

Address: Patna Zero Mile, near Krishna Niketan, Vestor College of Management, Jakariapur, Patna - 800007.

Email-ID- info@vestorcollege.com Mob. No : +91 9354260331

SYLLABUS - As per guidelines of the UGC/Patliputra University (Hons.)

BCA (HONS.) – First Year

The syllabus has been designed according to the U.G.C and approved by the Patliputra University, Patna.

YEAR		PAPERS	MARKS		
1st Year	Paper I	(Full Marks -100, Theory-75 Practical-25)			
	Group 1	COMPUTER FUNDAMENTALS			
	Group 2	INTRODUCTION OF COMPUTER ARCHITECTURE			
Group 3 Group 4 Paper II		PROGRAMMING LOGIC AND DESIGN TECHNIQUES			
		PRACTICAL			
		(Full Marks -100,	Theory-75 Practical-25)		
	Group 1	OPERATING STSTEM			
	Group 2	BUSINESS APPLICATION			
	Group 3	PROGRAMMING WITH FOXPRO			
	Group 4	PRACTICAL			
	Compositio	on HINDI	100		
	Subsidiary				
		MATHEMATICS	100		
		ENGLISH	100		
2nd Year	Paper III	(Full Marks -100, 1	Theory-75 Practical-25)		
		COMPUTER NETWORKING			
		INTERNET			
		BOOLEAN ALGEBRA			
		C – LANGUAGE			
		PRACTICAL			
Paper IV		(Full Marks -100, Theory-75 Practical-25)			
0			400		
Composition		HINDI	100		
Subsidiary		MATHEMATICS	100		
			100		
3rd Voar	Paper V	(Full Marks -100)	100		
Siu leai		PROGRAMMING IN VISUAL BASIC			
		DATABASE MANAGEMENT SYSTEM - I			
		DATABASE MANAGEMENT SYSTEM – II			
		PRACTICAL			
	Paper VI	(Full Marks -100)			
		OBJECT ORIENTED PROGRAMMING			
		JAVA PROGRAMMING			
		ADVANCE TOPIC IN COMPUTER			
		PRACTICAL			
	Paper VII	(Full M	larks – 100, Project - 100)		
	Paper VIII	(Full M	larks – 100, Project - 100)		
	Paper IX	General Studies	100		

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Group- 1 COMPUTER FUNDAMENTALS

- Introduction to Computers: What is Computer? Comparison between computer and human brain, Characteristics of computer, Computer applications.
- History of Computers: Initial development, Generation of computer, Evolution of Personal Computer. Computer Organization: Basic Units of computer, Block diagram of computer, Input unit, Processing unit, Output unit, Storage unit.
- **Types of Printers :**Hard copy output, Impact printers, Non-impact printers, Serial and line printers, Dot-Matrix printers, Laser printers, Daisy wheel printers, Drum and chain Printers, Thermal printers.
- External storage devices : SASD, DASD, Punch cards, Magnetic Tapes, Blocking utilization factor, Magnetic Disk, Tracks, Sectors, Seek time, Rotational latency, Access time, Numerical problems.
- **Types of Computers:** Digital, Analog, Hybrid Computers, General purpose Computers, Turnkey Systems, Microcomputers, Mini computers, Mainframes, Super Computers.
- Data Representation: Number Systems, Binary system, Binary to Decimal and Decimal to Binary conversion. Binary addition, 2's compliment representation, Binary subtraction, ASCII and EBCDIC coding.
- Computer Software: Machine language, Assembly language, High level languages, Compilers, Interpreters, Assemblers. Centralized processing, Decentralized processing, Distributed processing, Management Information System.
- Processing Modes: Uniprocessor, Multiprocessor, Batch processing, off line data entry, On-line processing, On-line data entry, real Time processing, Time sharing processing, Electronic mail, Tele text, Tele conferencing.
- Programming Concepts: Programmed definition, Characteristics of good programmer, Programming steps, algorithms, Flowcharts.

