

Department: Computer Engineering

3rd Semester, Web Technologies

Lecture No.	Topic Name
Unit 1: Basics of WWW	
	06 Hrs
1	Internet and its applications, World Wide Web and its evolution, web page
2	web site (static and dynamic), Web Applications, URL, Web Browsers, Search Engine,
3	DCS
4	Proxy Server, web server,
5	HTTP, HTTP Request, HTTP Response
6	DCS

Unit 2: HTML5	
	13 Hrs
7	HTML5 structural elements: <html>, <head>, <body>
8	head elements : <title>, <meta>, <link>, body elements: <h1>..<h6>, <table>
9	DCS
10	<hr>, <p>, <a>, <div>, ,
11	, <iframe>; comments, semantic elements: <article>,
12	DCS
13	<aside>, <details>, <figcaption>, <figure>, <footer>,
14	<header>, <main>, <mark>, <nav>, <section>, <summary>, <time>;
15	DCS
16	HTML Lists: Ordered Lists, Unordered Lists, Definition Lists and Nested Lists,
17	Table elements: <table>, <thead>, <tbody>, <tfoot>, <tr>, <th>, <td>; using rowspan and colspan attributes
18	DCS
19	<button>, <datalist>, <fieldset>, <label>, <legend>, Form elements: <input>, <select>, <option>, <optgroup>, <textarea>,

Unit -3:: Cascaded Style Sheet (CSS)	
	11 Hrs
20	CSS overview-CSS rule, Selectors, CSS types: inline, internal
21	DCS
22	external; CSS box mode, CSS attributes: border, margin
23	padding, height, width, color, text-align, border-collapse, border spacing,
24	DCS
25	background-color, background-image, background-repeat,
26	background-attachment, background-position, text-decoration
27	DCS
28	letter-spacing, word-spacing, font-family, text-transform, font-style, font-size,
29	font-variant, position, display, float, list styles, table styles, pseudo classes,
30	DCS

Unit -4: : Client-Side Scripting using JavaScript		11 Hrs
31	JavaScript overview,<script> element, variable	
32	lifetime, scope of variables, operators,	
33	DCS	
34	control statements: if...else,	
35	switch...case; iteration: for,	
36	DCS	
37	while, do...while;	
38	linking external JavaScript file with an HTML document, built-in java script function	
39	DCS	
40	user-defined functions.	
41	variables	
Unit-5: : jQuery		07 Hrs
41	DCS	
42	Need of jQuery, Adding jQuery to a Webpage - using CDN or Local Copy;	
43	jQuery Selectors, jQueryEffects - hide(), show(),	
44	DCS	
45	toggle(), fadeIn(), fadeOut(), fadeTo(),	
46	fadeToggle(), animate();	
47	DCS	
48	ready(), load(), on(), off().jQueryEvents - blur(), click(), focus()	
		Jitender Mohan Sharma
		Lecturer Computer Application
		GMP Chamba
		
		Signature of HOD

Government Millennium Polytechnic, Chamba

Department: Computer Engineering

3rd Semester, Operating System

Lecture No.	Topic Name
	Unit 1: Overview of Operating System 12 hrs
1	Objectives and Functions of Operating Systems
2	Operating Systems Evolution - Batch Processing Systems
3	Multiprogramming Systems, Multiprocessing Systems,
4	DCS
5	Time Sharing Systems
6	Personal Computer Operating Systems
7	Handheld Computer Systems,
8	DCS
9	Real Time Systems
10	Distributed Systems
11	Operating System Architecture - Monolithic vs Microkernel
12	DCS

	Unit 2: Processes and Threads 12 hours
13	Process, Process States
14	Process Life Cycle, Process Control Block (PCB),
15	Threads, Multithreading,
16	DCS
17	Inter-process Communication, Process Synchronization
18	Race Condition
19	Critical Section Problem and its solutions
20	DCS
21	Deadlocks - Characterization, Necessary Conditions
22	Deadlock Avoidance
23	Prevention and Recovery
24	DCS

