**Details of e-contents prepared for online classes**

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| **Name of faculty** | **Name of subject** | **Topic name** | **Sub topic name** | **Types of e-content** | **Course name** | **Year of course** | **Link if uploaded anywhere** |
| **Purnendra kumar** | **TAFL** | Regular Expressions and Languages  **unit 2** | RegularExpressions, Transition Graph, Kleen’s Theorem, Finite Automata and Regular Expression- Arden’s theorem.  Algebraic Method Using Arden’s Theorem, Regular and Non-Regular Languages- Closure properties of Regular Languages.  Pigeonhole Principle, Pumping Lemma, Application of Pumping Lemma, Decidability- Decision properties, Finite Automata and Regular Languages.  Regular Languages and Computers, Simulation of Transition Graph and Regular language. | Pdf | **B.tech 2nd yr**  **[CSE]** | **2019-20** | Shared via whatsapp group |
| **Purnendra kumar** | **TAFL** | Regular and Non-Regular Grammars  **Unit 3** | Context Free Grammar(CFG)-Definition, Derivations, Languages, Derivation Trees and Ambiguity. | Pdf | **B.tech 2nd yr**  **[CSE]** | **2019-20** | Shared via whatsapp group |
| Regular Grammars-Right Linear and Left Linear grammars, Conversion of FA into CFG and Regular grammar into FA. |
| Simplification of CFG, Normal Forms- Chomsky Normal Form(CNF), Greibach Normal Form (GNF). |
| Chomsky Hierarchy, Programming problems based on the properties of CFGs. |
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| Push Down Automata and Properties of Context Free Languages  **Unit 4** | Nondeterministic Pushdown Automata (NPDA)- Definition, Moves, A Language Accepted by NPDA. | Pdf | **B.tech 2nd yr**  **[CSE]** | **2019-20** | Shared via whatsapp group |
| Deterministic Pushdown Automata(DPDA) and Deterministic Context free Languages(DCFL). |
| Pushdown Automata for Context Free Languages, Context Free grammars for Pushdown Automata. |
| Two stack Pushdown Automata, Pumping Lemma for CFL, Closure properties of CFL. |
| Decision Problems of CFL, Programming problems based on the properties of CFLs. |
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| **Purnendra kumar** | **TAFL** | Turing Machines and Recursive Function Theory  **Unit 5** | Basic Turing Machine Model, Representation of Turing Machines, Language Acceptability of Turing Machines, Techniques for Turing Machine Construction. | doc | **B.tech 2nd yr**  **[CSE]** | **2019-20** | Shared via whatsapp group |
| Modifications of Turing Machine, Turing Machine as Computer of Integer Functions, Universal Turing machine, Linear Bounded Automata. |
| Church’s Thesis, Recursive and Recursively Enumerable language, Halting Problem, Post’s Correspondance Problem, Introduction to Recursive Function Theory.  ] |
| **Purnendra kumar** | **DISTRIBUTED SYSTEMS** | **Agreement Protocols**  **Unit 3** | Introduction, System models, classification of Agreement Problem,Byzantine  agreement problem, Consensus problem. | Hand written notes [PDF] | **B.tech 4rth yr**  **[IT]** | **2019-20** | Shared via whatsapp group |
| Interactive consistency Problem, Solution to Byzantine  Agreement problem, Application of Agreement problem. |
| Atomic Commit in Distributed Database  system.  Distributed Resource Management: Issues in distributed File Systems. |
| Mechanism for buildingdistributed  file systems, Design issues in Distributed Shared Memory. |
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| **Purnendra kumar** | **DISTRIBUTED SYSTEMS** | **Failure Recovery in Distributed Systems**  **Unit 4** | Concepts in Backward and Forward recovery, Recoveryin  Concurrent systems, | Hand written notes  [PDF] | **B.tech 4rth yr**  **[IT]** | **2019-20** | Shared via whatsapp group |
| Obtaining consistent Checkpoints, Recovery in Distributed Database Systems. |
| Fault Tolerance: Issues in Fault Tolerance, Commit Protocols, |
| Voting protocols,  Dynamicvotingprotocols. |
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**REFERENCE BOOKS:**

* Peter linz.
* Singhal&Shivaratri, "Advanced Concept in Operating Systems", McGraw Hill