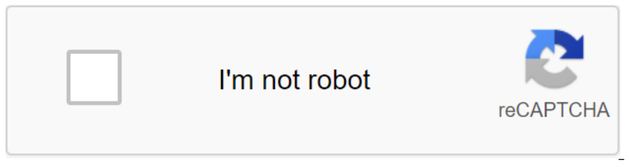
Vtu computer science syllabus 2020 pdf



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VTU Syllabus 2020: Candidates preparing for VTU Semester exams must pass the Syllabus VTU. The VTU CBCS and Non-CBCS Syllabus and marking scheme will help you prepare for the upcoming semester exams conducted by Vishveswarai University of Technology (VTU). The curriculum for the 1st and 2nd semesters is common to all engineering streams. While for the 3rd, 4th, 5th, 6th, 7th and 8th Sem students will have to check the VTU Syllabus and Labeling Scheme for their respective engineering industries. In this article, we have provided you with VTU Syllabus and the LABELing Scheme PDF for free download. Read on to check out your program! Download VTU Syllabus for all semesteres Here VTU Syllabus 2020 Before we get into the details of the VTU curriculum, let's first have a brief overview of the university. University of Southern California Technical Education Council (AICTE) University Grants Commission (UGC) Affiliated Colleges218Janana Sangama Belgaum, Karnataka, IndiaOfficial Websitevtu.ac.in VTU Syllabus for B.E./ B.Tech. The VTU-Sillabus scheme is available on the official website for 2015-16, 2016-17 and 2018-19. In this article we have provided you with VTU Syllabus PDF for all semesters - 1st, 2nd, 3rd, 4th, 5th, 6th, 7th and 8th Sem and for all branches. Tabulated below the VTU curriculum for B.E./B.Tech. 1st to 8th semesters in various subjects: VTU Syllabus for B.E./B.Tech. 1st to 2nd semester (basic sciences) Students can download the latest VTU I and II Sem CBCS program from the table below. VTU Syllabus for B.E./B.Tech. 3rd to 8th semester (all affiliates) Students can download affiliate wise VTU CBCS Syllabus for the 3rd, 4th, 5th, 6th, 7th and 8th sem from the table below. About VTU Visvesvaraya University of Technology (VTU) Belgaum is named after the famous Indian engineer, scientist, statesman and Bharat Ratna recipient, Sir M. Visvesvaraya. VTU is one of India's leading and largest technology universities. It has 218 affiliated engineering colleges under its jurisdiction. A total of about 325,000 students participated in 35 UG and 94 PG disciplines. At the undergraduate level, VTU Belgaum offers undergraduate (B.E.) and B.Arch.courses. More than 4 engineering students study at various institutes related to the university. Admission to undergraduate engineering programs is provided through entrance exams such as JEE Main, KCET (B.E./B.Tech.) and NATA (B.Arch.). VTU Result 2020 Visvesvaraya University of Technology announces the result for all UG/PG CBCS and non-CBCS courses. Applicants can check the results of the semester and the revaluation of the VTU on the official website of the VTU - results.vtu.ac.in. The result of the VTU is announced for various courses, ea B.Tech/ B.E, M.Tech, MBA, MBA, B.Arch, M.Arc et al. you can check the VTU result here. Check out VTU 2019-20 Results Here We have now provided you with a VTU Syllabus PDF for all semesters. Download the curriculum and go through it to prepare for the upcoming semester exams. Contact the WTU last year issue documents and list down important topics. Explore these important topics soon and then go on to cover the rest of the topics according to the curriculum. We hope this article about the VTU curriculum has been helpful to you. If you have any enquiries or doubts regarding the VTU curriculum, contact us through the comments section below and we will be back to you soon. 8934 Views PART - I UNIT - 1Research Methodology: Introduction, Value Research, Research Goals, Research Types, Research Approaches, Value Research, Research Methods vs. Methodology, Research and Scientific Method, Research Process, Criteria of Good Research, Problems Faced by Researchers in India. Determining a research problem: research problem, choice of problem, need to identify the problem, technique, are involved in determining the problem. UNIT - 2 Literature Review: Place literature review in research, Bringing clarity and attention to the research problem, Improving research methodology, expanding the knowledge base in the field of research, incorporating contextual conclusions, review of literature, search for existing literature, review of selected literature, review of selected literature, development of theoretical basis, development of conceptual framework, writing about literature considered. Research Design: The meaning of research design, the need for design research, features of good design, important concepts related to research design, various research samples, the basic principles of experimental designs, important experimental designs. UNIT - 3 Design Sample Surveys: Sample Design: Introduction, Sampling Design, Sampling and Non-Selected Errors, Sampling Surveys vs. Census, Sample Sampling Types. Measuring and scaling: Qualitative and quantitative data, measuring scales classification, measurement scales kindness, measurement error sources, measurement tool development methods, scaling, scale classification bases, scale scaling, multidimensional scale, scale decision-making. Data collection: Introduction, experimental research and surveys, primary data collection, secondary data collection, selection of appropriate method of data collection, case study method. UNIT - 4Data Preparation: Data preparation process, some problems in preparation, missing values and emissions, types of analysis, statistics in studies. Descriptive Measures of the central trend, measures of variance, measures of skepticism, curtose, measures of relations, association in the case of attributes, other measures. UNIT - 5 Picks and statistical conclusion: conclusion: and