



UNIVERSITY OF JAMMU
NOTIFICATION
(11/Aug/ ADP/29)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Academic Council, has been pleased to authorize adoption of the revised Syllabi and Courses of Study in the subject of Computer Applications for B.Sc. Part I and for BCA Part-II of Three Year Degree (General) Course, for the examinations to be held in the years alongwith %age of change as under:-

<u>Class</u>	<u>Part</u>	<u>For the examinations to be held In the year</u>	<u>%age of change</u>
B.Sc.	Part-I	2012, 2013, 2014	Paper A&B 50%
BCA	Part-II	2012, 2013, 2014	202(A) -100%
			202(B) -100%
			203(A) -100%
			203(B) -100%
			204(A) -100%
			204(B) -100%

The alternative question papers are required to be set as per the regulations given below:-

- i). If the change in the Syllabi and Courses of Study is less than 25%, no alternative question papers be set.
- ii). If the change is 25% and above but below 50%, alternative question papers be set for one year.

- iii). If the change is 50% and above or whole scheme is changed, alternative question papers be set for two years.

Sell-
REGISTRAR

F.Acd./33/11/ 5463-5512

Dated: 05-09-2011

Copy for information and necessary action to:

1. Special Secretary to Vice-Chancellor;
2. P.S. to Dean Academic Affairs
3. Sr.P.A. to Registrar/Controller of Examinations;
4. Dean, Faculty of Mathematical Sciences/Director, DDE;
5. Convener, Board of Studies in Computer Applications;
6. Members of the Board of Studies concerned;
7. Principals of all the affiliated Colleges;
8. C.A. to Controller of Examinations;
9. I/C Deputy Registrar (Eval. NP/Exams. U.G/Pub.)
10. A.R. (Inf./Pub./Admission/DDE/ Conf/PRI);
11. S.O (Confidential);
12. Content Manager, University Website

fnabid 29/8
Asst. Registrar(Acadc.)

f
29/8/11

**Syllabus of B.Sc. Part – I, Computer Applications (Vocational Course)
for the examination to be held in the years 2012, 2013 and 2014**

Max Marks – 150

Break up

1. There shall be two theory papers (A and B) each of 28 marks and of 3 hours duration.

Total Marks = 56

2. One practical examination of 40 marks (to be conducted by one external and internal examiner) to be held in one session of 4 hours duration.

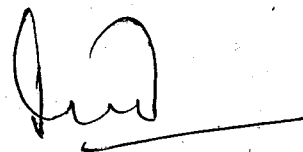
Total Marks = 40

3. Theory paper shall carry internal assessment of 14 marks. Out of 14 marks, 4 marks are reserved for attendance. The remaining 10 marks shall be awarded on the basis of two class tests (one from each paper) of 5 marks each.

Total Marks = 14

4. Practical shall carry internal assessment of 40 marks. Out of 40 marks, 8 shall be reserved for the attendance and 8 marks for day – to – day evaluation. The remaining 24 marks are awarded on the basis of three practical tests of 8 marks each.

Total Marks = 40



Syllabus of B.Sc. Part – I, Computer Applications (Vocational Course) for the examination to be held in the years 2012, 2013 and 2014

Paper A : Computer Fundamentals and IT tools.

Total Mark :28

Examination Duration :3 Hours

Unit – I

Computer and its characteristics, application of computers, digital and analog computer, Generation of computers, Storage devices: primary storage devices (RAM,ROM,PROM,EPRM,EEPROM) , secondary storage devices(Floppy disk, Hard disk, optical disk, magnetic tapes), Input and output devices (keyboard, mouse, light pen, joystick, scanner, monitor, printers,etc.)

Unit - II

Software and its types (System Software, Application Software; Firmware Softwares) Computer Languages and its types (Machine Language, Assembly Language, High Level Language: advantages and disadvantages of computer languages),Translators :Compiler, Linker, Interpreter .

Number system and its types, conversion from one base to another and vice versa, arithmetic operations, r's, (r - 1)'s complement methods.