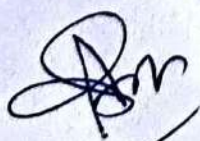
	Unit -3: CPU Scheduling 12 Hours
25	CPU Scheduler
26	Preemptive and Non-preemptive Scheduling
27	Scheduling Criteria - CPU utilisation
28	DCS
29	Throughput, Turnaround Time, Waiting Time, Response Time
30	Scheduling Algorithms- First Come First Serve,
31	Shortest Job First,
32	DCS
33	Shortest Remaining Time First

34	Priority Scheduling,
35	Round-Robin; Multiprocessor Scheduling
36	DCS
Unit -4: Memory Management	
	12 hours
37	Memory Hierarchy, Address Space
38	Address Translation, Memory Protection
39	Swapping, Contiguous Memory Allocation
40	DCS
41	Fixed Partition and Variable Partition Schemes
42	Memory Allocation Strategies, Fragmentation, Compaction
43	Non-Contiguous Memory Allocation
44	DCS
45	Paging, Segmentation, Virtual Memory
46	Demand Paging, Thrashing,
47	Page Replacement Policies
48	DCS

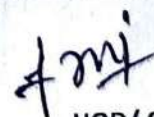
	Unit-5: Storage Management	08 Hours
49	Storage Devices - Magnetic Tapes	
50	Magnetic Disks, Optical Disks	
51	Flash Storage	
52	DCS	
53	Sequential and Direct Access	
54	Disk Scheduling - SCAN	
55	Disk scheduling - CSCAN	
56	DCS	

	Unit -6 : Linux Operating System	08 hours
57	Features of Linux OS	
58	GNU Project	
59	Linux Architecture - Kernel	
60	DCS	
61	System Calls Interface	
62	System Libraries	
63	Shell	
64	DCS	

Subject Teacher



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Lecturer Computer Engg.
GMPC Chamba (H.P.)



HOD/ OIC
Computer Engineering

Department: Computer Engineering
3rd Semester, Computer Programming using C

Lecture No.	Topic Name
	Unit 1: Introduction to Programming 8 hours
1	Program design tools: Algorithm
2	Flowchart , Pseudocode
3	Evolution of Programming Languages,
4	DCS
5	Programming Terminology - Program, Compiler, Interpreter
6	Linker, Source code, Libraries
7	Errors (Syntax and Semantic Error)
8	DCS

	Unit 2: Introduction to C Language 10 hours
9	Brief History of C Language
10	Features of C Language, Character Set
11	Identifiers, Keywords, Literals
12	DCS
13	Variables, Constants,
14	Structure of C Program
15	Comments, Preprocessor Directives
16	DCS
17	Data Types, Type Casting
18	Storage Classes

	Unit -3: Input / Output 08 Hours
19	Unformatted I /O functions
20	DCS
21	getchar(), purchar ()
22	gets() , puts()
23	Formatted I / O functions
24	DCS
25	format specifier
26	printf, scanf,
	Unit -4: Operators 10 hours
27	Arithmetic Operators, Expressions
28	DCS
29	Relational Operators, Logical Operators
30	Bitwise Operators,
31	Assignment Operators
32	DCS
33	Conditional Operator,

35	Associativity of Operators, Order and precedence of Operators
36	DCS

	Unit-5: Flow Control Statements	12 Hrs
37	Branching statements: if, if else	
38	Nested if, if else if ladder	
39	switch case	
40	DCS	
41	Unconditional goto	
42	break, continue, return	
43	Loops: while, do while	
44	DCS	
45	for loop	
46	Nested Loop	
47	Infinite Loop	
48	DCS	
	Unit 6: Array, structure, Unions and Pointer	10 hours
49	Definition of Array, Memory Representation	
50	One-Dimensional Arrays and Two-Dimensional Arrays:	
51	Declaration and Initialization; Enumeration	
52	DCS	
53	Strings, String Constants, Escape Sequences	
54	Functions - strlen(), strcmp()	
55	strcpy(), strncpy(), strcat(); Structures	
56	DCS	
57	Unions, Pointer: Declaration,	
58	Initialization, Assignment, Dynamic Memory Allocation: malloc(), calloc(), free	
	Unit 7: functions	06 hours
59	Definition of Function, Function Prototype	
60	DCS	
61	Formal and Actual Parameters,	
62	Function Call, Call by Value, Call by Reference	
63	Arrays as Function Argument, Recursion	
64	DCS	

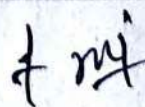
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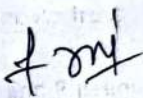


HOD/ OIC Computer Engg.