statistics, sampling and not sampling Errors, Sampling Distribution, Degree of Freedom, Standard Error, Central Limit Theorem, Ultimate Population Correction, Statistical Inference. UNIT - 6 Hypothesis testing: Hypothesis, Basic concepts relating to hypothesis testing, hypothesis testing, test statistics and critical region, critical and decision-making rule, procedure for testing hypotheses, for the difference of two proportions, for the difference of two deviations, P-value approach, strength test, limitation of test hypothesis. Chi-square test: Test differences by more than two proportions, test independence attributes, test of kindness Fit, caution in using Chi Square Tests.UNIT - 7 Variance Analysis (ANOVA): ANOVA Technique, Basic ANOVA Principle, One Side ANOVA, Two Ways ANOVA, Latin - Square Design, Co-Dispersion Analysis, Assumptions in Co-Variance. , a simple model of linear regression, multilinelean regression model, problem of multicolinality, qualitative explanatory variables. Factor Analysis: Mathematical Framework, Important Factors Analysis Rotation in Factor Analysis, R - Type and q - Analysis of The Type Factor, Merit and Disadvantages of The Analysis Factor.UNIT - 9 Probability: Random Experiments, Sample Spaces, Event, Probability Concept, Probability Probability Probability, Probability Theorem, Probability Appointment, Conditional Probability, Theorems Random Variables, Discrete Probability Distribution, Distribution Functions for RandomVariables , graphic interpretations, joint distribution of independent random variables, variable change, distribution of probabilities of random variable functions, bundles, conditional distributions. UNIT - 10 Binomial Distribution, Properties of Binomial Distribution, , Poisson Distribution, Poisson Distribution Properties, Connection between Binomial and Poisson Distribution, Link Between Poisson and Normal Distribution, Hypergeomeric Distribution.Reference Books: (1) Methods and Methods of Research Methodology, C.R. Kothari, Gaurav Garg, New Age International Publishers,4th Edition, 2019. (2) Methodology research step-by-step guide for beginners, Ranjit Kumar, SAGE Publications Ltd, 3rd Edition, 2011. For Unit -2, Literature Review (3) Probability and Stats, Murray R. Spiegel, Schauma Laugh Series, McGraw Hill, 4th Edition, 2013. (For unit -9 and units - 10) VTU Sillabus Computer Science Engineering 4th semester: With the latest VTU Syllabus Computer Science and Engineering 4th semester students will learn chapters and concepts that will be covered in all subjects. Syllabus for VTU Computer Science and Engineering 4th Semester gives students a clear idea of the course structure and its objectives. Based on an assessment in computer science and engineering degrees, you can apply for better career opportunities. Check out VTU Syllabus for all affiliates and semesters in depth of knowledge in each topic of computer science and engineering 4th semester will also be useful to crack various competitive exams like gates. Here we provide you with a complete guide to VTU Syllabus Computer Science and Engineering 4th semester 2020 and marking schemes. VTU Syllabus Computer Science and Engineering 4th semester 2020 4th semester is an important stage for computer science and engineering. It is important to score more in computer science and engineering for future opportunities. To enhance your semester exam preparation, you must have computer science 4th Semester books and teaching materials, previous years paper questions along with the latest computer science 4th sem Syllabus. Before starting the full guide to VTU Syllabus Computer Science and Engineering 4th semester 2020, let's check the highlights of the VTU from the table below. VTU Belgaum Highlights Established 1998 Year Of AICTE Allegations, UGC, COA (Council of Architecture) Courses UG (35), PG (94), Ph.D. and Research (592 Departments) Quality Improvement Program (13) Official website www.vtu.ac.in Number of Students No. 325,000 Collaboration Bosch Rexroth AG-GermanyVirginia University of the Commonwealth University of California Deshde Foundation-Startup Center of India Electronics and Semiconductor Association IBM Asia Bengaluru Check out the latest program for VTU Computer Science Engineering 4th From Below. The 18MAT41 CIE course code marks 40 training hours/week (L:T:P) (2:2:0) SEE Notes 60 Credits 03 Exam Hours 03 Course Learning Goals: Provide insight into the application of complex variables, conformal mapping and special features arising in potential theory, quantum mechanics, thermal conduction and field theory. · Develop the distribution of probabilities of discrete, continuous random variables and the co-distribution of probabilities occurring in digital signal processing, design, and microwave engineering. Module-1 Complex Function Calculus: Overview of the function of complex variables, limits, continuity and various. Analytical functions: Cauci-Rimana equations in Cartesian and polar forms and consequences. Analytical Function Design: Milne-Thomson Problem Method. Modules-2 Conformal Transformations: Introduction. Discussion of transformations ≠: Bilian transformations- Problems. Integrated integration: Line, integral part of the complex theorem and integral formula and Koshi's problems. Module-3 Probability Distribution: A review of the basic probability theory. Random variables (discrete and continuous), probability/density functions. Binomial, Poisson, exponential and normal distribution-problems (no derivatives for medium and standard deviation)-Illustrative examples. Module-4 Statistical Methods: Correlation and Regression-Carl Pearson Correlation Ratio and Rank Correlation-Problem. Regression analysis - regression lines - problems. Fitting curve: Curve fitting by the method of the smallest square-setting of shape curves- Module-5 Joint probability distribution: Joint probability distribution for two separate random variables, expectation and coriating. Sampling theory: Introduction to sampling distribution, standard error, Type I and Type II errors. Test hypothesis on funds, t-student distribution, Chi-square distribution as a test for kindness fit. Course Results: At the end of the course, the student will be able to: Use the concepts of analytical function and complex potentials to solve problems arising in the theory of the electromagnetic field. · Use a conformal transformation and a complex integral that emerges in the theory of aerofolga, fluid flow visualization and image processing. · We use discrete and continuous probability distributions when analyzing probabilistic models that occur in the engineering field. · Use correlation and regression analysis to match the right mathematical model for statistics. · Create joint probabilities and demonstrate the validity of the hypothesis testing. Paper question template: The question paper will have ten complete questions bearing equal scores. · Each full question will be on 20 marks. · There will be two complete questions from each module (four sub-questions at most). Cl. No. Title of the book The name of the author/name publisher edition and the year of textbooks 1 Advanced Engineering Mathematics by E. Kreyszig John Wylie and Sons of the 10th Edition,2016 2 Senior Engineering Mathematics B.S. Grodal Hannah Publishers 44th Edition, 2017 3 Engineer Mathematics Srimanta Pal et al. Oxford University Press 3rd Edition,2016 Reference Books 1 Advanced Engineering Mathematics C. Louis C.Barrett McGraw-Hill 6th Edition 1995 2 Introductory Methods of Numerical Analysis S.S..Sastry Prentice Hall India 4th edition 2010 3 Senior Engineering Mathematics B.W. Raman McGraw-Hill 11th Edition,2010 4 Textbook Engineering Mathematics N. Bali and Manish Goyal Laxmi Publications 2014 5 Advanced Engineering Mathematics Chandrika Prasad and Rina Garg Hannah Publishing , 2018 Web links and video lectures: 1. 2. (MOOCs) 3. 4. VTU EDUSAT PROGRAM - The course code 18CS42 CIE notes 40 number of contact hours/week 3:2:0 SEE Marks 60 Total number of contact hours 50 exams Watch 03 CREDITS -4 Course Goals: This course (18CS42) will allow students to: Explain different computational problem solving techniques. · Use the appropriate method to solve this problem. · Describe the different methods of algorithm analysis. Module 1 Contact Watch Introduction: What is an algorithm? (T2:1.1), Algorithm Specification (T2:1.2), Analysis Framework (T1:2.1), Performance Analysis: Space Complexity, Time Complexity (T2:1.3). Asymptotic notations: Big-Oh notation (O), Omega (Ω), Theta notation (Japanese) and Small Notation (o), Mathematical analysis of non-recursive and recursive algorithms with examples (T1:2.2, 2.3, 2.4). Important types of problems: sorting, searching, line processing, scheduling issues, combinatorial problems. Basic data structures: stacks, queues, graphs, trees, sets and dictionaries. (T1:1.3,1.4). RBT: L1, L2, L3 10 Divide and Conquer Module 2: Common Method, Binary Search, Repetition Equation for Separation and Conquest, Search for Maximum and Low (T2:3.1, 3.3, 3.4), Merging Sorting, Fast Variety (T1:4.1, 4.2), S strassen Matrix Multiply (T2:3.8 Advantages), And Disadvantages. Reducing and conquering approach: Topological grade. (T1:5.3). RBT: L1, L2, L3 10 Module 3 Greedy Method: Common Method, Coin Change Problem, Backpack Problem, Timing Sequencing (T2:4.1, 4.3, 4.5). Minimum cost covering trees: Prima Algorithm, Cruscalia Algorithm (T1:9.1, 9.2). Single shortcut source: Dijkstra Algorithm (T1:9.3). The optimal problem of the tree: Huffman trees and codes (T1:9.4). Conversion and Conquest Approach: Heaps and Heaps Sort (T1:6.4). RBT: L1, L2, L3 10 Module 4 Dynamic Programming: General Method with Examples, Multi-stage Graphics (T2:5.1, 5.2). Transit Closure: Warshall Algorithm, All Pairs of Shortcuts: Floyd Algorithm, Optimal Binary Search Trees, Nopsak Problem ((T1:8.2, 8.3, 8.4), Bellman-Ford Algorithm (T2:5.4), Travel Sales Problem (T2:5.9), Reliability Design (T2:5.8). RBT: L1, L2, L3 10 Module 5 Rollback: General Method (T2:7.1), N-Kins Problems (T1:12.1), Subset Problem Amount (T1:12.1), Coloring Chart (T2:7.4), Hamilton Cycle (T2:7.5). Program and Boundary: Destination Problem, Travel Sellers Problem (T1:12.2), Problem 0/1 Knapsack (T2:8.2, T1:12.2): PROGRAM SOLUTION and related LC (T2:8.2), FIFO program and related solution (T2:8.2). NP-Complete and NP-Hard Problems: Basic Concepts, Non-10 Deterministic Algorithms, P, NP, NP-Complete and NP-Hard Classes (T2:11.1). RBT: L1, L2, L3 Course Results: Student will be able to : Describe computational solution to well-known problems such as search, sorting, etc. Assess the computational complexity of different an algorithm that uses appropriate design strategies to solve problems. The question document template: The question paper will have ten questions. · Each full question consisting of 20 marks from each module will be 2 complete questions (maximum four to the sub). · Each full question will have sub questions covering all the topics under the module. · Students will have to answer 5 complete questions by selecting one complete question from each module. Textbooks: 1. Introduction to Algorithm Design and Analysis, Ananias Levitin: 2nd edition, 2009. Pearson. 