Unit – III

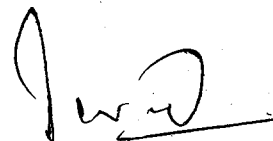
Operating system and its functions, types of operating system(Single user, multi-user, multitasking, time sharing , distributed). Fundamental of DOS, Understanding DOS prompt and shell screen, internal and external commands.Windows fundamentals: Anatomy of windows, desktop elements, managing files and folders, installing softwares

Unit – IV

Word Processor and its features, Editing of Text, Find and Replace, Bullets and Numbering, Spell Checker, Grammar Checker, Auto Correct, Auto Complete, Auto Text, Header and footer, tables, mail merge, border and shading, page setup, printing.

Spread sheet and its features, Entering Information in Worksheet, Editing Cell Entry, Moving and Copying Data, deleting or Inserting Cells, Rows and Columns, Custom Numeric Formats, Using Formulas and functions, Creating charts.

Presentation Softwares and its uses, steps for creating PowerPoint Presentation, PowerPoint Views, Assigning Slide Transitions, Using Preset Animations, Hiding Slides, Slide Show, Controlling the Slide Show with a Keyboard, Setting Slide Show Timings



Reference Books

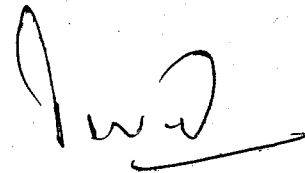
1. "Computer Science, an Overview", J. Brookshear, Addison Wesley, 2000.
 2. "Fundamentals of Information Technology", Alex Leon, Mathews Leon, LeonTechWorld.
 3. "Comdex Information Technology, Course Kit", Vikas Gupta
 4. "Computers Today", Suresh K Basandra, Galgotia Publications.
 - 5 "Computer fundamentals" P.K. Sinha, BPB publications.
 - 6 "IT Tools and Applications" Sanjay saxena, Prabhpreet chopra, Vikas Publishing house Pvt. Ltd.
 - 7"Introduction to Computers " Peter Norton, Tata Mcgraw Hill.
- 2007 Microsoft® Office System Step by Step, Joyce Cox, Joan Preppernau, Steve Lambert, and Curtis Frye, Microsoft Press.

Note for paper setter :

There shall two sections in question paper : **Section A** and **Section B**.

The section A contains one question of 8 marks. This question contains 8 parts, 2 from each unit . Each part carries 1 mark. This section is compulsory.

The section B contains 8 questions, two from each unit. Each question is of 5 marks. The candidate is required to attempt four questions in this section, selecting one question from each unit.



**Syllabus of B.Sc. Part – I, Computer Applications (Vocational Course)
for the examination to be held in the years 2012, 2013 and 2014**

Paper B: Programming Concepts and C language

Total Mark : 28

Examination Duration : 3Hours

Unit - I

Algorithm, Representation of Algorithm, Flowcharts, Flowchart Symbols, Flowchart Rules, Advantages and Limitations of Flowcharts, Pseudo Code

Character Set, C Tokens, Keywords and Identifiers, Constants, Variables, Data Types, Format of c program, Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Operator Precedence and Associativity

Unit - II

Formatted Input, Formatted Output, escape sequences, Simple if Statement, if..... else Statement, Nesting of if....else Statements, , Switch Statement, conditional Operator, goto Statement, loops, break and continue statement

Unit – III

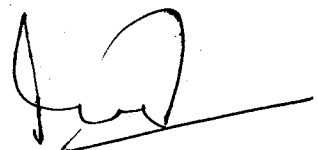
Qualifiers, Storage classes, Pointers definition, Declaring Pointer Variables, using pointer variable, **Arrays: One**, Two and Multi Dimension Arrays, Initialization of Arrays, Declaring and Initializing String Variables, String Handling Functions

Unit - IV

Preprocessor directives, Function Definition, Function Calls (call by value & call by address method) Returning Value, Types of Functions , Recursion, Passing Arrays to Functions, Macros, Defining Structure, Declaring and Accessing Structure Variables, Array of Structures, Unions, File definition, Opening a File, Closing a File, Input/ Output Operations on Files.