	Computer Engg. Department 3rd Semester
	Computer System Architecture Subject plan for the Session Aug.to Dec. 2026
	Unit 1: Introduction 4 Hours
1	Functional units of Digital Computer, Computer Organization, Computer Design
2	Computer Architecture, Von-Neumann and Harvard architecture, Bus Interconnection
3	Dot Clearing session
4	Evolution of Microprocessors, Concept of Microcomputer, Microcontroller and Embedded Systems
	Unit 2: Overview of Digital Electronics 10 Hours
5	Number systems: Decimal, Binary, Octal and Hexadecimal. Conversion from one number system to other number Syst.
6	Dot Clearing session
7	Signed Binary Numbers: Sign Magnitude Representation, One's Complement Representation and Two's Complement R
8	Binary Arithmetic: Addition, Subtraction, Binary Arithmetic using one's and Two's Complement
9	Dot Clearing session
10	Binary Arithmetic: Addition, Subtraction, Binary Arithmetic using one's and Two's Complement.
11	Fixed and Floating Point Numbers, Computer Codes: BCD, EBCDIC, ASCII.
12	Dot Clearing session
13	Fixed and Floating Point Numbers, Computer Codes: BCD, EBCDIC, ASCII.
14	Multiplication Algorithms - Hardware Implementation for Signed-Magnitude Data, Booth Multiplication Algorithm.
15	Dot Clearing session
	Unit 3: Digital Logic 10 Hours
16	Logic Gates: Symbols and Truth Table
17	Boolean Algebra, Logic Diagram, De Morgan's Theorem,
18	Dot Clearing session
19	Combinational Circuits: Block Diagram, Half Adder, Full Adder
20	Flip Flop: SR, D Flip Flop and
21	Dot Clearing session
22	J K Flip Flop, Example of a sequential circuit
23	Decoder & Encoder: 3 to 8
24	Dot Clearing session
25	Multiplexer & De Multiplexer: 4 to 1 line
	Unit 4: Basic Architecture of Microprocessor 8085 8 Hours
26	Basic features of 8085 Microprocessor,
27	Block Diagram of 8085 Microprocessor
28	Dot Clearing session
29	Functions of various blocks
30	Concept of Buses, Bus Multiplexing and De-multiplexing
31	Dot Clearing session
32	Status Flags, Addressing Modes
33	and Interrupts
	Unit 5: Central Processing Unit : 8 Hours
34	Dot Clearing session

35	Major Components of CPU, General Register Organization, Control Word
36	Stack Organization Register and Memory Stack.
37	Dot Clearing session
38	Reverse Polish Notation and Evaluation of Arithmetic Expressions
39	Instruction formats – Three Address Instructions, Two Address Instructions, One Address Instructions, Zero Address Instructions
40	Dot Clearing session
41	Brief Introduction to RISC and CISC Processors, Concept of Parallel Processing and Pipelining.
	Unit 6: Memory Organization
42	Components of memory hierarchy 8 Hours
41	Dot Clearing session
42	main memory, auxiliary memory and cache memory, Introduction to Associative Memory,
43	Cache Memory - Locality of Reference, Hit Ratio, Writing into Cache - Write Through, Write Back,
44	Dot Clearing session
45	Input-Output Interface –Purpose, I/O Versus Memory Bus
46	Isolated versus Memory-Mapped I/O.
47	Dot Clearing session
48	Isolated versus Memory-Mapped I/O.


 Rajni Devi
 Sr. Lect. Comp. Engg.


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COMPUTER ENGINEERING
Semester - V
COPC301 (Introduction to e - Governance)
Subject plan for the Session Aug – Dec 2026