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Group-2

INTRODUCTION TO COMPUTER ARCHITECTURE

- Introduction to microprocessors and associated components, Timer, display controllers, DMA controllers.
- Block diagram of IBM PC. Evolution of microprocessor. Family of Intel microprocessor, introduction to 8086 & 8088 architecture.
- Functional description of various modules & cards. CISC & RISC technology. Various types of displays and other peripherals used in IBM PCs.
- Boot process in IBM PC. System files. Self-text.
- Disk Operating System Information, File management. Directory Structure in DOS. Internal and External commands of DOS.
- Batch files, Configuration files. System files, COM, BIN, SYS, EXE & TXT files.

Group – 3

PROGRAMMING LOGIC AND DESIGN TECHNIQUES

- Programmed development, low-level programming language, high-level languages, programming aids, programming techniques, Programming tools, Program Maintenance.
- Techniques of programming (Algorithm, flowchart, pseudo codes). Introduction to programming in QBASIC structured Programming – Introduction. Need of structure programming Development of programmer in QBASIC.

Group-4

PRACTICAL

- Visit to computer lab: Introduction to various components of a computer. A simple documentation preparation and printing. Usage of printer and other components.
- Use of External and Internal DOS commands. Programming in QBASIC.
- Physical inspection of IBM PC and internal cards. Introduction to nomenclature (COM1, COM2, etc.). Writing batch files for various purposes. Modify config.sys files. Creating using QBASIC programmes.

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PAPER – II - Full Marks – 100 (Theory-75, Pactical-25)

Group – 1

OPERATING SYSTEMS

- Introduction to various categories of software. Operating system and its function interaction of operating system with hardware and user programme.
- Various components of operating system with reference to DOS, BIOS, BIOS and DOS interrupts. Single user operating system, Task loader, Memory management.
- Device management. Control of various devices. Device drivers interrupts driven and pool driven data transfers. Need of software and hardware protocols.
- Multi-user, Multi-tasking, multi-processing and real time operating system. Introduction to memory management scheduling.
- File systems, File Management. Process management and scheduling.
- **4** Special requirements and facilities for multiprocessing environment.
- **4** Examples of multiprocessing operating systems. Introduction to UNIX. User management in UNIX.
- Computers in office automation: Nature and uses of information, Formal and Informal Information and Communication, Gathering and Presenting Information.
- **4** System life cycle, documentation, testing, debugging, Implementation.

Group-2

BUSINESS APPLICATIONS

- 4 Database organization, Database files, records, fields, types of files in database.
- File organization: Sequential file, Random file, Indexed file, Windows 98/2000, MS-Office.

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Group – 3

PROGRAMMING WITH FOXPRO

FOXPRO: VIEWING AND EDITING DATA

- Fox Pro-version, features, requirements of hardware and software
- 🜲 FoxPro- Menu system
- 4 Creating database file, operation of data base (create, list, append, close, quit)
- 🖊 FoxPro-data type
- Data displaying and monitoring commands: display, list locate, edit, change, browse, replace, delete, recall, pack (all commands with various options)
- File utilities in FoxPro display directory, copy delete, rename

FOXPRO: INDEXING, SORTING AND PRINTING REPORT

- Indexing concept and sorting
- Sort commands-single & multiple key
- Advantages and disadvantages of sort
- Indexing vs. sorting & multiple key
- Indexing, find, seek rushmore technology
- + FoxPro report-its creation, feature & utilities, preview, printing custom report, grouping & sub grouping.
- FoxPro level-designing and printing

FOXPRO: Memory variables. Keyboard Macros and Function

Memory variables-creation and uses, simple vs. array Saving and restoring memory variables

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- ♣ ?/??/??? commands
- 4 Time & date functions and commands, date arithmetic
- Converting defining functions keys
- 4 Arithmetic operations, Mathematical functions, mathematical Commands, Statistical Functions

PROGRAMMING AND ERROR DEBUGGING:

