of Gross/Net block Assets is not expected.)

FINANCIAL MANAGEMENT **(5%)**
Meaning and Role

COMPUTERIZED ACCOUNTING **(5%)**
Basic accounting transactions such as creating ledgers, ledger posting, etc. using accounting software (Tally, Ex, Microsoft Financial)

Reference Books:
- Principles and Practice of Accountancy,R.L.Gupta-V.K.Gupta, S. chand & Sons
- Cost Accountancy(Theory,Problems and Solutions),P.V.Rathuam & D. Hanumantha Raju, Himalaya Publishing House
- Principles and Practice of Accountancy, Tulsian
- Financial Accounting, Inamdar S.M.
- Element of Book-Keeping and Accountancy for Std. XIth, XIIth, Guj. State Text Book Board.

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PATTERN OF QUESTION PAPER

BCA104 – FINANCIAL ACCOUNTING & MANAGEMENT - I

* There are two sections.
* Section A carries 20 marks and section B carries 40 marks

Total Marks: 60

Section A (20 – Marks)

Multiple choice questions (Objective) based on entire syllabus

Section B (40 – Marks)

Q.1. Answer two short questions. (2 * 5marks)   [10]
                                        OR
Q.1. Answer one question which could be long. (1 * 10marks)

Q.2. – do –   [10]

Q.3. – do –   [10]

Q.4. – do –   [10]

BCA105 – INTRODUCTION TO INTERNET AND WEB PROGRAMMING

INTERNET CONCEPTS **(60%)**

Introduction to Internet: (35%)

Network: its types and topologies, About Internet, Internet connections: Dial Up connection, direct connection and broadband connection, Internet Address, URL, ISP, Intranet, Extranet, VPN.

Applications of Internet: (25%)

WWW, Search Engines, News-group, E-mail and its Protocols, Web portals, Chat, Audio and Video conferencing, FTP, Remote login, Introduction to e- commerce, e-learning, e-governance, e-banking

STATIC WEB PAGE DEVELOPMENT **(40%)**

Introduction to HTML, HTML Document structure tags, HTML comments, text formatting, inserting special characters, anchor tag, adding images and sound, Lists: types of lists, Tables, Frames and floating frames, Developing forms.

Text Books:
- Web Enabled Commercial Applications development using… HTML, DHTML, JavaScript, PERL CGI., by Ivan Bayross, BPB Publication

Reference Books:
- The Internet Book, by Douglas E Comer, PHI Publications
- Internet an Introduction , CIStems School of computing, TMH publication
- The complete reference HTML, by Thomas A Powell, TMH publications.
- Mastering HTML 4.0 by Deborah S. Ray and Erich J. Ray, BPB Publication.

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PATTERN OF QUESTION PAPER

BCA105 – INTRODUCTION TO INTERNET AND WEB PROGRAMMING

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1 (A) Answer any five (two or three line answers, 5 out of 7) (5 * 2marks) [10]
Q.1 (B) Short Note (1* 5marks) [5]

Q.2. (A) Attempt any three (out of 5) (3 * 3marks) [9]
Q.2 (B) Descriptive question (1 out of 2) (1* 6marks) [6]

Q.3 (A) Create a webpage (any suitable output form, table, etc. can be given) (1* 6marks)[6]
Q.3 (B) Questions on tag and attributes (3 out of 4) (3 * 3marks) [9]

Q.4 (A) Descriptive question (1 out of 2) (1 * 6marks) [6]
Q.4 (B) Attempt any three (3 out of 4) (3* 3marks) [9]

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BCA106 – COMPUTER FUNDAMENTALS & PC SOFTWARE

COMPUTER FUNDAMENTALS (15%)
Definition and Block Diagram of Computers
Data Representation: Character representation – ASCII, EBCDIC, Number Systems and their conversions to each other

BASIC CONCEPT OF S/W AND H/W (10%)
Introduction to H/W
Input Devices:
Keyboard, Mouse, OCR, MICR, BCR, Scanner, Touch Screen, Electronic Pen, Digital Camera, Web Cam
Output Device:
VDU, Printer(dot Matrix, Ink – Jet, Laser), LCD Projector, Multi Functioning Device
Introduction to Software:
Types of S/W, Application Software, System Software, Utility Software

OPERATING SYSTEMS (20%)
Concept of operating system, examples of operating system
What is an operating system? Why is it required?
DOS
DOS features, comparison with GUI, file naming conventions, wildcard characters, purpose of commands: DIR, MD, RD, CD, COPY, TYPE, DEL, REN, PROMPT, DATE, TIME , CLS, VER, MOVE.
WINDOWS 2000/XP
Concept of Windows, General features of windows: Desktop, Icon, My computer, My Document, Network neighborhood, Recycle bin, Start menu, Taskbar, Windows explorer, Control panel, creating folder, finding files and folders, copying and moving files, deleting files, creating shortcuts, Scan disk, Defragmentation, Importance of DOS within Windows

COMPUTER VIRUSES (5%)
Introduction to Computer Virus, Types of Virus, Prevention and Cure.