Lecture No.	Topic
	UNIT 1 (12hrs.)
1	Exposure to emerging trends in ICT for development,e-Governance
2	Artificial Intelligence (AI), Cloud Computing, Internet of Things (IoT)
3	Machine Learning (ML), Edge Computing, CyberSecurity, Big Data Analytics
4	DCS
5	Augmented Reality (AR) and Virtual Reality (VR), Ethical and Responsible AI
6	Understanding of design of e-Government projects
7	Understanding the implementation of e-Government projects
8	DCS
9	e-Governance Lifecycle
10	Initiation, Planning, Design, Development, Testing
11	Implementation, Maintenance, Monitoring, Upgradation, Sunseting
12	DCS
	UNIT 2 (12hrs.)
13	Need for Government Process Re-engineering (GPR)
14	Objectives of GPR
15	National e-Governance Plan(NeGP) for India
16	DCS
17	Key points of NeGP
18	Objectives of NeGP
19	Components, Impact, Evaluation of NeGP
20	DCS
21	SMART Governments
22	Thumb Rules in Governance
23	Importance of SMART Governments and Thumb Rules
24	DCS
	UNIT 3 (16hrs.)
25	Architecture and models of e-Governance
26	Centralized Model, Distributed Model, Networked Model
27	Cloud Computing Model, Service-Oriented Architecture (SOA), Mobile-First Model, Digital Platforms and Open Data
28	DCS
29	Public Private Partnership (PPP)
30	Need for Innovation and Change Management in eGovernance
31	Critical Success Factors
32	DCS
33	Major issue including corruption
34	Resistance for change
35	Addressing resistance to change in eGovernance requires a multifaceted approach
36	DCS
37	e-Security (Electronic Security)
38	Key Elements of e-Security
39	Cyber Laws
40	DCS
	UNIT 4 (16hrs.)

41	Focusing on Indian initiatives and their impact on citizens
42	Initiatives in India
43	Impact on Citizens
44	DCS
45	Sharing of case studies to highlight best practices in managing e-Governance projects in Indian context
46	Key Takeaways from the case studies
47	Visits to local e-governance sites (CSC)
48	DCS
49	Visits to local e-governance sites (eSeva)
50	Visits to local e-governance sites (Post Office)
51	Visits to local e-governance sites (Passport Seva Kendra)
52	DCS
53	Learning Objectives by visiting e-government sites
54	Sharing of case studies in managing e-Governance projects
55	Learning's from the different case studies
56	DCS
	UNIT 5 (8hrs.)
57	Mini Projects by students in groups
58	Evaluation of various e-Governance project
59	Selection of e-Governance Projects
60	DCS
61	Research and Analysis from Projects
62	Data Collection and Analysis, Presentation and Recommendations
63	Reflection and Conclusion, Benefits of Mini Projects
64	DCS

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Department: Computer Engineering

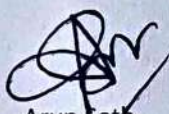
5th Semester, Web Programming

Lecture No.	Topic Name
Unit 1: Dynamic Websites Basics 8 Hrs	
1	Review of HTML5, CSS and Javascript,
2	HTTP, HTTP Request, HTTP Response
3	DCS
4	URL, Working of Web Servers and Web Browsers
5	Static and Dynamic Websites, Web Applications
6	DCS
7	Form Data submission methods - GET and POST
8	HTTP Sessions, HTTP cookies
Unit 2: Introduction to PHP 10 Hrs	
9	DCS
10	Origin of PHP, Advantages of PHP, Working of PHP
11	Embedding PHP code in Webpages, LAMP stack
12	DCS
13	Install and Configure PHP environment, PHP script
14	PHP syntax, Statements, comments, Variables, naming variables
15	DCS
16	Variable scope, Constants, echo, print statements, PHP Data types, String Literals
17	Single and Double Quoted Strings, Operators, PHP control statements, PHP arrays
18	DCS
Unit -3: PHP Functions 8 Hrs	
19	PHP standard Library functions: String Functions
20	htmlspecialchars(), ltrim(), rtrim(),
21	DCS
22	trim(),strtoupper(), strtolower(), explode(), implode()
23	strlen(), strcmp(),strpos(); Math Functions –sqrt()
24	DCS
25	ceil(), floor(), log(), pow(), sin(), cos(), tan()
26	User Defined functions
Unit -4: PHP Form Processing 10 Hrs	
27	DCS
28	HTML form element, action and method attribute,submit and clear button,
29	Form elements, name and id attribute, Hidden Input
30	DCS
31	Client side form validation, PHP superglobals - \$GLOBALS, \$_GET
32	PHP superglobals - \$_POST, \$_SERVER, \$_REQUEST