2. Computer Algorithms / SH, Ellis Horowitz, Satraj Sahni and Rajasekaran, 2nd Edition, 2014, 2014, Universities Press Reference Books: 1. Introduction to Algorithms, Thomas H. Kormen, Charles E. Leisterson, Ronald L. Rivest, Clifford Stein, 3rd Edition, PHI. 2. Design and analysis of algorithms, S. Sridhar, Oxford (Higher Education). Course code 18CS43 CIE notes 40 Number of contact hours/week 3:0:0 SEE Marks 60 Total number of contact hours 40 Exams Hours 03 CREDITS -3 Course goals: This course (18CS43) will allow students: Enter concepts and terminology, used in THE OS Explain threading and multi-read systems illustrate the synchronization of processes and the concept of dead end Enter memory and virtual memory management, file system and storage methods 1 Contact clock Introduction to operating systems, System structures: What operating systems do; The organization of the computer system; The architecture of the computer system; Operating system structure Operating system operations; Process management; Memory management; Storage management; Protection and security; Distributed system; Special purpose systems; Computing environments. Operating system services; User - operating system interface; System calls; Types of system calls; System programs; Designing and implementing an operating system; Operating system structure Virtual machines; Operating system generation; System download. The concept of the process management process; Process planning Process operations; Inter Communication Text Book 1: Chapter 1, 2.1, 2.3, 2.4, 2.5, 2.6, 2.8, 2.9, 2.10, 3.1, 3.2, 3.3, 3.4 RBT: L1, L2, L3 08 Module 2 Programming Multi-level: Overview; Multi-read models; Thread libraries Carving problems. Process Planning: Basic Concepts; Planning criteria; Planning algorithms; Planning with multiple processors Thread planning. Process Synchronization: Synchronization: a critical section issue; Peterson's decision; Synchronization equipment Semaphores; Classic synchronization issues; Monitors. Textbook 1: Chapter 4.1, 4.2, 4.3, 4.4, 5.1, 5.2, 5.3, 5.4, 5.5, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 RBT: L1, L2, L3 08 Module 3 Stupids: Stupids System model; Characteristics of the impasse; Methods for handling dead ends; cul-de-sacs; Avoiding deadlock; Detection and detection of deadlocks out of a dead end. Memory Management: Memory Management Strategies: Background; Replacement; Highlighting contiguous memory; Paging; The structure of the page table; Segmentation. Textbook 1: Chapter 7, 8.1 to 8.6 RBT: L1, L2, L3 08 Module 4 Virtual Memory Management: Background; Demand paging; Copy-on-the-record; Replacing a page Staff distribution; Thresh. File system, file system implementation: file system: File concept; Access methods The structure of the catalogue; Installation of the file system; File-sharing; Protection: Implementation of the file system: file system structure; Implementation of the file system; Implementation of the catalogue; Distribution methods; Free space management. Textbook 1: Chapter 91. 9.6, 10.1 to 10.5 RBT: L1, L2, L3 08 Module 5 Secondary Storage Structures, Protection: Massive Storage Structures; Disk structure Drive attachment Drive planning Drive management Space control swap. Protection: Protection goals, protection principles, domain protection, access matrix, access matrix, access control, access rights recall, opportunity-based systems. Example: Linux operating system: Linux history; Design principles; Core modules; Process management; Planning Memory management; File systems, input and output; Inter-media communication. Tutorial 1: Chapter 12.1 to 12.6, 21.1 to 21.9 RBT: L1, L2, L3 08 Course Results: Student will be able to : Demonstrate the need for OS and different types of OS Apply suitable management techniques to different resources Use CPU teams, memory, storage systems and files implement different OS concepts in use using thematic research Question Paper: The question paper will have ten questions. · Each full question consisting of 20 marks from each module will be 2 complete questions (maximum four to the sub). · Each full question will have sub questions covering all the topics under the module. · Students will have to answer 5 complete questions by selecting one complete question from each module. Textbooks: 1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagnier, Operating System Principles 7th Edition, Wiley-India, 2006 Handbooks: 1. Anne McHoes Ida M Fylnn, Operating System Understanding, Cengage Learning, 6th Edition 2. D.M Dhamdhere, Operating Systems: Conceptual Approach 3rd Ed, McGraw Hill, 2013. 3. P.C.P. Bhatt, Introduction to Operating Systems: Concepts and Practices 4th Edition, PHI (EEE), 2014. 4. William Stallings Operating Systems: Internal and Design Principles, 6th Edition, Pearson. Course Code 18CS44 CIE Notes 40 Number of Contact Hours/Week 3:0:0 SEE Marks 60 Total Number of Contact Hours 40 Exam Hours 03 CREDITS -3 Course Goals: This course (18CS44) VTU Syllabus Computer Science Engineering 4th Semester will allow students to understand the basics of systems on hardware components, selection methods, and the attributes of the built-in system. · The CONTROLLER of the ARM program, using various instructions Determine the applicability of the built-in system To understand the operating system in real time, used for the built-in system Module 1 Contact Watch microprocessors compared to microcontrollers, ARM Built-in Systems: RISC Design PHILOSOPHY, ARM Design Philosophy, Embedded System Equipment, Embedded System Software. THE basics of the ARM processor: Registers, Current Program Status Register, Pipeline, Exceptions, Interruptions and Vector Table, Basic Extensions Textbook 1: Chapter 1 - 1 - 1.1 to 1.4, Chapter 2 - 2.1 to 2.5 RBT: L1, L2 08 Module 2 Introduction to a set of ARM instructions : Instructions on data processing, Instructions on software, Instructions for interrupting software, Instructions for program registration status, Coor Coor Download Constant ARM programming using Assembly language: Assembly code writing, profiling and counting of cycles, planning instructions, distribution of registers, conditional execution, loop designs Text of The Book 1: Chapter 3:Sections 3.1 to 3.6 (Except 3.. 