WORD PROCESSING PACKAGE (15%)
Create, edit, save, print , navigating documents, different views, formatting, cut-copy-paste, find and replace, word wrap, alignment, tabs, inserting- tables-hyperlink-pictures-charts-AutoText-header-footer-footnote-   endnote- comments-bookmark, Autocorrect, spell checking, thesaurus, protecting a document, mail merge, macros.

PRESENTATION PACKAGE (15%)

Creating-editing-printing slides, different views, using text, drawings, tables, pictures, charts and other objects in slides, Custom and Preset animation, Slide transition effects, Running slide show, Custom shows, Rehearse timing, Pack and Go, Speaker notes, Pen

SPREADSHEET PACKAGES (20%)

Concept of workbook-worksheet-workspace, Cell, Range, Types of data, formatting, Conditional formatting, Fill series, Entering formula, Absolute-Relative-Mixed addressing, cut-copy-paste-paste special, Hyperlink, Functions: SUM, COUNT, MIN, MAX AVERAGE, TODAY, NOW, IF, SUMIF, COUNTIF, UPPER, LOWER, ROUND, VLOOKUP, HLOOKUP, DAYS360, Creating Charts, Protecting and hiding data, AutoFilter, Subtotal, What-if Analysis: Goal Seek-Scenario, import-export of data.

Text Books:
- Fundamentals of Computers, P.K. Sinha, BPB
- PC Software for Windows Made Simple, R.K. Taxali, TMH

Reference Books:
- Fundamentals of Information Technologies , S. Jaiswal, Galgotia
- Fundamentals of Computers , V. Rajaraman, PHI
- Learning Microsoft Office XP By Weixel, BPB Publications
- Office XP: The Complete Reference Julia Kelly , Stephen Nelson, TMH

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PATTERN OF QUESTION PAPER

BCA106 – COMPUTER FUNDAMENTALS & PC SOFTWARE

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1 (A) Answer any five (two or three line answers, 5 out of 7) (5 * 2marks)   [10]
Q.1 (B) Short Note (1* 5marks)   [5]

Q.2. (A) Attempt any three (out of 5) (3 * 3marks)   [9]
Q.2 (B) Descriptive question (1 out of 2) (1* 6marks)   [6]

Q.3 (A) Attempt any two (2 * 3.5marks)   [7]
Q.3 (B) Attempt any two (2 * 4marks)   [8]

Q.4. (A) Short notes (4 out of 6) (2 * 4marks)   [8]
Q.4 (B) Explain any two commands. (2 * 2marks)   [4]
Q.4 (C) Definitions. (3 * 1marks)   [3]

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BCA107L – PRACTICAL LAB

Practical will be based on BCA101, BCA102, BCA105 and BCA106.

PATTERN OF PRACTICAL EXAMINATION

BCA107L – PRACTICAL LAB

Total Marks: 100

Q.1 Practical Question(s) From BCA102   [25]
Q.2 Practical Question(s) From BCA105   [25]
Q.3 Practical Question(s) From BCA106   [25]

Viva-Voce   [25]

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BCA201 – COMPUTER ORGANIZATION

MODERN COMPUTER ORGANIZATION **(20%)**

Introduction , Man and computing, User and computer, Computer Organization, Main Memory, CPU operation , Interrupt Concept, Bus Concept, Computer Types, Booting sequence.

CPU ARCHITECTURE AND INSTRUCTION SET **(30%)**

Introduction, CISC vs. RISC,
Instruction set Design (excluding flowcharts), Addressing Modes, Data representation, Binary data

PROCESSOR DESIGN AND DATA PATH **(10%)**

Processor design Process, Main Memory Interface

MAIN MEMORY DESIGN **(20%)**

Introduction, Memory Parameters, Classification of Memory, Main Memory Allocation

MEMORY MANAGEMENT TECHNIQUES **(20%)**

Introduction, Memory hierarchy, Main memory drawbacks,
Instruction prefetch (excluding sum)
Cache Memory:- Principle of cache, Hit and Miss, Direct mapping, Associative Mapping, Set-Associative mapping, Cache replacement, Cache write policy, Multi-level cache, Associative Memory.

