

SCHEME OF EXAMINATION 2020-2021
BCA PART- III

Subject Code	Subject Paper	Theory Marks		Internal Marks		Teaching Load per Week		
		Max. (A)	Min. (B)	Max. (C)	Min. (D)	L	T	P
BCA301	Statistical Analysis	80	27	20	8	4	2	-
BCA302	Programming in Java	80	27	20	8	4	2	-
BCA303	Dot Net Technology	80	27	20	8	4	2	-
BCA304	Software Engineering	80	27	20	8	4	2	-
BCA305	Data Structure	80	27	20	8	4	2	-
BCA306	Computer System Architecture	80	27	20	8	4	2	-
BCA307	LAB VII: Programming Lab in Java	100	50	40	16	-	-	3x2
BCA308	LAB VIII: Dot Net Technology Lab	100	50	40	16	-	-	2x2
BCA309	Project	100	50	20	8	-	-	1x2
TOTAL		780	312	220	88			
GRAND TOTAL	(PAPER + INTERNAL)	(A+C) 1000		(B+D) 400				

- *Student will have to pass individually in all theory, practical and sessional*

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Statistical Analysis
Subject Code - BCA-301

Max Marks : 80

Min Marks : 27

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

UNIT-I

COMBINATORICS: Permutation and Combination, Repetition and Constrained Repetition, Binomial Coefficients, Binomial Theorem.

UNIT-II

Frequency distributions, Histograms and frequency polygons, Measures of central tendency: Mean, Mode, Median, Dispersion, Mean deviation and standard deviation. Moments, Skewness, kurtosis,

UNIT-III

Elementary probability theory: Definition, conditional probability, Probability distribution, mathematical expectation

Theoretical distribution: Binomial , Poisson and Normal distribution, Relation between the binomial, poisoned Normal distribution.

UNIT-IV

Correlation and Regression: Linear Correlation, Measure of Correlation, Least Square Regression lines.

Curve fitting: Method of least square, least square line, least squares Parabola. Chi-square test: definition of chi-square; signification test: contingency test, coefficient of contingency.

UNIT-V

Basic of sampling theory: Sample mean and variance, students t-test, test of Hypotheses and significance, degree of freedom, Z-test, small and large sampling, Introduction to Monte Carlo method.

TEXT BOOKS:

1. Advanced Engineering Mathematics: H.K. Dass; S. Chand & Co., 9 Revised Edition, 2001.
2. Discrete Mathematics: S.K. Sarkar; S. Chand & Co., 2000.
3. Numerical Analysis: S.S. Sastry; Prentice Hall of India, 1998.
4. Mathematical Statistics: J.N. Kapoor and H.C. Saxena.
5. Mathematical Statistics: M. Ray and H. Sharma

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Programming in Java
Subject Code - BCA-302

Max Marks : 80

Min Marks : 27

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

UNIT - I

Introduction: Genesis of java, importance to the Internet, overview of features. **OOP** : OOP features, data types, control structures, arrays, methods and classes, nested & inner classes, string and String Buffer class, Wrapper Class, vectors,

UNIT-II

Operators: Arithmetic Operators, Relational Operators, Logical Operators, Bit wise Operators, Conditional Operators, new operator, [] and instance of operator. Control Statements: Java's Selection statement, Iteration Statement, Jump Statement, Array: Declaring Array variables, Constructing an Array, Initializing an Array, Multidimensional Arrays, Anonymous Arrays.

UNIT - III

Introducing Classes: Class Fundamentals, Declaring Object, Assigning Object Reference Variables, Defining Methods, method overloading, Using objects as parameter, Constructors, Garbage collection, finalize () method. Inheritance: Inheritance basic, method overloading, object reference this and super, Chaining constructor using this () and super (), Member accessibility modifier: public, protected, default accessibility of member, private protected, private.

UNIT - IV

Package: Define package, CLASSPATH, importing package, **Interface:** Define an interface, implementing interface, extending interface, variable in interface, Overview of nested class: Top level nested class and interface, Non static inner class, Local class.

Exception Handling : Fundamental: exception types, using try and catch, throwing exceptions, defined exceptions.

UNIT-V

Multithreaded Programming : Java spread model, creating threads, and thread priorities, synchronization. Suspending resuming and stopping threads. **Input/Output:** Basic Streams, Byte and Character Stream, predefined streams, reading and writing from console and files. Using standard Java Packages (lang,util,io), **JDBC:** Setting the JDBC connectivity with backend database.

BOOKS RECOMMENDED :

1. The Complete Reference Java 2
2. A Programmer Guide to Java
3. Web Enabled Commercial Application Java 2
4. Java Primer
5. Java Programming

- Herbert Schildt, Publisher- TMH
- Khlid A. Mughal, R.W. Rasmussen.
- Ivan Bayross Publisher- B.P.B
- by E.Balaguruswami
- Khalid Mughal