5.5. 2), Chapter 6 (Sections 6.1 to 6.6) RBT: L1, L2 08 Module 3 Embedded System Components: Built vs General Computing System, History of Built-in Systems, Classification of Built-in Systems , The main areas of application built-in systems, the purpose of built-in Systems Core of a Embedded System, including all types of processor/controller, memory, sensors, drives, LEDs, 7-segment LED display, stepper motor, keyboard, push button switch, communication interface (board and external types), built-in firmware, other system components. Textbook 2:Chapter 1 (Sections 1.2 to 1.6), Chapter 2 (Sections 2.1 to 2.6) RBT: L1, L2 08 Module 4 Built-in System Design Concepts: Characteristics and quality Attributes of embedded systems, Operational quality attributes, unfeasible quality attributes, built-in 08 application and domain-specific, hardware software co-design and modeling programs, built-in firmware design and design Text Book 2: Chapter-3, Chapter-4, Chapter-7 (Sections 7.1, 7.2 only), Chapter-9 (Sections 9.1, Section 9.1, 9.2, 9.3.1, only 9.3.2) RBT: L1, L2 Module 5 RTOS and IDE for Built-in System Design: Operating System Basics, Operating System Types, Task, Process and Streams (Only POSIX Threads with exemplary program), pre-empting threads, multi-processing and multitasking, task communication (without any program), problem synchronization tasks - Racing and dead end, concept of binary and counting semaphores (example Mutex without any program) How to choose RTOS, integration and testing of built-in hardware and firmware, built-in system development environment - unit (except Keil), Disassembler/decompiler, simulator, emulator and debugging techniques, debugging of target equipment, border scanning. Textbook 2: 2: (Sections 10.1, 10.2, 10.3, 10.4 , 10.7, 10.8.1.1, 10.8.1.2, 10.8.2,2, 10.10 only), Chapter 12, Chapter-13 (block chart to 13.1, 13.3, 13.4, 13.5, 13.6 only) RBT: L1, L2 08 Course results: Student will be able to : - Describe the architectural features and instructions of the microcontroller - Apply the knowledge received for programming for various ARM applications. The interface of external devices and v-vo with the ARM microcontroller. Interpret the main hardware components and the method of their selection based on the characteristics and attributes of the built-in system. Develop hardware/software approaches to joint firmware development and design. · Demonstrate the need for a real-time operating system for embedded system applications issue Of Paper Pattern: The questionnaire will have ten questions. · Each full question consisting of 20 marks from each module will be 2 complete questions (maximum four to the sub). · Each full question will have sub questions covering all the topics under the module. · Students will have to answer 5 complete questions by selecting one complete question from each module. Tutorials: 1. Andrew N Sloss, Dominic Symes and Chris Wright, MANAGEMENT of ARM Systems Developers, Elsevier, Morgan Kaufman Publishers, 2008. 2. Shibu K V, Introduction to Embedded Systems, Tata McGraw Hill Education, Private Limited, 2nd edition. Reference books: 1. Raghunandan. G.H, Microcontroller (ARM) and Embedded System, Cengage Training Publishing,2019 2. Insider Guide to ARM7-based microcontrollers, Hitex Ltd., 1st edition, 2005. 3. Steve Furber, ARM System-on-Chip

Architecture, Second Edition, Pearson, 2015. 4. Raj Kamal, Built System, Tata McGraw-Hill Publishers, 2nd Edition, 2008. The course code 18CS45 CIE notes 40 Number of contact hours/week 3:0:0 SEE Marks 60 Total Number of Contact Hours 40 Exams Watch 03 CREDITS -3 Course Goals: This course (18CS45) will allow students to explore the main features of object-oriented language and set up java JDK environment to create, debug and run simple Java programs. · Create multi-dark programs and event processing mechanisms. · Enter an event driven by graphic user interface (GUI) programming using applets and swings. Module 1 Contact Watch Introduction to Object-oriented Concepts: Structure Overview, Procedural-Oriented Programming System, Object-Oriented Programming System, Comparison of Object-Oriented Language with C, Console I/O, Variables and Reference Variables, Prototype Function, Function Overload. Class and Objects: Introduction, participant functions and data, objects and functions. Tutorial 1: Ch 1: 1.1 to 1.9 Ch 2: 2.1 to 2.3 RBT: L1, L2 08 Class Module and Objects (contd): Objects and Arrays, Namespaces, Nested Classes, Designers, Destructors. Introduction to Java: The Magic of Java: Code Set (JDK); Java Buzzwords, object-oriented programming; Simple java programs. Data types, variables and arrays, Operators, Control Statements. Textbook 1:Ch 2: 2.4 to 2.6Ch 4: 4.1 to 4.2 Textbook 2: Ch:1 Ch: 2 Ch:3 Ch:4 Ch:5 RBT: L1, L2 08 Module 3 Classes, Inheritance, Treatment of Exceptions: Classes: Classes Basics; Announcement of objects; Designers, that's the keyword, garbage collection. Inheritance: the basics of inheritance, the use of super, the creation of a multi-level hierarchy, the redefinition of the method. Exception Processing: Processing exceptions in Java. Textbook 2: Ch:6 Ch: 8 Ch:10 RBT: L1, L2, L3 08 Module 4 Packages and Interfaces: Packages, Access Protection, Import Packages. Lots of threaded programming: A lot of threaded programming: What are threads? How to make classes threaded; Expanding threads; Implementation runnable; Synchronization; Changing the state of the flow Related buffer problems, consumer problems of manufacturers. Textbook 2: CH: 9 Ch 11: RBT: L1, L2, L3 08 Module 5 Event Processing: Two Event Processing Mechanisms; The model of the delegation's event; Classes at events; Event sources; Event listener interfaces; Using the delegation event model; Adapter classes Internal classes. 