Reference Books:

1. E. Balguruswamy, "Programming in ANSI C", 4th edition, 2007, McGraw-Hill Publication, New Delhi.
2. B.W. Kernighan and D.M. Ritchie, The C Programming Language, PHI.



3. B.S. Gottfried, Schaum's Outline of Theory and Problems of Programming with C, McGraw-Hill.
4. H. Schildt, C Made Easy, Osborne McGraw-Hill.
5. Yashwant Kanetkar, "Let us C" Seventh Edition, BPB publication, 2007.
6. Cooper H. & Mullish H. : The Sprit of C, Jaico Publication House, New Delhi.

Note for paper setter :

There shall two sections in question paper : **Section A** and **Section B**.

The section A contains one question of 8 marks. This question contains 8 parts, 2 from each unit . Each part carries 1 mark. This section is compulsory.

The section B contains 8 questions, two from each unit. Each question is of 5 marks. The candidate is required to attempt four questions in this section, selecting one question from each unit.



Syllabus of BCA. 2ND Year Syllabus, Computer Applications for the examination to be held in the years 2012, 2013 and 2014

BCA 2nd Year Syllabus

BCA 201

Paper code BCA 201(A) Title: Gen English A

Paper code BCA 201(B) Title: Gen English B

BCA 202

Paper code BCA 202(A) Title: Fundamentals of Discrete Mathematics

Paper code BCA 202(B) Title: Data Structure using C/C++

BCA 203

Paper code BCA 203(A) Title: Programming paradigm and C++

Paper code BCA 203(B) Title: Circuits and Memory Organization

BCA 204

Paper code BCA 204(A) Title: Database Management System

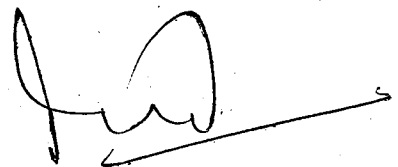
Paper code BCA 204(B) Title: Operating System & UNIX

Practical Exams 203

Students must implement at least 5-10 problems from each unit of paper code 203 (A). Minimum 30 problems in total are to be implemented covering all the topics of C++ Language.

Practical Exams 204

Internal and External Practical exam of this course will be based on the BCA 204 (A) & BCA204 (B). SQL Commands including nested queries, functions, setting relation among multiple tables, views, types of views, etc. are to be covered from 204(A). From 204(B) UNIX commands covered in the Unit IV and Unit V are to be executed on any of the free wares/simulators/ UNIX OS. Minimum 20 assignments in total are to be covered from paper A and 30 different Commands are to be executed from paper B.



UNIVERSITY OF JAMMU

Syllabi of BCA. 2ND Year Syllabus, Computer Applications for the examination to be held in the years 2012, 2013 and 2014

Paper Code: BCA 202 (A)

Paper Title: Fundamentals of Discrete Mathematics

Total Marks : 60

Examination Duration: 3 Hours

UNIT-I

Statements and Notation, Connectives, Negation, Conjunction, Disjunction, Statement formulas and Truth tables. Conditional and Biconditional, Tautologies, Contradictions, WFF, Equivalence of formulae, Duality law, Two state Devices and Statement Logic.

Normal forms, Disjunctive Normal Forms, Conjunctive Normal forms

UNIT-II

Sets and Elements, Equality of Sets, Subsets, Set operations, Venn Diagrams & Set operations, Fundamentals products, Algebra of Sets, Duality, Finite Sets, Counting Principles, Classes of Sets, Induction, Symmetric Difference.

UNIT-III

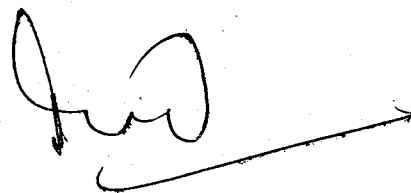
Relations, Representation of Relations, Compositions of Relations, Types of Relations, Equivalence Relations, Partial Ordering Relation, Functions: Function, Mapping, Real valued, Composition, One to One, Onto, Invertible, and the Cardinality of a set.