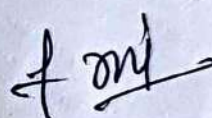
33	DCS
34	PHP superglobals \$_FILES, \$_ENV, \$_SESSION, \$_COOKIE
35	Server side validation, Handling uploaded files
36	DCS

	Unit-5 Using MySQL Databases in PHP	12 Hrs
37	Basic Database concepts	
38	Database, table, Column types, Constraints	
39	DCS	
40	Connecting PHP to MySQL	
41	Executing simple SQL statements - Insert, Update	
42	DCS	
43	Executing simple SQL statements - Delete and select	
44	Retrieving and Processing Query results	
45	DCS	
46	mysqli_real_escape_string functions	
47	Handling MySQL errors	
48	DCS	

Subject Teacher



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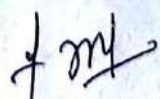
Computer Department 5th Semester

Software Engineering Subject plan for the Session August 2026

Lecture NO	Topic NO
Unit-1 : Introduction to Software Engineering(06 Hrs) 10 Marks	
1	Software Overview: Definition, Characteristics
2	Software Evolution; Software Paradigms Software Development Paradigm
3	Software Design Paradigm and Programming Paradigm.
4	DCS
5	Software Engineering: Definition, Need of Software Engineering
6	Emergence of Software Engineering.
7	Notable Changes in Software Development Practices
Unit-2 : Software Development Life Cycle and Models(10 Hrs) 20 Marks	
8	DCS
9	Software Development Life Cycle Activities: Communication
10	Requirement Gathering, Feasibility Study
11	System Analysis, Software Design
12	DCS
13	, Coding, Testing, Integration
14	Implementation and Operation and Maintenance
15	Software Development Life Cycle Models : Classical Waterfall Model
16	DCS
17	Prototype Model, Rapid Application Model
18	Model, Spiral Model,
19	Comparison of Different Life Cycle Models
20	DCS
21	Selection Criteria of an Appropriate Life Cycle Model for a Project.
Unit-3 : Software Cost Estimation (08 Hrs) 12 Mark	
22	Metrics used for Project Size Estimation
23	Metrics used for Project Size Estimation
24	DCS
25	Project Estimation Techniques
26	Project Estimation Techniques
27	Empirical
28	DCS
29	COCOMO Estimation Techniques.
30	COCOMO Estimation Techniques.
31	COCOMO Estimation Techniques.
32	DCS

	Unit-4 : Software Requirement Analysis and Specification(10 Hrs) 20 Marks
33	Software Requirements: Goal of the Requirements Analysis
34	Specification Phase
35	Types of Requirements - Functional Requirements
36	DCS
37	Non-Functional Requirements
38	User Interface Requirements;
39	Requirement Elicitation Process: Requirements Elicitation
40	DCS
41	Organizing Requirements, Negotiation
42	Discussion and Documentation; Requirement Elicitation Techniques: Interviews
43	Surveys, Questionnaires, Brainstorming, Requirements Analysis
44	DCS
45	Software Requirements Specification (SRS) Document, User of SRS Document, Characteristics of a Good SRS Document.
	Unit-5 : Software Design (08 Hrs) 14 Marks
46	Software Design Overview: Goals and Outcome of Software Design Phase
47	Characteristics of a Good Software Design
48	DCS
49	Cohesion and Coupling
50	Software Design Levels: Architectural Design
51	High-level Design and Detailed Design; Software Analysis and Design Tools (Introduction Only)
52	DCS
53	Data Flow Diagram, Structure Charts. Software Design Strategies:
54	Structured Design, Function Oriented Design,
55	Software Design Approaches: Top Down Design, Bottom Up Design
	Unit-6 :Software Coding(06 Hrs) 10 Marks
56	Software Coding Overview: Goal of Software Coding Phase
57	Coding Standards and Guidelines
58	Code Reviews: Code Walkthrough
59	DCS
60	Code Inspection,Clean Room Testing
61	Software Documentation: Internal Software Documentation and External Software Documentation
	Unit-7 : Software Testing(08 Hrs) 14 Marks
62	Software Testing Overview: Goal of Software Testing Phase
63	Software Verification versus Software Validation
64	Testing Activities,Software Testing Approach


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Department: Computer Engineering

