

Govt. KRG PG Autonomous College, Gwalior, MP
BCA – Session 2021-22

PAPER CODE BCA - 601
(Probability & Statistics)

UNIT-I Introduction: Frequency distribution and Frequency charts, Histogram, Frequency polygons, Frequency curves and Cumulative frequency distribution, Ogives.

Measures of Central Tendency: Arithmetic mean, weighted arithmetic mean, geometric mean, harmonic mean, median, mode, quartiles, deciles and percentiles.

Measures of Dispersion: Range, mean deviation, semi-inter quartile range for quartile deviation, absolute and related dispersion, coefficient of variation.

UNIT-II Moments, Skew ness and Kurtosis: Moments of various types, relation between moments, Sheppard's correction, Skew ness and kurtosis, moment generating functions.

Elementary Probability Theory: Sample space, events, classical definition of probability, theorems on total and compound probability, independent and dependent events, mutually exclusive events, mathematical expectation.

UNIT-III Probability Distributions: Discrete and continuous probability distributions, basic concepts and applications of Binomial, Poisson, Rectangular, Exponential and Normal distributions.

UNIT-IV Regression and Correlation: Regression analysis, Least square fit, polynomial and curve fitting, Linear and non-linear regression algorithms, Linear correlation, measures of correlation, coefficient of correlation, rank correlation, multiple and partial correlation for three variables.

UNIT-V Testing of Hypotheses: Simple and composite hypothesis, errors of kind-I and kind-II, critical region, level of significance.

Tests of Significance: Tests for simple hypotheses, Chi-square, t, F and z tests, ANOVA-one way and two-way classification.

Recommended Books:

1. Mathematical Statistics by J. N. Kapur and H. C. Saxena.
2. Mathematical Statistics by M. Ray and H. S. Sharma.
3. Statistical Methods by S.P. Gupta
4. Statistics- Theory, Methods and Applications by Sancheti and Kapoor.
5. Probability & Staistic in Engg. By Hines.
6. Probability Models for Computer Science by M. Ross.
7. Introduction to Probability by Roussars.

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Saxena, Jay, Sancheti, Nagesh, 18/10/21

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PAPER CODE BCA - 602
SOFTWARE ENGINEERING

UNIT 1-INTRODUCTION TO S/W ENGINEERING; SOFTWARE PRODUCT AND PROCESS: GENERIC PHASES, SOFTWARE DEVELOPMENT MODELS; PROJECT SCHEDULING AND TRACKING.

UNIT 2-Software architecture and design: Prominent design methodologies; Verification, validation and performance evaluation; SW Configuration Management and maintenance; SW measurement- Size, Process and Project Metrics; LOC , FP metrics.

UNIT 3-Testing and the related concepts : Testability and features of Test Cases; Software Testing techniques: WBT,BBT, Software Testing Strategies: Approach, Issues; integration, System, alpha , Beta testing etc.

UNIT 4-Quality Factors, framework, Quality assurance: concepts, Activities etc. . SW Reliability, SQA Plan, Quality models: ISO 9000 and SEI-CMM and their relevance.

UNIT 5-FUNCTIONS OF CASE TOOLS AND THEIR USE WITH PRACTICAL EXAMPLES OF SPECIAL CASE TOOLS, SUCH AS TURBO ANALYST.

Reference:

Software Engineering a Practitioner's Approach - Pressman R.S. (McGraw Hill)

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PAPER CODE BCA - 603

Internet Technologies

UNIT- 1 INTRODUCTION OF INTERNET : IS INTERNET , SERVICES OF INTERNET , H/W & S/W REQUIREMENTS TO CONNECT TO THE INTERNET .E-MAIL, INTRODUCTION OF WWW, WEB SERVER AND WEB CLIENT, DIFFERENCE BETWEEN THE WEB AND THE INTERNET , INTERNET SERVICE PROVIDER (ISP).

Web publishing Concepts, Domain name Registration, Space on Host Server for Web site,

UNIT- 2 Choosing an Internet Service Provider : Stability , Customer Service, Performance , Pricing , Establishing an Internet Account.

E-mail Basics : Running an E-mail Program , Sending mail, Reading mail, Replying to mail, Deleting mail. Newsgroups, mailing Lists , Chatting.

