



ANALOG ELECTRONICS

ELECTRICAL ENGINEERING

Lecture Information

Lecture 00	How to use PD-GD course for Analog Electronics ?	00:44:00
------------	--	----------

Chapter 01 ► BJT Biasing

Lecture 01	Introduction to BJT	00:28:28
Lecture 02	Symbolic Representation of BJT	00:24:39
Lecture 03	Important points of BJT	00:09:03
Lecture 04	Order of Cross-sectional area	00:04:51
Lecture 05	BJT Configuration	00:27:36
Lecture 06	AC & DC Analysis of BJT	00:21:40
Lecture 07	Feedback Bias Transistor	00:25:59
Lecture 08	Voltage Divider Bias	00:12:50
Lecture 09	Workbook Questions (Q1-Q2)	00:19:11
Lecture 10	Workbook Questions (Q3-Q5)	00:28:47
Lecture 11	Workbook Questions (Q6-Q7)	00:15:58
Lecture 12	Workbook Questions (Q8-Q11)	00:25:01

Chapter 02 ► Region of BJT

Lecture 01	Introduction of Region of Transistor	00:33:27
Lecture 02	Region Assuming Saturation Region	00:13:38

Lecture 03	Workbook Questions (Q1–Q3)	00:36:42
Lecture 04	Workbook Questions (Q4–Q5)	00:19:37
Lecture 05	Workbook Question (Q6)	00:15:33
Lecture 06	Workbook Question (Q7)	00:53:47
Lecture 07	Common Data Question (Q8–Q12)	00:32:04

Chapter 03 ► MOSFET Biasing

Lecture 01	Introduction to MOSFET	00:12:01
Lecture 02	Characteristics of MOSFET	00:11:23
Lecture 03	Question Based on MOSFET Biasing	00:10:21

Chapter 04 ► Current Mirror Circuit

Lecture 01	Introduction to CMC	00:17:22
Lecture 02	Concept of CMC	00:17:17
Lecture 03	CMC for High Value of Beta	00:27:06
Lecture 04	MOSFET CMC	00:05:29
Lecture 05	Widlar CMC	00:11:12
Lecture 06	Wilson Current Mirror Circuit	00:11:52
Lecture 07	Multiple–Copy CMC	00:08:04
Lecture 08	Workbook Questions (Q1–Q6)	00:20:56

Chapter 05 ► Thermal Stabilization and Compensation Technique

Lecture 01	Concept of Operating Point of Transistors	00:43:09
Lecture 02	Concept of Stability Factor s , s' and s''	00:34:41
Lecture 03	Fixed Bias Circuit of Transistor	00:15:09
Lecture 04	Questions Based on Fixed Bias Circuit of Transistor	00:27:35
Lecture 05	Collector Feedback Bias Circuit	00:13:49
Lecture 06	Questions Based on Collector Feedback Bias Circuit	00:18:40
Lecture 07	Voltage Divider Bias or Self Bias	00:13:28
Lecture 08	Questions Based on Voltage Divider Bias or Self Bias	00:49:25
Lecture 09	Emitter Bias or Self Bias	00:20:20
Lecture 10	Bias Compensation Technique	00:22:17
Lecture 11	Comparison of Stability factor of Voltage Divider Bias & ..	00:22:37
Lecture 12	Thermal Runaway	00:12:09
Lecture 13	Thermal Resistance	00:34:36
Lecture 14	Derating Factor	00:11:42
Lecture 15	AC & DC Load Line of a Voltage DividerCircuit	00:36:16