UNIT-IV

Basic Concepts: Graphs, Incidence and degree, Isomorphism, Sub graphs and Union of graphs, connectedness, Walks, Paths and Circuits, Euler's Formula, Eulerian graph, Hamiltonian graph, Chromatic Graphs, Planer Graphs, Travelling salesman problem, Complete, Regular and Bipartite graphs, Directed Graphs

UNIT-V

Basic Concepts: Trees and their properties, Binary Tree, Traversing Binary Tree, Complete and Extended Binary Tree, Spanning Tree, Directed Tree, Depth first search algorithm



Books

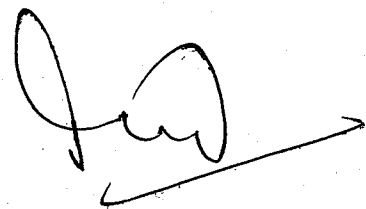
1. J.P Tremblay, R. Manohar, Discrete Mathematical Structures with Application of Computer Science, Tata McGraw Hill.
2. Seymour Lipschutz, Discrete Mathematics, McGraw Hill.
3. Joe I. Mott, Abraham Kandel, Theodore P. Baker, Discrete Mathematics for Computer Scientists and Mathematicians, PHI.
4. Narsingh Deo, Graph Theory, PHI
5. V.K. Balakrishnan, Graph Theory, Tata McGraw Hill.

Paper code BCA 202 (A)

There shall be two written papers of 75 marks and of three hours duration each. 20% of the marks shall be reserved for the internal assessment. Each paper will be set for 60 marks. In case of regular students Internal assessment received from the colleges will be added to the marks obtained by them in University Examination. In case of private candidates marks obtained by them in the university examination shall be increased proportionally in accordance with the statues per regulation.

Note for examiner:

The question paper will contain two questions from each unit carrying 12 marks each. (Total 10 questions)
The candidates will be required to answer one question from each unit. Total question to be attempted will be 5 i.e., there will be an internal choice within each unit.

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UNIVERSITY OF JAMMU

Syllabi of BCA. 2ND Year Syllabus, Computer Applications for the examination to be held in the years 2012, 2013 and 2014

Paper code BCA 202 (B)

Title: Data Structure using C/C++

Total Marks : 60

Examination Duration: 3 Hours

UNIT-I

Introduction to Data Structure, operations, Algorithms, Pseudo code, Characteristics of an algorithm., Big O notation, Arrays, Structures, Self Referential Structures, Pointers, manipulating array and structure using pointers, function, recursion, passing array & structure to function.

UNIT-II

Insert, Delete and Update elements of an array, Stacks and its operations, evaluating post fix expressions, converting infix expression to prefix, postfix and vice versa, Queues, Circular Queue, Priority Queue.

UNIT-III

Dynamic Memory allocation, Garbage collection, memory leakage, linked list, doubly linked list, circular list, inserting, deleting and traversing a linked list.

UNIT-IV

Definition of Tress, tree traversal (in order, preorder, post order), Introduction to graphs, depth for search, Breadth for search, finding Shortest path using Dijkstra's algorithm. Introduction to binary tree, binary search tree, completely binary search tree

UNIT-V

Linear search, Binary search, Bubble sort, Insertion sort, selection sort, quick sort, comparison among these sorting techniques.

Books:

1. Horowitz, E., and Sahni, S.: Fundamentals of data Structures Computer Science Press, 1978.
2. Aho, A.V., Hopcraft, and Ullman, J.E.; Data Structures and Algorithms, Addison Weseley, 1982.
3. Tanhenbaum, A.M., and Augenstein, M.J.: Data Structures with C, Prentice-Hall, and International, 1985.
4. Theory and Problems of Data Structures by Seymour Lipschutz St. Sehaum's Outline Series in Computers Publisher: Tata McGraw-Hill
5. R.B. Patel, Data Structure using C / C++