UNIT -3

Data Transmission Protocols, Client/Server Architecture & its Characteristics, FTP & its usages. Telnet Concept, Remote Logging, Protocols, Terminal Emulation. Message oard, Internet chatting - Voice chat, text chat.

UNIT -4 An Introduction to Internet Explorer : Starting Internet Explorer , A Quick Tour with Internet Explorer , At the Helm in internet Explorer, Viewing Various file Types .

Internet Search Engines: What is Search Engines , How do Search Engines work ?, Types of Search Engines.

UNIT -5 Creating a Web Page : What is HTML , What can You Do with HTML , Creating , Saving and Viewing HTML documents , Applying Structure Tags , Applying Common Tags and attributes Images, Hyperlinks, Backgrounds and Colour controls, Different HTML tags, Table layout and presentation, Use of font size & Attributes, List types and its tags. Use of Frames and Forms in web pages. Creating a New Web, Opening an Existing Web, Creating , Opening and Saving Web Pages , Entering and Editing Text. Printing Page , Spell Checking, Finding or Replacing Text.

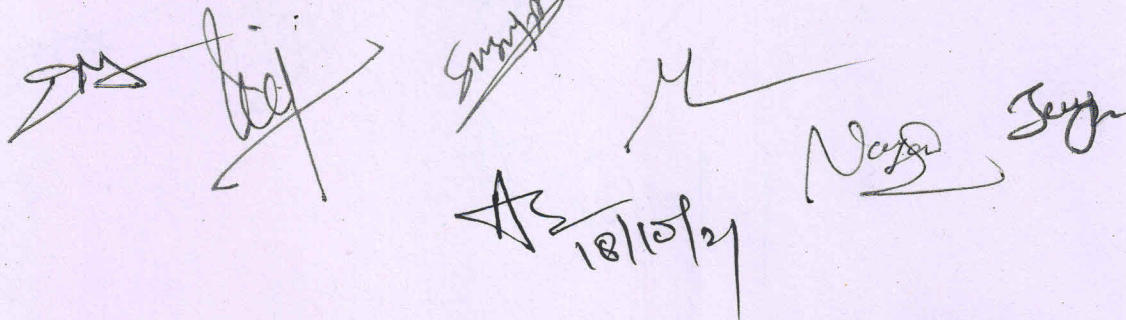
Reference:

Alexis leon and Mathews Leon - Internet for every one (Tech World)

Douglas Comer - The Internet Book (prentice Hall)

SYBEX- bpb publication – Internet Complete (Second Edition).

V.K.Jain - O level Module - M 1.2 - Internet & web page designing , BPB Publications


A collection of handwritten signatures and dates. From left to right: a signature that looks like 'S.K.', a signature that looks like 'A.K.', a signature that looks like 'S.K.', a signature that looks like 'M.', a signature that looks like 'Nagar', and a signature that looks like 'S.K.'. Below the 'S.K.' signature on the right, there is a date '18/10/21'.

PAPER CODE BCA - 604
ACTIVE SERVER PAGES PROGRAMMING

UNIT - I

VBSRIPT BASICS, EMBEDDING VBSRIPT IN HTML, VBSRIPT TO DISPLAY INFORMATION, HIDING VBSRIPT FROM OLDER BROWSERS, CODE DOCUMENTATION AND FORMATTING, DEFINING AND USING VARIABLES, SUBTYPES, AND CONSTANTS, SINGLE AND MULTI DIMENSIONAL ARRAYS, VBSRIPT PROCEDURES, PROGRAM CONTROL STATEMENTS AND STRUCTURE, STRINGS, NUMBERS, DATES AND TIMES FUNCTIONS.

UNIT - II

ACTIVE SERVER PAGES - INTRODUCTION & BENEFITS OF ASP, INTRODUCTION TO WEB SERVER, PWS & IIS, WORKING WITH OBJECTS, USING THE RESPONSE OBJECT - BUFFERING, CACHE, WRITE, FLUSH, END, REDIRECT ETC. USING THE REQUEST OBJECT - QUERYSTRING & FORM COLLECTION, RETRIEVING FORM DATA, WORKING WITH COOKIES IN ASP

UNIT - III

APPLICATION AND SESSION OBJECTS, GLOBAL.ASA FILE, CLIENT-SIDE FORM VALIDATION, THE FILESYSTEMOBJECT AND THE TEXTSTREAM OBJECT. WORKING WITH THE FILE SYSTEM, READING AND WRITING TO A FILE, WORKING WITH DRIVES AND FOLDERS.