Text Books:
- Computer Architecture And Organization, Author: B Govindarajalu

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PATTERN OF QUESTION PAPER

BCA201 – COMPUTER ORGANIZATION

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1 (A) Answer any five (two or three line answers, 5 out of 7) (5 * 2marks)   [10]
Q.1 (B) Short Note (1* 5marks)   [5]

Q.2. (A) Attempt any three (3 out of 5) (3 * 3marks)   [9]
Q.2 (B) Descriptive question (1 out of 2) (1* 6marks)   [6]

Q.3. Long questions (3 out of 5) (3 *5marks)   [15]

Q.4 (A) Attempt any two (2 out of 3) (2* 3.5marks)   [7]
Q.4 (B) Attempt any two (2 out of 3) (2 * 4marks)   [8]

BCA202 – ADVANCED PROGRAMMING WITH C

ERROR FINDING **(5%)**
Concept of debugging, Finding Errors in the programs, error codes and their meanings, Various debugging options in Turbo C compiler.

PROGRAMMING IN C LANGUAGE **(70%)**
Structures and Unions, Storage Classes
Concept of bit-fields
Pointers
File handling in C
Concept of dynamic memory allocation and deallocation
C preprocessors- Macro substitution directive and file inclusion directive.

C ON LINUX **(15%)**
Introduction and features of GNU C compiler. ANSI standards support in gcc. Feature comparison with Turbo C compiler. Advantages of using C with Linux, Compilation of C program using gcc. gcc command line options.

Implementation of basic c programs on GNU C compiler.

GRAPHICS IN C **(10%)**
Introduction (gm, gd and bgi), library functions – initgraph(), closegraph(), cleardevice(), getmaxx(), getmaxy(), getx(), gety(), setcolor(), getcolor(), setbkcolor(), getckcolor(), setfillstyle(), outtextxy(), line(), lineto(), linerel(), circle(), ellipse(), arc(), rectangle(), drawpoly(), fillpoly()

Text Books:
* Programming in ANSI C, Balagurusamy, TMH

Reference Books:
* Bryan Pfaffenberger, "Linux Command–Instant Reference" – BPB Publications (ISBN 81 – 7656-319-6).
* "Linux Complete"– BPB Publications
* Gnu C Compiler Manual Available At http://gcc.gnu.org/onlinedocs/gcc-4.0.0/gcc/

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PATTERN OF QUESTION PAPER

BCA202 – ADVANCED PROGRAMMING WITH C

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1 (A) Answer any five (two or three line answers, 5 out of 7) (5 * 2marks)   [10]
Q.1 (B) Short Note (1out of 2) (1* 5marks)   [5]

Q.2. (A) Attempt any three (3 out of 5) (3 * 3marks)   [9]
Q.2 (B) Descriptive question (1 out of 2) (1* 6marks)   [6]

Q.3 (A) Short Notes (3 * 4marks)   [12]
Q.3 (B) Questions on finding errors or output of in given code (2 out of 3) (2 * 1.5marks) [3]

Q.4 Questions on writing C programs (2 out of 4) (2 * 7.5marks)   [15]

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BCA203 – ADVANCED MATHEMATICS – II

UNIT 1: LIMIT AND CONTINUITY **(20%)**
LIMIT: Definition of Limit, Some Standard Limits (without proof).
CONTINUITY: Definition of Continuity, Condition for the function to be Continuous, Discontinuity.

UNIT 2: DIFFERNTIATION AND ITS APPLICATIONS **(30%)**
DIFFERNTIATION: Definition of Derivative, Rules of Differentiation (Without Proof), Derivatives of Algebraic, Trigonometric, Parametric, Logarithmic, Explicit / Implicit Functions, Second order Derivative with examples.
APPLICATIONS OF DERIVATIVE: Maxima/Minima of Functions, Business Applications.

UNIT 3: INTEGRATION AND ITS APPLICATIONS **(30%)**
INTEGRATION: Definition of Integration, Standard Formulas, Method of Substitution, Integration by parts, Partial fraction, Reduction Formulas (Without Proof) (Sinnx dx, Cosnx dx)
APPLICATIONS OF INTEGRATION: Area Bounded by the Curve (Excluding volume). Business Application examples

UNIT 4: DIFFERENTIAL EQUATIONS **(20%)**
Introduction to Differential equation, Order / Degree of Differential equations, Solution of Differential equations, Variable Separable Method, Exact Differential Equation method, General and particular solution.