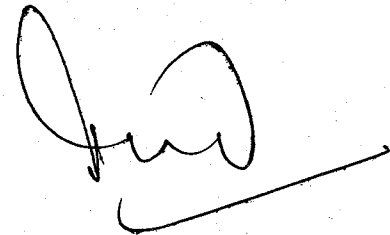


Paper code BCA 202 (B)

There shall be two written papers of 75 marks and of three hours duration each. 20% of the marks shall be reserved for the internal assessment. Each paper will be set for 60 marks. In case of regular students Internal assessment received from the colleges will be added to the marks obtained by them in University Examination. In case of private candidates marks obtained by them in the university examination shall be increased proportionally in accordance with the statues per regulation.

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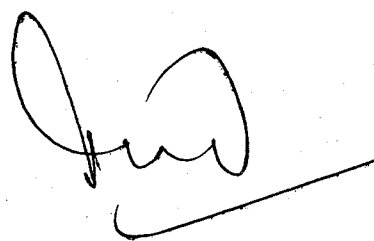
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Paper code BCA 202 (B)

There shall be two written papers of 75 marks and of three hours duration each. 20% of the marks shall be reserved for the internal assessment. Each paper will be set for 60 marks. In case of regular students Internal assessment received from the colleges will be added to the marks obtained by them in University Examination. In case of private candidates marks obtained by them in the university examination shall be increased proportionally in accordance with the statues per regulation.

Note for examiner:

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UNIVERSITY OF JAMMU

Syllabi of BCA. 2ND Year Syllabus, Computer Applications for the examination to be held in the years 2012, 2013 and 2014

Paper code: BCA 203(A)

Title: Programming Paradigms and C++

Total Marks : 40

Examination Duration: 3 Hours

Unit I

Paradigms of Programming Languages, Procedural programming, Need of OOP, Evolution of OO Methodology, Basic Concepts of OO Approach, Comparison of Object Oriented and Procedure Oriented Approaches, Benefits of OOPs, Introduction to Common OO Language, Applications of OOPs, Objects, classes, inheritance, reusability, creating new data types, polymorphism and overloading.

Unit II

Basic program construction, Data types, reference variables, Input output statements, comments, escape sequence, manipulators, type conversion, arithmetic logical and relational operators, For loop, while loop & do loop and if, if...else, switch & other control statements. Functions: passing arguments to functions, returning values from functions, reference arguments, overloaded functions, inline functions, default arguments, variables and storage class and returning by reference, arrays and Strings.

Unit III

Class and visibility modes, C++ objects, object as function argument, constructors and its types, overloaded constructors, copy constructors, passing and returning Objects from functions, Structures and classes, static class members

Unit IV

Overloading unary and binary operator, data conversions, Inheritance: derived class and base class, derived class constructors, overloading member functions, class hierarchies, public and private inheritance, level of inheritance, multiple inheritance, new and delete operator, function overriding

Unit V

Static functions, this pointer., templates, Streams and files, stream classes, stream errors, disk file I/O with streams, file pointers and their manipulations, file handling in text and binary modes, error handling in file I/O.



Suggested Readings:

- 1) Herbert Schildt, C++ The Complete Reference, McGraw Hill.
- 2) Robert Lafore, Object Oriented Programming In C++, Galgotia publ.
- 3) H.M. Deitel and P.J. Deitel, C++: How to Program, Prentice Hall.
- 4) Bjarne Stroustrup, The C++ Programming Language, (3rd edition), Addison Wesley.
- 5) D. Ravichandran, "Programming with C++", Tata Mcgraw Hill.
- 6) E. Balagursamy, Object Oriented Programming using C ++, Tata Mcgraw Hill
- 7) Scott Meyers, Effective C++: 50 Specific Ways to Improve Your Programs and Designs, Addison Wesley.
- 8) S. Halladay and M. Wiebel, "Object Oriented Software Engg", BPB Publ.

Paper Code BCA 203 (A)

The proposed scheme includes the following

- 1) Two theory paper A & B, each carrying one examination of 40 marks and of three hours duration.