08 Swings: Swings: Origin of swing; Two key Features of Swing; Components and containers; Swing packages; A simple Swing app Create a Swing Applet; Jlabel and ImageIcon; JTextField; Swing buttons; JTabbedpane; JScrollPane; JList; JComboBox; JTble. Textbook 2: Ch 22: Ch: 29 Ch: 30 RBT: L1, L2, L3 Course Results: Student Will Be able to : Explain Object-Oriented Concepts and JAVA. · Develop computer programs to solve real-world problems in Java. · Develop simple GUI interfaces for a computer program to interact with users and understand how gui is handled through events with a swing. The question document template: The question paper will have ten questions. · Each full question consisting of 20 marks from each module will be 2 complete questions (maximum four to the sub). · Each full question will have sub questions covering all the topics under the module. · Students will have to answer 5 complete questions by selecting one complete question from each module. Textbooks: 1. Sourav Sahay, object-oriented programming with THE SH, 2nd Ed, Oxford University Press,2006 2. Herbert Schildt, Java Full Link, 7th Edition, Tata McGraw Hill, 2007. Reference books: 1. Mahesh Bhave and Sunil Patekar, Programming with Java, First Edition, Pearson Education,2008, ISBN:9788131720806 2. Herbert Schildt, Full Reference C, 4th Edition, Tata McGraw Hill, 2003. 3. Stanley B. Lippmann, Jose LaJore, Premier, 4th edition, Pearson Education, 2005. 4. Rajkumar Buja, S Thamarasi selvi, xingchen chu, object-oriented programming with Java, Tata McGraw Hill Education Private 5. Richard Johnson, Introduction to Java Java and OOAD, CENGAGE Learning. 6. E Balagurus, Programming with Java A Primer, Tata McGraw Hill Companies. Mandatory note: Each institute organizes a bridge course on the NHS, either on vacation or at the beginning of even a semester for at least ten days (2 hours a day). Maintain a copy of the report for verification during your LIC visit. The Faculty can use open source tools to make learning and learning more interactive. Course Code 18CS46 CIE Signs 40 Number of Contact Hours / Week 3:0:0 SEE Signs 60 Total Number of Contact Hours 40 Exam Hours 03 CREDITS -3 Course Training Goals: This course (18CS46) from VTU Syllabus Computer Science Engineering 4th semester will allow students: Understand the technique of transferring digital data between two or more computers and the computer network, that allows computers to share data. · Explain the basics of data transmission and different types of computer networks; Demonstrate mid-access management protocols for reliable and noisy channels. · Expose wireless and wired LANs. Module 1 Contact Watch Introduction: Communications Data, Networks, Network Types, Internet History, Standards and Administration, Network Models: Storage Protocol, TCP/IP Protocol Suite, OSI Model, Introduction to Physical Layer-1: Data and Signals, Digital Signals, Transmission Disruption, Data Speed Limits, Performance. Textbook1: ch 1.1 to 1.5, 2.1 to 2.3, 3.1, 3.3 to 3.6 RBT: L1, L2 08 Module 2 Digital Transmission: Digital Digital Conversion (Line coding Only: Polar, Bipolar and Manchester Coding). Physical Layer-2: Analogue Digital Conversion (PCM only), Transmission Modes, Analog Transmission: Digital for Analog Conversion. Textbook1: Ch 4.1 to 4.3, 5.1 RBT: L1, L2 08 Module 3 Using bandwidth: Multiplexing and Spectrum Distribution, Switching: Introduction, Chain Switched Networks and Switching Packages. Error Detection and Fix: Introduction, Block Coding, Cyclical Codes, Cheksum, Textbook1: Ch 6.1, 6.2, 8.1 to 8.3, 10.1 to 10.4 RBT: L1, L2 08 Module 4 Data Link Management: DLC Services, Data Level Protocols, Point-to-Point Protocols (Phase Only). Media Access Management: Casual Access, Controlled Access and Sewerage, Introduction to the Data Layer: Introduction, Link-Layer Addressing, ARP IPv4 Address and Subnetization: Classroom and CIDR Address, DHCP, NAT Textbook1: Ch 9.1, 9.2, 11.1, 11.2 11.4, 12.1 to 12.3, 18.4 RBT: L1, L2 08 Module 5 Wired LANs Ethernet: Ethernet Protocol, Standard Ethernet, Fast Ethernet, Gigabit Ethernet and 10 Gigabit Ethernet, Wireless LANs: Introduction, IEEE 802.11 Project and Bluetooth. Other wireless networks: Cellular Telephony 08 Textbook1: Ch 13.1 to 13.5, 15.1 to 15.3, 16.2 RBT: L1, L2 Course Results: Student : Explain the different data components. · Explain the basics of digital technology and switching. · Compare and compare data reference level protocols. · Generalize IEEE 802.xx Standards Issue Paper Template: The question paper will have ten questions. · Each full question consisting of 20 marks from each module will be 2 complete questions (maximum four to the sub). · Each full question will have sub questions covering all the topics under the module. · Students will have to answer 5 complete questions by selecting one complete question from each module. Textbooks: 1. Behrouz A. Forouzan, Data Communications and Networking 5E, 5th edition, Tata McGraw-Hill, 2013. Reference Books: 1. Alberto Leon-Garcia and Indra Widjaja: Communication Networks - Basic Concepts and Key Architectures, 2nd Edition of Tata McGraw Hill, 2004. 2. William Stallings: Data and Computer Communication, 8th Edition, Pearson Education, 2007. 3. Larry L. Peterson and Bruce S. Davis: Computer Networks - System Approach, 4th Edition, Elsevier, 2007. 