Chapter 06 ► Operational Amplifier

Lecture 01	Introduction to Op–Amp	00:13:35
Lecture 02	Symbolic Representation	00:13:56
Lecture 03	Transfer Characteristics of Op–Amp	00:27:57
Lecture 04	Comparator Circuit	00:26:33
Lecture 05	Zero Crossing Detector	00:10:34
Lecture 06	VGC (Virtual Ground Concept)	00:40:29
Lecture 07	Ideal Non–inverting Op–Amp	00:12:12
Lecture 08	Ideal Inverting Op–Amp	00:12:25
Lecture 09	Workbook Questions (Q1–Q3)	00:37:27
Lecture 10	Adder	00:19:14
Lecture 11	Special Case of Adder	00:05:53
Lecture 12	Subtractor	00:18:56
Lecture 13	Special Case of Subtractor	00:09:44
Lecture 14	Workbook Questions (Q4–Q7)	00:22:07
Lecture 15	Workbook Questions (Q8–Q11)	00:23:49
Lecture 16	Workbook Questions (Q12–Q14)	00:13:16
Lecture 17	Introduction to Schmitt Trigger Circuit	00:22:38
Lecture 18	Schmitt Trigger Case–1	00:34:29
Lecture 19	Transfer Characteristics (Case–1)	00:10:25
Lecture 20	Schmitt Trigger Case–2	00:37:21
Lecture 21	Schmitt Trigger Case–3	00:28:31
Lecture 22	Conclusion of Schmitt Trigger	00:07:23
Lecture 23	Special Case of Schmitt Trigger	00:22:02
Lecture 24	Workbook Questions (Q15–Q17)	00:17:17
Lecture 25	Workbook Questions (Q18–Q20)	00:29:22
Lecture 26	Workbook Questions (Q21–Q22)	00:06:48
Lecture 27	Ideal Integrator Circuit	00:26:07
Lecture 28	Frequency Response of Ideal Integrator Circuit	00:11:03
Lecture 29	Practical Integrator Circuit	00:16:47
Lecture 30	First Order Low Pass Filter	00:28:48
Lecture 31	First Order High Pass Filter	00:12:21
Lecture 32	Practical integrator as L.P.F	00:18:27
Lecture 33	Unity Gain Frequency	00:21:27
Lecture 34	Ideal Differentiator Circuit	00:17:08
Lecture 35	Practical Differentiator Circuit	00:13:52
Lecture 36	Integrator and Differentiator	00:18:40
Lecture 37	Modified Practical Differentiator Circuit	00:22:01
Lecture 38	Concept of Bandpass and Bandstop Filter	00:16:16
Lecture 39	Filter Analysis using Transfer Function (Part–1)	00:11:48

Lecture 40	Filter Analysis using Transfer Function (Part-2)	00:25:20
Lecture 41	Filter Analysis of RLC Circuit	00:10:50
Lecture 42	All Pass Filter using L.P.F	00:27:48
Lecture 43	All Pass Filter using H.P.F	00:20:46
Lecture 44	Example 1 (Active Filter)	00:11:42
Lecture 45	Example 2 (Active Filter)	00:11:58
Lecture 46	Example 3 (Active Filter)	00:14:07
Lecture 47	Example 4 (Active Filter)	00:09:45
Lecture 48	Example 5 (Active Filter)	00:07:24
Lecture 49	Example 6 (Active Filter)	00:05:54
Lecture 50	Example 7 (Active Filter)	00:04:10
Lecture 51	Example 8 (Active Filter)	00:17:06
Lecture 52	Example 9 (Active Filter)	00:10:28
Lecture 53	Example 10 (Active Filter)	00:12:41
Lecture 54	Example 11 (Active Filter)	00:09:52
Lecture 55	Example 12 (Active Filter)	00:07:21
Lecture 56	Example 13 (Active Filter)	00:08:37
Lecture 57	Workbook Questions (Q23–Q26)	00:23:42
Lecture 58	Workbook Questions (Q27–Q30)	00:30:13
Lecture 59	Workbook Questions (Q31–Q33)	00:30:59
Lecture 60	Workbook Questions (Q34–Q35)	00:42:35
Lecture 61	Introduction to Multivibrator	00:12:52
Lecture 62	Working of AstableMultivibrator	00:45:40
Lecture 63	Calculation of ON Time, OFF Time and Frequency	00:18:20
Lecture 64	Modified AstableMultivibrator	00:11:39
Lecture 65	Workbook Questions (Q36–Q37)	00:12:48
Lecture 66	Working of MonostableMultivibrator	00:29:14
Lecture 67	Calculation of Pulse Width	00:11:05
Lecture 68	Workbook Questions (Q38–Q39)	00:18:09
Lecture 69	Workbook Questions (Q40–Q41)	00:42:30
Lecture 70	Logarithmic Amplifier	00:16:36
Lecture 71	Anti-logarithmic Amplifier	00:14:44
Lecture 72	Designing of Multiplier Circuit	00:05:39
Lecture 73	Designing of Divider Circuit	00:04:57
Lecture 74	Workbook Questions (Q42–Q43)	00:14:27
Lecture 75	Clamper Circuit Using Op–Amp	00:48:43
Lecture 76	AC Parameter of Op–Amp	00:06:17
Lecture 77	Common Mode Rejection Ratio	00:21:07
Lecture 78	CMRR for Subtractor Circuit	00:24:06
Lecture 79	Condition for Zero Noise Gain	00:06:31
Lecture 80	Workbook Questions (Q44–Q47)	00:25:49