(Total 80 marks)

- 2) One practical examination of 25 marks to be conducted by one external and one internal Examiner, to be held in one day with the duration of four hours.

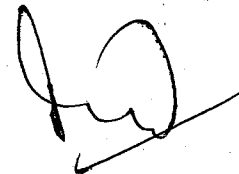
- 3) Theory paper shall carry an internal assessment of 10 marks for each paper.

(Total 20 marks)

- 4) Practical shall carry an internal assessment of 25 marks. Internal assessment shall be awarded as per rules of University on the subject

Note for examiner:

The question paper will contain two questions from each unit carrying 8 marks each. (Total 10 questions)
The candidates will be required to answer one question from each unit. Total question to be attempted will be 5 i.e., there will be an internal choice within each unit.



UNIVERSITY OF JAMMU

Syllabi of BCA. 2ND Year Syllabus, Computer Applications for the examination to be held in the years 2012, 2013 and 2014

Paper Code: 203 (B)

Paper Title: Circuits and Memory Organization

Total Marks : 40

Examination Duration: 3 Hours

UNIT - I

Data Representation

Overview of computers, Integer & floating point representation using IEEE FORMAT, Rules of Floating point Arithmetic, parity, Error detection and correction methods using Hamming technique, ASCII code representation, Number systems & their inter - conversion rules, Rules of addition/subtraction for r 's, $(r - 1)$'s complements, BCD, excess - 3 respectively and their circuits.

UNIT - II

Logic Gates & Boolean Algebra

Logic gates, And, OR, NOT, NAND, XOR, NOR, XNOR Gates & their design. Boolean Algebra: Binary Arithmetic, Boolean Expressions, Laws of Boolean Algebra, De-Morgan laws, K - map, simplification of Boolean Expressions using SOP, POS, K - map techniques.

UNIT - III

Combinational and sequential circuits

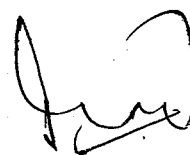
Combinational circuits: Half & Full adders & subtractors, Encoder, decoder, Multiplexer, De - Multiplexer

Sequential circuits: Flip-flop, its types, registers, its types, & bi - directional register, counters: ripple & synchronous.

UNIT - IV

Memory organization and Input/Output devices

Memory organization: Memory Hierarchy, Memory, its types (RAM/ROM), characteristics of Memory, memory address map to CPU, cache memory. I/O devices FD/HD disks, VDU; I/O organization: Modes of I/O transfer like DMA, programmed control, interrupts technique. Interrupt & instruction: Interrupt, its types & its life cycle, instruction life cycle.



UNIT - V

Memory & Register Organization

Memory: Basic memory cell, 2D/3D Static RAM, Static and Dynamic Memory, Types of ROM, associative memory and interleaved memory, Random access, Sequential access, Direct access, virtual memory.

Register transfer Language and Architecture: Register transfer language, micro-operation, I/O processor, CPU bus architecture.

SUGGESTED READINGS:

1. Gear, C.W.: Computer Organization and Programming McGraw – Hill, 1975.
2. Tannenbaum, A.S.: Structured Computer Organization Prentice - Hall of India.
3. Mano, M.M.: Computer System Architecture, Prentice – Hall, of India, 1983.
4. Langholz, G., Grancioni, J. and Kandel, A.: Elements of Computer Organization, Prentice - Hall Int., 1988.
5. Assembler Manual for the chosen machine.
6. Hayes: Computer Architecture and Organization, McGraw – Hill International Edition.
7. Sloan, M.E.: Computer Hardware and Organization, 2nd Edn, Galgotia publ., Pvt. Ltd.
8. Floyd: Digital Fundamentals, 3rd edn, Universal bookstall, and pvt.ltd
9. R. K Gaur: Digital Electronics and microprocessor - Dhantpat Rai pub.

Paper Code BCA 203 (B)

The proposed scheme includes the following

- 1) Two theory paper A & B, each carrying one examination of 40 marks and of three hours duration.