4. Nader F. World: Computer and Communication Networks, Pearson Education, 2007. The course code 18CSL47 CIE notes 40 number of contact hours/week 0:2:2 SEE Marks 60 Total number of laboratory contact hours 36 Exam hours 03 Credits - 2 Course training goals: This course (18CSL47) will allow students: Design and implement different algorithms in JAVA And use different design strategies to solve problems. · Measure and compare the performance of different algorithms. Descriptions (if any): Develop, develop, and implement these algorithms for the following java issues in the LINUX/Windows environment. Netbeans/ Eclipse or IntellijIdea Community Edition IDE tool can be used for design and demonstration. · The installation procedure for the necessary software must be demonstrated, conducted in groups and documented in a log. List of programs: 1. a. Create a Java class called Student with the following details as variables within it. (i) USN (ii) Name (iii) (iii) (iv) Phone Write a Java to create nStudent objects and print USN, Name, Program and Phoneof of these objects with appropriate titles. B. Write a Java program to implement the stack with arrays. Write Push, Pop, and Display methods to demonstrate your work. 2. a. The design of the superclass is called by the staff with details like StaffId, name, phone, salary. We expand this class by writing three sub classes: Teaching (domain, publishing), Technical (skills) and Contract (period). Write a Java program to read and display at least 3 staff objects in all three categories. B. Write a Java class called Customer to keep your name and date_of_birth. The date_of_birth format should be dd/mm/yyyy. Write methods for reading the data, dd/mm/yyyy'gt; about customers as well as qlt'name, dd, mm, yyyy'gt;display as using StringTokenizer, рассматривая символ делимитатора как /. 3. a. a. Написать программу Java для чтения</name,> </name,> </name,> integers a andb. Calculate a/b and print when b is not zero. Raise the exception when b is zero. B. Write a java program that implements multiple applications that consists of three threads. The first stream generates a random integrator for every 1 second; The second thread calculates the square of number and prints. The third thread will print the value of the cube number. 4. Sort this set of n integer elements using the quick sorting method and calculate the complexity of the time. Start the program for the various values of 5000 and take the time plugd for sorting. A plot timeline taken compared to a non-graphic sheet. Items can be read from a file or can be created using a random number generator. Demonstrate with Java how the divide and conquer method works, along with time complexity analysis: worst case, case, and best case. 5. Sort this set of n integer elements using the Merge Sort method and calculate the complexity of the time. Start the program for the various values of 5000, and record the time plugd for sorting. A plot timeline taken compared to a non-graphic sheet. Items can be read from a file or can be created using a random number generator. Demonstrate with Java how the divide and conquer method works, along with time complexity analysis: worst case, case, and best case. 6. Implementation in Java, 0/1 Knapsack problem using (a) dynamic programming method (b) greedy method. 7. From this top in a weighted connected graph, find the shortest paths to other verticals using the Dijkstra algorithm. Write the program to Java. 8. Find the minimum cost of Spanning Tree of this connected undirected graph using Kruskal'salgorithm. Use Union-Find algorithms in your program 9. Find the minimum cost of Spanning Tree of this connected undirected graph using the Prim algorithm. 10. Write Java programs to implement the Shortest Path problem with Floyd's algorithm. (b) Implementing the problem of traveling vendors using dynamic programming. 11. Design and implement in Java to find a subset of this set S s, S s, S2,.....,Sn) n positive integers, whose SUM is equal to this positive integer d. For example, if S No.1, 2, 5, 6, 8 and d'9, there are two solutions (1,2,6) and 1.8. Show the right message if this instance of the problem has no solution. 12. Design and implement in Java to find all Hamiltonian cycles in the connected undirected G n vertices graph, using the rollback principle. Laboratory results: A student should be able to: Design algorithms using appropriate design techniques (rough force, Dynamic programming, etc.) Implementation of various algorithms, such as assorted, graph-related, combinatory, etc., in a high-level language. · Analyze and compare the performance of algorithms with language functions. · Applying and implementing the methods studied to design algorithms and data structures to solve the solution Problems. Practical Examination: Distribution of Experiment o For laboratories with only one part: Students can choose one experiment from a batch with equal opportunities. o For laboratories with PART A and PART B: Students are allowed to choose one experiment from PART A and one experiment from PART B, with equal opportunities. · Changing the experiment is allowed only once and the marks allocated for the procedure to be zero of the modified part only. · Distribution of marks (course for change in accordance with university rules) (e) For laboratories with only one part - Procedure - Procedure - Execution - Viva-Voce: 15'70'15 - 100 marks f) For laboratories with PART A and PART B i. Part A - Procedure - Execution Part B - Procedure - Execution - Viva 9 - 42 - 9 - 60 Marks Course Code 18CSL48 CIE Signs 40 Number of Contact Hours / Week 0:2:2 SEE Signs 60 Total Number of Laboratory Contact Hours 36 Exam Hours 03 Credits - 2 Course Training Goals: This course (18CSL48) will allow students to develop and test the program using ARM7TDMI/LPC2148 Conducting experiments on the ARM7TDMI/LPC2148 scorecard using the evaluation version of the built-in tool/compiler C and Keil Uvision-4. Descriptions (if any): Program List: PART A Conducts the following experiments by writing the program using ARM7TDMI/LPC2148 using an evaluation board/simulator and the necessary software tool. 1. Write a program to multiply two 16-bit binary numbers. 