- Concept of FoxPro commands file, Modify commands
- Conditioning, branching and looping within Programme file with Do-While Enddo, if-Endif, Scan- Endscan, For-Endfor, Docase-Endcase, Tex-Endtext, Executing commands from other command files, Macro Message
- 4 Common Error Message
- Debugging techniques and commands

MULTIPLE DATA FILE AND CUSTOM SCREENS:

- Concept of Multiple Database File, Using multiple database-SET RELATION, UPDATE, APPEND FROM, COPY TO, JOIN, Relation Query by example.
- Concept of Multiple Database File, Using multiple database-SET RELATION, PDATE, APPEND FROM, COPY TO JOIN, Relation Query by example.
- Create custom screen with @, @_GET, @_EDIT, @SAY_GET_READ, Creating Box & Line, User define functions, Custom Screen Designing and their uses, FoxDoc for Documentation
- Text & References:
- FOXPRO made Simple: by R.K. Taxali, BPB
- MASTERING FOXPRO 2.5 BPB Publication

Group-4

PRACTICAL

Development of a batch files to install software from floppy to disk. Development of a batch files to manage various packages on the disk. Detection of viruses and protection packages on IBM PC.MS-OFFICE, WINDOWS 98/2000.

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सामान्य हिन्दी

(स्नातक कला, विज्ञान एवं वाणिज्य परीक्षा के लिए अनिवार्य)

स्नातक प्रथम वर्ष

100 अंक

निर्धारित पाठ्य पुस्तकं – कविता–कानन– सं० डॉ० देवदत्त राय

पाठ्यांश

- ∔ विद्यापति– बड़ सुख सार पाओल तुअ, तीरे, नव वृंदावन, नव नव तरू गन।
- ∔ कबीर– कौन ठगवा नगरिया, लूटल हो, भगति बिनु बिरथे जनम गयो।
- ∔ सूरदास– निस दिन बरसत नैन हमारे, ऊधो, मोहि ब्रज बिसरत नाहिं।
- ∔ तुलसी– मन पछतइहें अवसर बीते, यह विनती रघुवी गौसाई।
- बिहारी— निम्नलिखित दोहे :— नाहिं पराग नहि मधुर मधु, पत्राहीं तिथि पाइयै, चिरजीवौ जोरी जुरै क्यों, करी बिरह ऐसी तऊ, मोहन मूरति स्याम की। कनक—कनक तैं सौगुनी, त्यों त्यों प्यासेई रहत, अधर धरत हरि कैं परत, कहलाने एकत बसत, समै समै सुंदर सबै।
- ∔ रसखान–खंजन नैन फँदे पिंजरा, कान्ह भये बस बाँसुरी के।

👃 अथवा

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- 븆 साहित्यधारा– सं० डॉ० शिवाजी नाले⁄डॉ० इरेश स्वामी–प्रकाशक–ओरिएंट लांग्मैन, पटनां
- 븆 पद्य— कबीर, रहीम, बिहारी, मैथिलीशरण गुप्त, रामधारी सिंह 'दिनकर'
- 븆 गद्य— प्रेमचंद (कफन), चिरंजीत (अखबारी विज्ञापन), हरिशंकर परसाई (समय काटने वाले), रामवृक्ष बेनीपुरी (बुधिया), महादेवी वर्मा (सबिया)
- 븆 निबंध— (छात्र—जीवन, राजनीति, प्रकृति, महापुरूष, युद्ध शांति, रोजगार, शिक्षा—पद्धति, खेल, चलचित्र, रेडियो, विज्ञान, साहित्य आदि से संबंधित)
- 4 वस्तुनिष्ठ प्रश्न– हिन्दी रचना के पाठ्यक्रम पर आधारित होंगे।

अंको का विभाजन

समय– 3 घंटे

पूर्णांक—100

- 븆 क– पाठ्य पुस्तकों से आलोचनात्मक प्रश्न– 3×12=36 अंक
- 🖶 ख– पाठ्य पुस्तकों से व्याख्यात्मक प्रश्न– 3×8=24 अंक
- ∔ ग– निबन्ध 1×15=15 अंक
- ∔ घ– व्याकरण– 3×5=20 अंक
- ∔ ङ– वस्तुनिष्ठ– 10×1=10 अंक
- 🔸 नोट :-- यू० जी० सी० के निर्देशानुसार 20 अंक साक्षात्कार (मौखिकी) के लिए निर्धारित किए गये हैं।

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SUBSIDIARY PAPER

COURSE TITLE: MATHEMATICS

Answer eight questions selecting at least one from group.