Text Books:
- Business Mathematics by Dr. D. C. Sancheti & V.K.Kapoor. S.CHAND & SONS PUBLICATIONS

Reference Books:
- Advanced Mathematics by Dr. K.R. Kachot
- Shantinarayan (for Differentiation and Integration)

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PATTERN OF QUESTION PAPER

BCA203 – ADVANCED MATHEMATICS – II

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1. (A) Define the following terms. (6 out of 6) (6 * 1marks)   [6]
Q.1. (B) Any three sums (3 out of 5) (3 * 3marks)   [9]

Q.2. (A) long sum question   [5]
<div align="center">OR</div>
Q.2. (A) long sum question
Q.2. (B) Any four questions (4 out of 5) (4 * 2.5marks)   [10]

Q.3. (A) two or three lines question (3 out of 5) (3 * 2marks)   [6]
Q.3. (B) Attempt any three questions (3 out of 5) (3 * 3marks)   [9]

Q.4. long sum questions (3 out of 5) (3 * 5marks)   [15]

BCA204 – FINANCIAL ACCOUNTING & MANAGEMENT - II

RATIO ANALYSIS **(20%)**

Meaning: Advantages; Limitations, Types of ratios i.e. classification of ratios from different angles. Computation of the following ratios is expected from the direct data provided.
(i) Gross Profit Ratio; Net Profit Ratio ; Operating Ratio
(ii) Current Ratio ; Liquidity Ratio (also known in general as Acid Test Ratio)
(iii) Stock Turnover Ratio; Debtors turnover (including calculation of average no of days credit is allowed) ; Creditors Turnover (including calculation of average number of days credit is available from suppliers)
(iv) Debt-Equity Ratio (Total Debt/Equity and Long Term Debt/Equity Ratios)

CASH BUDGET **(10%)**

Preparation of simple cash budget.

COSTING **(20%)**

Nature ; importance and basic principles of costing ; method of costing (only a brief theoretical explanation is expected)
Elements of Costs : i.e. materials,labour,overheads(including explanation of Direct and Indirect costs; Fixed, Variable and Semi-fixed/Semi-variable costs')

UNIT COSTING **(20%)**

Preparation of simple Cost Sheet/Statement, Covering various element of cost and also indicating Prime cost; Factory or Production or Manufacturing cost; Cost of Production ; Total Cost ; Profit ; Sales.

MARGINAL COSTING **(20%)**

Nature , scope, and importance – Break-even Analysis : Its uses and limitations- simple sums on computation of BEP in terms of units and sales (even when data regarding unit is not provided) and sales required to earn an expected amount of profit (in terms of unit and sales even without unit data being provided)- explaining Break-even Chart (in theory only).

COMPUTERIZED ACCOUNTING **(10%)**

Overview of Financial Accounting software (e.g. Tally, Ex, Microsoft Financial) Minimum 5 hours hands on training on the package software is compulsory. (out of 20 marks, 5 marks will be allotted to this chapter in term work)

Reference Books:
- Principles and Practice of Accountancy, R.L.Gupta-V.K.Gupta, S. chand & Sons
- Cost Accountancy(Theory,Problems and Solutions),P.V.Rathuam & D. Hanumantha Raju, Himalaya Publishing House

- Principles and Practice of Accountancy, Tulsian
- Financial Accounting, Inamdar S.M.
- Element of Book-Keeping and Accountancy for Std. XIth, XIIth, Guj. State Text Book Board.

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PATTERN OF QUESTION PAPER

BCA204 – FINANCIAL ACCOUNTING & MANAGEMENT - II

* There are two sections.
* Section A carries 20 marks and section B carries 40 marks

Total Marks: 60

Section A (20 – Marks)

Multiple choice questions (Objective) based on entire syllabus

Section B (40 – Marks)

Q.1. Answer two short questions. (2 * 5marks)   [10]
                          OR
Q.1. Answer one question which could be long. (1 * 10marks)

Q.2. – do –   [10]

Q.3. – do –   [10]

Q.4. – do –   [10]

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BCA205 – WEB DESIGNING AND ADVANCED WEB PROGRAMMING

DYNAMIC WEB PAGE DEVELOPMENT

CASCADING STYLE SHEETS (15%)

Introduction to CSS, Types of style sheets, Implementation of font, color, text and border attributes in CSS, Using external style sheets, <div> and <span> tags