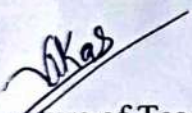
5th Semester, FOSS (Free and Open Source Software)

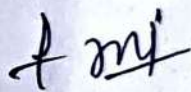
Lecture No.	Topic Name
	Unit 1: Open Source Software 08 Hrs
1	Open Source Software (OSS), OSS advantages
2	Free Software, Free and Open Source Software
3	DCS
4	FOSS Licensing Models
5	Introduction to Popular FOSS Software - Linux
6	DCS
7	LibreOffice, LibreOffice,
8	VLC Media Player, Mozilla Firefox
	Unit 2: Introduction to Linux 08 Hrs
9	DCS
10	Linux - History
11	Features, Applications
12	DCS
13	Distributions, Linux Architecture
14	Kernel, Boot Loader,
15	DCS
16	Shell, Graphical User Interface, WSL
	Unit -3:: Linux File System 08 Hrs
17	FHS, Rules for Naming Files and Directories
18	DCS
19	File Types, Links - Hard and Soft, Linux File
20	Management Commands - cat, touch, head, tail, cp
21	DCS
22	rm, mv, more, less, pwd, mkdir, rmdir, ls, cd, chmod, Use of Wildcard Characters
23	Standard Output and Standard Error Files; Pipes, Filters and Redirection, Standard Input,
24	DCS
	Unit -4: : Basic Linux System Management 08 Hrs
25	Users and Groups, Linux Super User, Primary and Secondary Groups
26	User and Group Management Commands - groupadd, groupdel, groupmod
27	DCS
28	groups, useradd, userdel, usermod, users, File Permissions, File Permission Commands - chmod
29	chown, chgrp; Process, Foreground and Background Processes, Daemon, init Process
30	DCS

Semester - V
ITOE301 (Cyber Laws & Ethics)
Subject plan for the Session Aug – Dec 2026

Lecture No.	Topic
Unit 1: Cyber Ethics & Etiquettes (16hrs.)	
1	History of the Internet
2	Major Applications of the Internet - Email, WWW
3	Social Media(Facebook, Instagram, Whats app etc)
4	DCS
5	Online Payment, Online Gaming
6	Digital Footprints
7	Cyberworld, Digital Society and Netizen
8	DCS
9	Net Etiquettes
10	Cyber Ethics
11	Challenges and Importance of Cyber Ethics
12	DCS
13	Impact of the Internet on Society
14	Impact of Digital Technologies on Health
15	Government Guidelines and Digital Media Ethics Code
16	DCS
Unit 2: Basics of Cybersecurity (16hrs.)	
17	Need for Cybersecurity
18	Challenges in Cybersecurity
19	Cybersecurity Framework
20	DCS
21	Cybercrime - Hacking, Phishing
22	Fraud Emails, Identity Theft
23	Ransomware, Cyber Stalking/ Harassment
24	DCS
25	Cyberbullying, Denial-of-Service (DoS) Attacks
26	Cyber Terrorism, Cyber Defamation
27	Combating and Preventing Cyber Crime
28	DCS
29	Prevention from Cybercrime using self-regulation
30	National Cyber Security Strategy
31	Challenges in Implementing a National Cyber Security Strategy
32	DCS
Unit 3: Intellectual Property Right (16hrs.)	
33	Intellectual Property Right (IPR)
34	Data Protection
35	Right to Privacy
36	DCS
37	Copyright and their Scopes
38	Patent and their Scopes
39	Trademark and their Scopes
40	DCS
41	Violation of IPR
42	Plagiarism

44	DCS
45	Trademark Infringement
46	Types of Trademark Infringement
47	Protecting Your Trademark
48	DCS
	Unit 4: Cyber Laws in India (16hrs.)
49	Cyber Laws: Navigating the Digital World
50	Key Areas of Cyber Law
51	Importance of Cyber Laws
52	DCS
53	Major Provisions for Cybercrime under Indian Penal Code (IPC)
54	Indian IT Act-2000 (Sections 65, 66, 67, 69)
55	Digital Personal Data Protection Act 2023
56	DCS
57	Intellectual Property Rights
58	Patent Law
59	Copyright Law
60	DCS
61	Digital Signatures
62	Working of Digital Signatures
63	Key Benefits and Uses of Digital Signatures
64	DCS


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