Time: 3 Hours Total Marks- 100

Group-A: Set Theory Abstract Algebra (Four Questions)

Rational of sets and their algebra, Cartision products, Notion of relation and mapping and their Classification, Equivalence relation and partition of sets.

Binary operation, Notions of Group, Sub Group, Cycle group and permutation group, Elementary Concepts of ring, integral domain and field with examples.

Group-B: Matrices and Linear Programming (Four Questions)

Matrices and its algebra, Kinds of Matrices (unitary matrix Hermitian Matrix), Transpose, Adjoint, inverse and orthogonal matrices, Notions of Rank of matrix.

Convex set and their properties L.P.P. problem and their graphical solution, Theory of simplex method and their simple applications.

Groups-C: Trigonometry and Real Analysis

De Moivre's Theorems and its application, Complete arguments and Hyperbolic function series Gregories series. (Two Questions)

Real Analysis (three questions)

Sequence and their convergence, Cauchy's general principle of convergence, convergent and divergent series of the positive terms, Comparison test, Cauchy's root test, D. Almberts test, Alternating series, Continuity and differentiability of real function of a single real valuable and simple continuity and discontinuity of function of single variable and their properties.

Group-D: Analytical Geometry Of two Dimensions

System of circles, Coaxial Circles, General Equation of second degree and its reduction to standard from of parabola, Ellipse and Hyperbola, Equations of tangents and normal for general equation and their form in case of particular conics. (Two Questions)

Group-E: Analytical Geometry of Two Dimensions

Relations and notions between different system of Co-ordinates, Direction cosines, Angle between two straight lines, Equation of planes and straight line, Condition for coplanarity of straight lines. (Two Questions)

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SUBSIDIARY PAPER

COURSE TITLE: ENGLISH

Paper I

4

Full Marks-100 Duration 3 Hour

Books Prescribed:

-	The Golden Treasury	:	Motilal Banarsidass

- G. Herbert Love J. Milton **On His Blindness** A. Pope A Little Learning W. Werdsworth A Slumber Did My Spirit Seal
- J. Keats Ode to a Nightingale
- Ode to the West Wind P.B. Shelley
- A.I. Tenny Son Break, Break, Break
 - G. M. Hopkins God's Grandeur
- W. H. Auden Look Stranger

The Literary Heritage

- A New Anthology of Indian English prose Ed. Prasad, Mahis & Singh, Motilal Banarsidass and short Story
- India Again E. M. Foster Life's Philosophy J. Nehru R. Lynd On Being a Bore The Country of the Blind H. G. Wells 1 The Post Master R. N. Tagore Oscar Wild ÷ The Selfish Giant
- The Merchant of Venice W. Shakespeare

Distribution of Marks

- Six explanations to set (Two from each of the three books). Three answers to be attempted.
- 8 x3=24 Three questions to be answered one each from the three books. $20 \times 3 = 20$ 16
- Precis of a passage.

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BCA (HONS.) – Second Year

Paper-III - Full Marks -100 - (Theory-75, Practical-25)

COMPUTER NETWORKING

Introduction to the N/W, Network Topologies, Types of channels: Twisted Wire, Co-axial wire, Microwave Communication, Satellite Communication, Optical fiber, Simplex, Duplex, Half Duplex Communication, Switching Techniques: Circuit Switching, Message Switching, Packet Switching, FEP, Repeaters, Bridge, Gateway, Token passing CS/CD, Protocols, ISO-OSI Model, NIC, Serial and Parallel Communications.