2. Write a program to find the amount of the first 10 integer numbers. 3. Write a program to find factor numbers. 4. Write a program to add an array of 16 bit numbers and store a 32-bit result in internal RAM 5. Write a program to find a square number (from 1 to 10) using a table look. 6. Write a program to find the largest/smallest number in an array of 32 numbers. 7. Write a program to organize a series of 32 bit numbers in ascending/descent order. 8. Write a program to count the number and zeros in two consecutive memory locations. PART -B Conducting the following experiments on the ARM7TDMI/LPC2148 scorecard using the evaluation version of the built-in tool/compiler C and Keil Uvision-4. 9. Displaying the Hello World message using internal UART. 10. DC Motor interface and management. 11. Stepper engine interface and rotate it clockwise and counterclockwise direction. 12. Determine the digital output for this analog input using the internal ARM ADC controller. 13. DAC interface and generate triangular and square wave shapes. 14. Interface 4×4 keyboard and display key code on LCD. 15. Demonstrate the use of external interruption to switch ON/Off LED. 16. Display figures from 0 to F per 7-segment LED interface, with corresponding latency between laboratory results: Student should be able to: Develop and test the program using · Do the following experiments on the ARM7TDMI/LPC2148 scorecard using the estimated version of the built-in C tool/compiler and Keil Uvision-4. Practical Examination: Distribution of Experiment o For laboratories with only one part: Students can choose one experiment from a batch with equal opportunities. o For laboratories with PART A and PART B: Students are allowed to choose one experiment from PART A and one experiment from PART B, with equal opportunities. · Changing the experiment is allowed only once and the marks allocated for the procedure to be zero of the modified part only. · Distribution of signs (course for changing accoradance with university rules) (g) For laboratories, Having only one part - Procedure - Execution - Viva-Voce: 15'70'15 - Course Code 18MATDIP41 CIE Celebrates 40 Training Hours/Week (L:T:P) (2:1:0) SEE Marks 60 Credits 0 Exam Hours 03 Training Purposes Course: To provide concepts of major linear algebra, the second and higher order of differential equations, along with the methods used to solve them. · To give an idea of the elementary theory of probabilities and numerical methods. Module-1 Linear algebra: Introduction - the rank of the matrix on elementary line operations - Form of echelon. The sequence of the linear equation system is a method of eliminating Gauss. Eigen values and Eigen square matrix vectors. Problems. Module-2 Numerical Methods: Ultimate Differences. Interpolation/extrapolation using Newton's forward and backward differential formulas (statement only) -problems. Solving polynomial and transcendental equations - the methods of Newton-Rafson and Regula-Falsey (formula only) - Illustrative examples. Numerical integration: one-third of Simpson's rule and Weddle's (without evidence) rule. Module-3 Higher Order ODE: Linear differential equations of second and upper order equations with constant coefficients. Homogeneous/not homogeneous equations. Reverse differential operators. Special integral, limited R(x)eax, sin axe / braid axe for f (D)y and R (x). Module-4 Partial Differential Equations (PDE's): - Formation of PDE by eliminating arbitrary constants and functions. The solution is not a homogeneous PDE by direct integration. Homogeneous PDDs, which include derivatives only in relation to one independent variable. Module-5 Probability: Introduction. An example of space and events. Axioms of probability. Adding and multiplying theorems. Conditional probability, Bayes' theorem, problems. Course results: At the end of the course, the student will be able to: CO1: Solve system linear equations using matrix algebra. CO2: Apply knowledge about numerical methods in modeling and engineering tasks. CO3: Use analytical methods to solve higher-order differential equations. CO4: Classify partial differential equations and their precise methods. CO5: The use of elementary elementary theory and solve the related problems. Paper question template: The question paper will have ten complete questions bearing equal scores. · Each full question will be on 20 marks. · There will be two complete questions from each module (four sub-questions at most). · Each complete question will have a sub-question covering all the topics under the module. · Students will have to answer five complete questions by selecting one complete question from each module. Sl No Title Book Name Author/Name Publisher Edition and Year Textbook 1 Higher Engineering Mathematics B.S. Grewal Khanna Publishers 43rd Edition, 2015 Handbooks 1 Advanced Engineering Mathematics by E. Kreyszig by John Wylie and Sons of the 10th Edition, 2015 2 Engineering Mathematics N. Bali and Manish Goyal Laxmi Publishers 7th Edition, 2007 3 Engineering Mathematics Vol. I Rohit Khurana Cengage Learning 1st Edition, 2015 We reviewed the complete guide to VTU Syllabus Computer Science and Engineering 4th Semester 2020. Feel free to ask us any questions in the comments section below. Below.