JAVASCRIPT (30%)

Introduction to JavaScript, Using operators, control statements, user defined functions, working with built-in objects: window object, document object, string object, array object and date object. Handling events in JavaScript

MACROMEDIA DREAMWEAVER (30%)

A brief Introduction to Dreamweaver, Planning and creation of your Site, Site Management, Designing Page Layout, Browsing Menus Inserting and Formatting Text, Inserting Images, Inserting Tables Inserting Frames, Working with Forms

MACROMEDIA FLASH (25%)

A brief introduction to flash, flash movie development, Setting of Document property, Creating share with oval tool, Adding text to button, Converting a share into symbol, Editing buttons symbols, Adding key frame, Verifying changes with Test Movie, Adding layers to a movie, Viewing layers in the Timeline, Working with layers, Create graphic symbols, Insert instance, Motion Tweezing, Motion Tween settings

Text Books:
- Web Enabled Commercial Applications development using… HTML, DHTML, JavaScript, PERL CGI., by Ivan Bayross, BPB Publication
- Macromedia Dreamweaver by Macromedia Inc.
- Macromedia Flash 5 by Macromedia Inc.
- Online Help

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PATTERN OF QUESTION PAPER

BCA205 – WEB DESIGNING AND ADVANCED WEB PROGRAMMING

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1 (A) Answer any five (two or three line answers, 5 out of 7) (5 * 2marks)   [10]
Q.1 (B) Short Note (1* 5marks)   [5]

Q.2. (A) Attempt any three (out of 5) (3 * 3marks)   [9]
Q.2 (B) Descriptive question (1 out of 2) (1* 6marks)   [6]

Q.3 (A) Create webpage (any suitable output using tables, css, etc. can be given) (1* 6marks)
[6]
Q.3 (B) Javascript Programs (3 out of 4) (3 * 3marks)   [9]

Q.4 (A) Descriptive question (1 out of 2) (1 * 6marks)   [6]
Q.4 (B) Attempt any three (3 out of 4) (3* 3marks)   [9]

BCA206 – DATABASE MANAGEMENT SYSTEM CONCEPTS

FILE SYSTEM AND DATABASES **(20%)**
Introducing the database, the historical roots of the database, a file system critique, database systems, database models

THE RELATIONAL DATABASE MODEL **(40%)**
Logical view of data, keys, integrity rules, relational database operators, the data dictionary and system catalog, relationship within the relational database, data redundancy, index

E-R MODELING **(20%)**
Basic modeling concepts, data models : degree of data abstraction, the E-R model(with example)

NORMALIZATION OF DATABASE TABLES **(20%)**
Database tables and normalization, normalization and database design (with example), higher level normal forms, de-normalization

Practical Work:
- Designing E-R models of given system
- Normalization of given relational schemas

Text Books:
- Database Systems - Design, Implementation and Management 4th Edition : Rob & Coronel (Course Technology-Thomson Learnin g)

Reference Books:
- Database Management System : Vipin Desai (Galgotia Pub.)
- Modern Database Management 7th Edition : Hoffer, Prescott and McFadden, Pearson Education.
- Database Management System : Korth (Tata McGraw Hill)

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PATTERN OF QUESTION PAPER

BCA206 – DATABASE MANAGEMENT SYSTEM CONCEPTS

* There are four questions.
* Each question carries equal marks (i.e. 15)

Total Marks: 60

Q.1 (A) Answer any five (two or three line answers, 5 out of 7) (5 * 2marks)   [10]
Q.1 (B) Short Note (1* 5marks)   [5]

Q.2. (A) Attempt any three (out of 5) (3 * 3marks)   [9]
Q.2 (B) ER Diagram (1* 6marks)   [6]

Q.3 (A) Answer any two (2 out of 3) (2 * 4marks)   [8]
Q.3 (B) Conversion of given database schema in 1NF, 2NF and 3NF.   [7]

Q.4 (A) Descriptive question (1 out of 2) (1 * 6marks)   [6]
Q.4 (B) Attempt any three (3 out of 5) (3* 3marks)   [9]

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BCA207L – PRACTICAL LAB

Practical will be based on BCA202, BCA205 and BCA206.

PATTERN OF PRACTICAL EXAMINATION

BCA207L – PRACTICAL LAB

Total Marks: 100

Q.1 Practical Question From BCA202   [25]
Q.2 Practical Question From BCA205   [25]
Q.3 Practical Question From BCA206   [25]

Viva-Voce   [25]