INTERNET

- Evolution, Protocols, Interface Concept, Internet Vs. Intranet, Growth of internet, ISP, Connectivity-Dial-Up, Leased Line, VSAT, etc. URLs, Domain Names, Portals, Application
- E-Mail Concept, POP and We Based E-Mail, address, Basics of sending and receiving. E-mail protocols, Mailing list, Free Email services.

BOOLEAN ALGEBRA

Boolean Algebra, Rules and Theorems, De 'Morgan Theorem, Duality Principal, Logical gates, Canonical equations, K-Maps, Half Adder, encoder, decoder.

STRUCTURED PROGRAMMING

4 Methods of documentation. Methods of analyzing a program requirement. Data flow diagrams.

C-LANGUAGE

Unit-I

- Overview of C
- Introduction & features of C
- Structure of C Program
- Variables, Expressions, Identifiers, Keywords, Data Types, Constants

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- Operators and Expressions
- Operator : Arithmetic, Logical, Relational, Conditional and Bitwise Operator Precedence and Associatively of Operators,
- Type Conversion in Expression

Unit-II

- Basic Input/Output and Library Functions
- Single character input/output, i.e. getch(), getcher(), getcher(), putcher()
- Formatted input/output i.e printf() and scanf()
- Library functions concepts, Mathematical & Character functions.
- Control Structure
- ✤ If statements, If-Else statements, Nesting of If-Else Statements, else if lader
- The?: Operator go to statement Switch statement Compound Statement Loop control for, while, do-while loops break, continue, go to statement

Unit-III

- Single and Multi-Dimensional arrays
- Array declaration and initialization of Arrays
- Strings: declaration, initialization, functions.

Unit-IV

Functions, The need and form of C functions, User defined and library functions, Function arguments, Return values and nesting of function, Recursion, Calling of functions, Array as function arguments, Scope and life of variable-local and global variable, Storage class specifier- auto, extern, static, register

Unit-V

Structure and union, Defining structure, Declaration of structure variable, Accessing structure member, nested Structure, Array of Structure, Structure Assignment, Structure as function argument, union

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Unit-VI

Basic of pointers, operators, Pointers and function, passing arrays to function, array pointers, pointers strings, pointers to structure, pointers within structure

Unit-VII

Dynamic Memory Allocation, the process of memory allocation, malloc () operator, size of () operator, function colloc(), function fee(), function reailoc()

Unit-VIII

File handing, file Structure, File handing function, file type, Streams, text, Binary, file pointer, opening file and closing file, writing and reading a character, using fogen(), get(), putc(), &fclose(), using feof(), working with string fputs() & fgetsj), flushing stream, using fread(), fwrite(), & rewrite(), direct access file.

Unit-IX

Preprocessor Directive & Command, the Preprocessor, #define, defining like macros, #error, #include, Conditional Compilation directive i.e, #if, #else, #elif and #ifdef 7 #under #line

Text & References Books

- + Pointer Through C.Y.Kanitkar TSR through C.Y.Kanitkar Programming in CE.Balaguru Swami
- + Programming in C language in C language and Project development.

Data Structure

Introduction to data structure

- Concept of data structure
- Abstract data Structure
- Analysis of Algorithm
- The Concept of List
- Stack and Queues
- Introduction to stacks primitive operation on stack
- Stack as an abstract data type

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- Multiple stack
- Stack application: infix, postfix, prefix and recursion
- Introduction to queues
- Primitive operation on the queues
- Queues as an abstract data type
- Circular Queue
- \rm Dequeue
- Priority queues
- Priority queues

Linked List

- Introduction to the list of Stack
- The Linked List of Queue
- Header nodes
- Doubly Linked List
- Circular Linked List
- Stack & Queue as a circular linked list
- Applications of Linked List

Trees

- Basic Terminology
- Binary Tree
- The Tree representation as Array & Linked List
- Binary tree representation

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- Traversal of Binary tree; In order, Preorder & Post order
- Application of Binary Tree
- Threaded Binary Tree
- B-Tree & Height Balanced tree, representation of B+ & B* trees
- Binary tree representation of trees
- Counting Binary trees

Searching and Sorting

Sequential Searching, Binary Search, Insertion Sort, Selection Sort, Quick Sort, Bubble Sort, Radix Sort, Shell Sort, Heap Sort, Comparison of Sorting Methods.