UNIT - IV

USING DATABASES - INTRODUCTION TO THE ACTIVE X DATA OBJECTS MODEL (ADO), CONNECTING TO A DATABASE, DISPLAYING RECORDS, CREATING DYNAMIC DROP-DOWN MENUS AND OPTION GROUPS, FILTERING RECORDS WITH SQL WHERE CLAUSES AND WILDCARDS, ADDING, UPDATING, AND DELETING RECORDS, WORKING WITH RECORDSETS - RETRIEVING A RECORDSET, RECORDSET CURSOR AND LOCKING TYPES, ADVANCED METHODS AND PROPERTIES OF THE RECORDSET OBJECT.

UNIT - V

GENERATING DYNAMIC CONTENT FROM THE SERVER - DETECTING BROWSER PROPERTIES, USING THE CONTENT ROTATOR COMPONENT, THE CONTENT LINKING COMPONENT, THE COMMAND OBJECT AND THE PARAMETERS COLLECTION, CREATING A DATA BROWSER, PAGING THROUGH ROWS IN A RECORDSET, CASE STUDY ON CREATING A JOB SITE.

TEXTS & REFERENCE BOOKS :

ACTIVE SERVER PAGES 2.0 (UNLEASHED) BY STEPHEN WALTHER : TECHMEDIA

TECH YOURSELF ASP 3.0 IN 21 DAYS BY SCOTT MITCHELL, JAMES ATKINSON: TECHMEDIA MASTERING ACTIVE SERVER PAGES 3.0 BY RUSSELL JONES: BPB

ASP 3 Programming Bible by Eric A. Smith: IDG Books

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PAPER CODE BCA – 605
Linux Operating System

UNIT – I

Linux introduction and file system - Basic Features, Advantages, Installing requirement, Basic Architecture of Unix/Linux system, Kernel, Shell. Linux File system-Boot block, super block, Inode table, data blocks, How Linux access files, storage files, Linux standard directories. Commands for files and directories cd, ls, cp, md, rm, mkdir, rmdir, pwd, file, more, less, creating and viewing files using cat, file comparisons – cmp & comm, View files, disk related commands, checking disk free spaces. Partitioning the Hard drive for Linux, Installing the Linux system, System startup and shut-down process, init and run levels.

UNIT-II

Essential linux commands Understanding shells, Processes in linux process fundamentals, connecting processes with pipes, tee, Redirecting input output, manual help, Background processing, managing multiple processes, changing process priority with nice, scheduling of processes at command, cron, batch commands, kill, ps, who, sleep, Printing commands, find, sort, touch, file, file related commands-ws, sat, cut, dd, etc. Mathematical commands- bc, expr, factor, units. Creating and editing files with vi, joe & vim editor

UNIT-III

System administration Common administrative tasks, identifying administrative files – configuration and log files, Role of system administrator, Managing user accounts-adding & deleting users, changing permissions and ownerships, Creating and managing groups, modifying group attributes, Temporary disable user's accounts, creating and mounting file system, checking and monitoring system performance file security & Permissions, becoming super user using su. Getting system information with uname, host name, disk partitions & sizes, users, kernel. Backup and restore files, reconfiguration hardware with kudzu, installing and removing packages with rpm command. Configure X-windows desktop-redhat-config-Xfree86, understanding XF86config file, starting & using X desktop. KDE & Gnome graphical interfaces, changing X settings.

UNIT-IV

Shell programming- Basic of shell programming, Various types of shell available in Linux, comparisons between various shells, shell programming in bash, read command, conditional and looping statements, case statements, parameter passing and arguments, Shell variables, system shell variables, shell keywords, Creating Shell programs for automate system tasks.

UNIT-V

Simple filter commands – pr, head, tail, cut, paste, sort, uniq, tr. Filter using regular expressions – grep, egrep, and sed. awk programming – report printing with awk.

TEXTS & REFERENCES BOOKS :

UNIX – Concepts & Applications (Third Ed.) – Sumitabha Das, Tata McGraw Hill Publications.

Unix for programmers and users (Third Ed.) – Graham Glass & King Ables, Pearson Education India. (Low Prices Edition).

Red Hat Linux 9 Bible – Cristopher Negus, IDG Books India Ltd.
LINUX Complete – BPB Publication

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