(Total 80 marks)

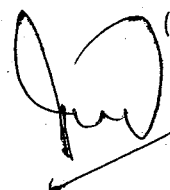
- 2) One practical examination of 25 marks to be conducted by one external and one internal Examiner, to be held in one day with the duration of four hours.

- 3) Theory paper shall carry an internal assessment of 10 marks for each paper.

(Total 20 marks)

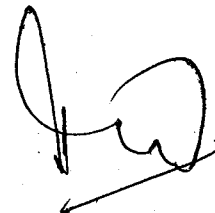
- 4) Practical shall carry an internal assessment of 25 marks. Internal assessment shall be awarded as per rules of University on the subject

(Total 20 marks)



Note for examiner:

The question paper will contain two questions from each unit carrying 8 marks each. (Total 10 questions)
The candidates will be required to answer one question from each unit. Total question to be attempted will be 5 i.e., there will be an internal choice within each unit.

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UNIVERSITY OF JAMMU

Syllabi of BCA. 2ND Year Syllabus, Computer Applications for the examination to be held in the years 2012, 2013 and 2014

Paper code: BCA 204 (A)

Title: Database Management System

Total Marks : 40

Examination Duration: 3 Hours

UNIT-I

Need for Database Management System, The file based system, Limitations of file based system, Database concepts, three level architecture of DBMS, Mappings between levels and data independence, the need for three level architecture , ER model, Entities, Attributes, Relationships, ER Diagram.

UNIT – II

Hierarchical, Network and Relational model, Domains, Attributes, Tuple and Relation, Super keys, Candidate keys, Primary keys, Relational Constraints, Domain Constraint, Key Constraint, Integrity Constraint, Relational algebra, Basic Set Operation, Cartesian Product, Joins

UNIT – III

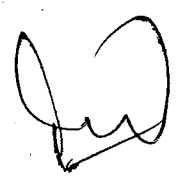
Relational Database Integrity, Referential Integrity, Entity Integrity, Functional Dependencies, Theory of normalization, Single-Valued Normalization, first normal form, second normal form , third normal form, BCNF Normal form, Desirable Properties of Decomposition

UNIT – IV

SQL : SQL query processing, Table creation, deletions, alterations, using inbuilt functions, data integrity constraints, nested queries, views, joins, operators

UNIT –V

Introduction to PL/SQL, advantages, structure, operators, identifiers, comments, data type and its declaration, if-then, if-then-else, if-then-else if statement, simple loop, while loop, for loop, go to statement, Procedures, passing parameters, cursors(implicit and explicit), triggers and its DML types



Suggested Readings:

1. Silbersehatz, Korth and Sudarshan, Database system concepts, MGH 2002
2. Ramakrishnan and Gehrke, Database Management Systems, 3rd Edn, Me Graw Hill, 2003
3. A Leon & M Leon, Database Management Systems, Leon Vikas - 2003.
4. Elmasri and Navathe, Fundamentals of Database systems, Pearson 2004
5. O'Reilly, Practical PostgreSQL Shroff Publishers(SPD) 2002.
6. Bipin C.Desai: An Introduction to Database Systems, West-publishing company.
7. Elmasri, Navathe: Fundamentals of Database Systems, Addison Wesley, Pearson Education.
8. Date, C.J.: An Introduction to Database Systems Addison Wesley Pearson Education.
9. Desh Pande: SQL/PL for Oracle 8 & 8i

Paper Code BCA 204 (A)

The proposed scheme includes the following

- 1) Two theory paper A & B, each carrying one examination of 40 marks and of three hours duration.

(Total 80 marks)

- 2) One practical examination of 25 marks to be conducted by one external and one internal Examiner, to be held in one day with the duration of four hours.

- 3) Theory paper shall carry an internal assessment of 10 marks for each paper.

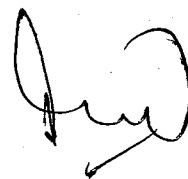
(Total 20 marks)

- 4) Practical shall carry an internal assessment of 25 marks. Internal assessment shall be awarded as per rules of University on the subject

(Total 20 marks)

Note for examiner:

The question paper will contain two questions from each unit carrying 8 marks each. (Total 10 questions)
The candidates will be required to answer one question from each unit. Total question to be attempted will be 5 i.e., there will be an internal choice within each unit.