Tables and Graphs

Hash Table, Collision resolution Technique, Introduction to Graphs, Definition, Terminology Directed, Undirected & Weighted, Graph, Representation of Graphs, Graph Traversal-Depth First & Breadth () First Search, Spanning Tree Minimum Spanning Tree, The Basic Greedy Strategy for computing an Algorithm of Kruskal and Prims

Text & References Books

- Fundamentals of Data Structure : By S. Sawhney & Horowith
- Lota Structure : R. B. Patel
- 4 Data Structure : Tannenbaum

COMPUTER AIDED DRAFTING

Introduction to AutoCAD / RoboCAD or similar package. Advanced features of these packages. Drawing plan of a building using AutoCAD etc. Analysis feature of AutoCAD

PRATICAL

- 4 Design of layout of a building. Design of interior of its rooms. Printing and plotting the prepared drawings.
- Fashion designing through AutoCAD.

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स्नातक खंड–2

अंक— 100

सामान्य हिन्दी (हिन्दी रचना)

(कला, विज्ञान, वाणिज्य के उत्तींण पासएवं प्रतिष्ठा दोनों वर्गों के विद्यार्थियों के लिए अनिवायी)

पाठ्ग्रंथ :

📥 कुरूक्षेत्र – दिनकर

अथवा

- यशोधरा– मैथिलीशरण गुप्त
- 🖊 अक्षवट– डॉ० भूपेन्द्र कलसी

पाठ्यांश :–

- </u> यज्ञ— महात्मा गाँधी।
- ∔ हमारा सांस्कृतिक पतन
- ∔ दक्षिण गंगा गोदावरी
- ∔ सप्तसागर महादान
- ∔ आजादी के बाद भारतीय विज्ञान
- ∔ गद्यप्रवाह— सं० डॉ० विजय कुल श्रेष्ठ युनिवर्सिटी बुक हाउस, जयपुर

पाठ्यांश—

- ∔ (क) व्यंग्य : मूल्यों का उलटफेर– हरिशंकर परसाई
- ∔ (ख) रिपार्ताज : मुक्ति योद्धाओं के शिविर में–विष्णुकांत शास्त्री
- ∔ (ग) पत्र साहित्य : इतिहास के शिक्षा– पं० जवाहरलाल नेहरू
- ∔ (घ) वैज्ञानिक निबंध : पर्यावरण और सनातक दृष्टि– छगनलाल मेहता
- ∔ (ङ) ललित–निबंध ः हल्दी–दूब और दधि अच्छत– विद्यानिवास मिश्र

अंको का विभाजन

समय— 3 घंटे पूर्णांक—80

- 🖊 क– आलोचनात्मक प्रश्न– 3×15=45 अंक
- 🖊 ख— व्याख्यात्मक प्रश्न 3×10=30 अंक
- ∔ ग– लघुउत्तरीय प्रश्न 3×5=15 अंक
- 🖊 घ— वस्तुनिष्ठ प्रश्न— 10×1=10 अंक

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SUBSIDIARY PAPER

COURSE TITLE: MATHEMATICS

Time: 3 Hours Total Marks- 100

Group-A

- Eight Question to be answered selecting at least two from each group.
- Differential Calculus (Three Questions): Leibnitz theorem, Taylor's series and Maclaurin's series, partial derivatives, Eular's theorem, Indeterminate forms, Equation of Tangents and normal Asymptotes, Formula of radius of curvature in different co-ordinates system, Maxima and Minima of functions of single variable.
- Integral Calculus (Three Questions): Integration by summation method, Reduction formula rectification and quadrature with simple examples, Volume and surface of solid of revolution, Moment of Inertia.
- Differential Equations (Three Questions): Differential equation of first order and first degree, separation of variable Homogeneous equation and Linear forms, Differential equation of first order and higher degree, Claireul's form Linear differential equation of second order with constant coefficients, orthogonal trajectories.

Group-B

Vector Analysis (Three Questions)

Classification of Vector, Triple products, Differentiation of a vector function, Differentiation of a product of two vector, Gradient of a scalar, Gradient of a scalar, Divergence and curl of a vector function in Cartesion co-ordinates.

Group-C

Mechanics (Three Questions) Coplanar force system, Necessary and sufficient condition for equilibrium of a particles, Necessary condition for a system of forcesacting on a particle to be in equilibrium, Definition of equipollent force system, Reduction of a general plane force system, Equation of the line of action of the resultant Principle of virtual work (Two Questions)

Basic concepts of Mechanics, Basic Law of Mechanics, Intertial frames of reference, work and energy Principle, conservative field and potential energy, Principle of conservation of energy for a particle.

- Rectilinear Motion: Uniformly accelerated motion (including connected system) Resisted motion, Harmonic Oscillate Damped and force vibrations, Elastic spring and strings, Hook's Law, Vertical and Horizontal vibrations of a particle attached to an elastic string.
- Motion in Plane: Components of velocity and acceleration, Cartesian, radial and transverse tangential and normal (Three Questions)

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COURSE TITLE: ENGLISH SUBSIDIARY

Full Marks – 100 Time 3 Hour

- 4 The new icons : An Anthology of Prose and Short Story, Oxford University Press
- Section (A) (Prose)
 - > A. G. Gardiner
 - J. N. Newman
 - F. Bacon
 - R. Lynd

- : On Habits
- : The Definition of a Gentlemen
- : Of Studies
- : Forgetting

Section (B) (Short Story)

O' Henry : The Gift of Magi.
A. Chekov : A work of Art.
M. R. Anand : The Parrot in the cage
K. Mansfield : The Doll's House

: Animal Farm

- 🔸 G. Orwell
- Distributions of Marks:
 3 Explanation from the prescribed texts
 3 Critical questions from the prescribed texts
 17 x 3 = 51
 Essay
 Grammar
 10

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BCA (Hons.) – Third Year

PAPER-V - Full Marks – 100 (Theory-75 Practical-25)

PROGRAMMING IN VISUAL BASIC

- The Integrated Development Environment of Visual Basic
- 4 Menu Bar, tool bar, Project Explorer, tool Box, the Properties Window
- The form Designer
- Immediate Window
- \rm Edit View, Run, Debug, Options
- Using the Application Wizard
- Mapping Project
- Concept of VB Project
- Creating the Project
- Opening, renaming and saving the Projects

Elements of the user interface

- Designing the user interface
- Creating forms and code modules
- Aligning
- Running the application
- Programming an application
- Programming the command buttons
- Grouping controls

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Visual Development and event-driven programming

- Common Properties
- Methods and common properties

Customizing the Environment

🖊 Editor tab, format tab, general tab, docking environment tab

Introduction to Visual Basic Lang Variable

Declaring variable type of variable converting V type, user define data type, values, variable declaration, a variable's scope

Constant

Arrays, collections, procedures, subroutines, fur arguments, control flow statement and conditional statements, looping statements, iteration

Working with forms

- Loading
- Showing and hiding forms
- Controlling one form within another
- Using form templates
- \rm Menus
- Designing menus
- Programming menu commands
- Using access and shortcut keys
- Mapping menus at runtime
- 4 Mouse conflicts, dragging list items using message boxes and input dialogs
- Using standard modules instead of from modules

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Active X Commands

- The text box control
- Basic properties
- Manipulating the control's text
- Text selection
- Search and replace operations
- Capturing key strokes
- List box and combo box controls
- Basic properties
- The list box controls methods, arrows
- Indexing with the list box controls
- Searching as sort list
- The Scroll box and slider control
- Scroll bar control
- Scroll bar control's event
- Dialog Box
- Using the common dialog controls
- Color common dialog box
- Front dialog box
- The filar open and file common dialog box
- Print dialog box
- Help dialog box