UNIVERSITY OF JAMMU

Syllabi of BCA. 2ND Year Syllabus, Computer Applications for the examination to be held in the years 2012, 2013 and 2014

Paper code: BCA 204 (B)

Title: Operating System & UNIX

Total Marks : 40

Examination Duration: 3 Hours

UNIT-I

Introduction:

Evolution of operating systems, Operating systems concepts, Types of operating systems, different views of the operating system, Operating system structure.

UNIT – II

Processes:

Concept, Operating system's view of processes, Inter process communication, mutual exclusion, Inter process synchronization, semaphores, process scheduling and Performance criteria, scheduling algorithms, deadlocks, deadlock handling strategies.

UNIT – III

Memory Management:

Basic memory management, swapping, relocation & protection, virtual memory, paging, page replacement algorithms, Design issues for paging systems, segmentation.

UNIT – IV

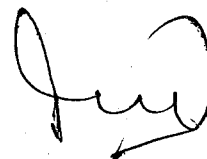
File & I/O Management:

Fifes, Directories, Disk organization, Disk space management, Disk scheduling, Protection Mechanisms, I/O devices, I/O buffering, Device Controllers.

UNIT –V

Introduction to Unix, Features of the UNIX, cat, more, mv, cp, rm, diff, wc, chmod, gzip, mkdir, cd, pwd, ff, grep, egrep, fgrep, wc, who, write, who am i, passwd, ps, kill, date, cal, man.

vi editor, adding text, deleting text, moving around the text in the editor, saving text, quit editor.



Suggested Readings:

- 1) Andrew. S. Tanenbaum, Modern operating systems, Pearson prentice hall.
- 2) A. S. Tanenbaum, A. S. Woodhull : Operating systems-design and implementation, Prentice hall of India pvt. ltd.
- 3) Milenkovic M, Operating system-concepts and design, McGraw Hill International editions.
- 4) Silberschartz, Galvin, Gagne, Operating system Principles , WSE Wiley.
- 5) A S Godbole, Operating systems, Tata McGraw hill.
- 6) Bach M, Design of the UNIX Operating Systems.
- 7) Deitel H. M, An Introduction to operating system, Addison- Wesley publications.
- 8) Madnick & Donovan, Operating systems, McGraw-hill book co.
- 9) Understanding Operating Systems – Flynn – Thomson Learning
- 10) Understanding UNIX, Srengan PHI.
- 11) Das, UNIX/LINUX, McGraw Hill

Paper Code BCA 204 (B)

The proposed scheme includes the following

- 1) Two theory paper A & B, each carrying one examination of 40 marks and of three hours duration.

(Total 80 marks)

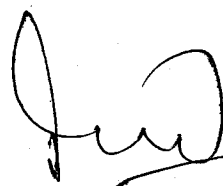
- 2) One practical examination of 25 marks to be conducted by one external and one internal Examiner, to be held in one day with the duration of four hours.

- 3) Theory paper shall carry an internal assessment of 10 marks for each paper.

(Total 20 marks)

- 4) Practical shall carry an internal assessment of 25 marks. Internal assessment shall be awarded as per rules of University on the subject

(Total 20 marks)



Note for examiner:

The question paper will contain two questions from each unit carrying 8 marks each. (Total 10 questions)
The candidates will be required to answer one question from each unit. Total question to be attempted will be 5 i.e., there will be an internal choice within each unit.

%age of change in syllabi of BCA Part - II			
	Paper	Title	Change
1	BCA 202 (A)	Fundamentals of Discrete Mathematics	100%
2	BCA 202 (B)	Data Structure using C/C++	100%
3	BCA 203(A)	Programming paradigm and C++	100%
4	BCA 203 (B)	Circuits and Memory Organization	100%
5	BCA 204(A)	Database Management System	100%
6	BCA 204 (B)	Operating System & UNIX	100%