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- File controls
- The built Active X controls

Component of Visual Basic

- Classes, instances, objects
- Encapsulation and abstraction
- 4 Derived classes and base classes, classes in Dynamic Binding, creating object, variables forms as a classes
- Creating manipulating runtime controls the object browser
- Object linking and embedding
- Graphics with Visual Basic
- Form, picture box and image box controls sizing image loading and saving images
- Exchanging image through the clipboard
- Coordinate systems, scale properties and methods
- The drawing methods, drawing text, drawing boxes filling
- Drawing curves, manipulating pixels, specifying colors, specifying gradients
- Event driven programming, Multiple document interface (MDI)
- Interface with Visual Basic And Windows API
- Dynamic Link-Libraries
- Programming and interfacing with office

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DATABASE MANAGEMENT SYSTEM – I

- Categorization of DBMS systems. Network, Hierarchical and Relational database. Application of DBMS system. Entity relationship charts.
- Relational Database Management Systems (RDBMS). Why to use them and where. Data Manipulation Language (DML) and Data Control Language (DCL).
- **4** Security consideration in DBMS, performance improvement in databases.

DATABASE MANAGEMENT SYSTEM II

- Relational Database advance concepts. Introduction to ORACLE / INGRESS or a similar RDBMS on a multi user environment.
- Structured Query Language (SQL). Form design on an advanced RDBMS. Report generation. Query by example (QBE) and Report by form. Accessing RDBMS using management. Security Consideration.

PAPER VI - Full Marks – 100 (Theory-75 Practical-25)

OBJECT ORIENTED PROGRAMMING

- Introduction to object oriented programming & C++
- Objects, Polymorphism, Inheritance, C++ Fundamentals, Classes and Objects, Function overloading, Operator overloading, Constructors & Destructors, Multiple inheritances, Passing objects to functions, Array of objects, Pointers to object, C++ I/O class library, C++ Stream, C++ Predefined Streams, C++ Stream Classes

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JAVA PROGRAMMING

Over View of Java Lang

- JAVA Program Structure, tokens, Java virtual machine, constant & variables, data types, declaration of variables, scope of variables, symbolic constants, type casting
- Operators : arithmetic, relational, logical assignment, increment and decrement, conditional, bitwise, special, expression and its evaluation
- Decision making and branching
- If statement, if, else statement, nesting of if.. else statements, else. If ladder, switch ? operator, loops, while, do, for, jumping loops, labeled loops

Classes, object, methods

- Defining class, adding variable and methods, creating object, accessing class members, constructor, methods of overloading, static members, nesting of methods
- Inheritance: extending a class, overriding methods, final variable and methods, final classes, finalize methods, abstract methods and classes, visibility control
- Array, String and vectors
- 4 Array: one dimensional, two dimensional strings, vectors, wrapper classes, defining interfaces, extending
- interfaces, implementing interfaces, accessing interfaces,
- Multithreaded Programming
- Creating threads, extending the threads class stopping and blocking a thread, life cycle of thread, using thread methods, thread exception, thread priority, synchronization, implementing the runnable interface

Applet programming

Local and remote applets, applets vs. application writing applets, applets, applets life cycle, creating and executable applets, designing a Web page, applet tag, addling applet to html, running the applet, passing, parameters to, applets, aligning the display.

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ADVANCE TOPICS IN COMPUTERS

Introduction to:

Computer animation, Artificial intelligence. Dedicated computers, ATM. Data encryption Data communication and networking (course to be modified every year to take care of latest development). Visit to a computer industry.

PAPER VII - Full Marks – 100 (Project – 100)

- Design of a database for a business application. Design of data entry forms and reports layouts for this databases. Creation of programmes to access and manipulation of the databases.
- Development of a business application in RDBMS.
- Creating, merging, deleting tables.
- Project Preparation & Viva-Vove

PAPER VIII - Full Marks – 100 (Project – 100)

- Prepare a Project in C++ Programming.
- Project Preparation & Viva-Voce.

PAPER IX - Full Marks - 100 (General Studies)

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