Lecture 81	Slew Rate	00:20:23
Lecture 82	Slew Rate Distortion	00:13:14
Lecture 83	Workbook Questions (Q48–Q51)	00:10:40
Lecture 84	DC Parameters of Op–Amp	00:13:28
Lecture 85	Effect of Input Bias Current	00:12:30
Lecture 86	Effect of Input Offset Current	00:19:14
Lecture 87	Effect of Input Offset Voltage	00:15:06
Lecture 88	Workbook Questions (Q52–Q55)	00:09:04
Lecture 89	Workbook Questions (Q56–Q58)	00:08:09
Lecture 90	Precision Rectifier	00:19:38
Lecture 91	Non–inverting Precision half–wave Rectifier (Part–1)	00:35:43
Lecture 92	Non–inverting Precision half–wave Rectifier (Part–2)	00:24:53
Lecture 93	Inverting Precision half–wave Rectifier	00:38:47
Lecture 94	Concept of Full Wave Rectifier	00:13:00
Lecture 95	Precision Full Wave Rectifier	00:19:55
Lecture 96	Modified Precision Full Wave Rectifier	00:33:19
Lecture 97	Workbook Questions (Q59–Q62)	00:23:52
Lecture 98	Differential Amplifier (DC Analysis)	00:29:49
Lecture 99	Differential Amplifier (AC Analysis)	00:27:56
Lecture 100	Instrumentation Amplifier	PDF

Chapter 07 ► Diode Equivalent Circuit

Lecture 01	Syllabus Overview of Analog Electronics	00:16:30
Lecture 02	Basic Diode Operation	00:20:03
Lecture 03	Non Ideal Diode Operation	00:22:23
Lecture 04	Example to Understand Diode Operation	00:32:14
Lecture 05	Open Circuit Test on Diode	00:11:09
Lecture 06	Example on Open Circuit Test	00:14:20
Lecture 07	Short Circuit Test With Example	00:25:18
Lecture 08	Introduction to Diode Equivalent Circuit	00:25:53
Lecture 09	Non Linear Model of Diode Equivalent Circuit	00:06:07
Lecture 10	Practical Model of Diode Equivalent Circuit	00:14:19
Lecture 11	Constant Voltage Drop Model of Diode Equivalent Circuit	00:03:50
Lecture 12	Piece wise Linear Model of Diode Equivalent Circuit	00:05:48
Lecture 13	Ideal Model of Diode Equivalent Circuit	00:09:32
Lecture 14	Small Signal (AC) Model of Diode (Part 1)	00:52:11
Lecture 15	Small Signal (AC) Model of Diode (Part 2)	00:41:09
Lecture 16	Example on Equivalent Circuit Model	00:16:04
Lecture 17	Workbook Questions 1–4	00:49:02

Lecture 18	Workbook Questions 5–9	01:04:50
Lecture 19	Workbook Questions 10–13	00:42:52
Lecture 20	Workbook Questions 14–16	00:57:16

Chapter 08 ► Zener Diode As Regulator

Lecture 01	Introduction to Voltage Regulator	00:29:55
Lecture 02	Zener Diode as Voltage Regulator	00:31:56
Lecture 03	Load Regulation & Line Regulation	00:36:14
Lecture 04	Workbook Questions 1–4	00:34:43
Lecture 05	Workbook Questions 5–10	00:45:04
Lecture 06	Workbook Questions 11–12	00:17:40

Chapter 09 ► Clipper Circuit

Lecture 01	Introduction to Wave Shaping Circuit	00:18:07
Lecture 02	Classification of Clipper Circuit	00:14:32
Lecture 03	Positive Series Clipper Circuit	00:24:42
Lecture 04	Negative Series Clipper Circuit	00:12:55
Lecture 05	Positive Shunt Clipper Circuit	00:12:52
Lecture 06	Negative Shunt Clipper Circuit	00:15:49
Lecture 07	Example 1–2 Based on Series Clipper	00:29:42
Lecture 08	Example 3–4 Based on Series Clipper	00:13:05
Lecture 09	Example 1–2 Based on Series Clipper with VR (Re ..	00:46:27
Lecture 10	Example 1–2 Based on Shunt Clipper	00:45:14
Lecture 11	Example 3–4 Based on Shunt Clipper	00:41:07
Lecture 12	Workbook Questions 1–3	00:50:59
Lecture 13	Workbook Questions 4–6	01:18:50
Lecture 14	Workbook Questions 7–10	01:08:10
Lecture 15	Workbook Question 11	00:17:50

Chapter 10 ► Clamper Circuit

Lecture 01	Introduction to Clamper circuit	00:21:43
Lecture 02	Positive Clamper Circuit	00:16:15
Lecture 03	Different cases in Positive clamper circuit	01:06:05
Lecture 04	Negative Clamper Circuit	00:29:58
Lecture 05	Peak detector, Ideal diode with $RL = \text{Infinite}$	00:27:47
Lecture 06	Peak detector, Practical diode with $RL = \text{Infinite}$	00:21:28
Lecture 07	Peak detector, Ideal diode with $RL = \text{Finite}$ (Envelope Detector)	00:20:36
Lecture 08	Voltage Doubler Circuit	00:11:45
Lecture 09	Voltage Tripler & Quadrupler Circuit	00:27:24

Lecture 10	Workbook Questions 1–4	00:37:51
Lecture 11	Workbook Questions 5–7	00:32:58
Lecture 12	Workbook Questions 8–10	00:40:36
Lecture 13	Workbook Question 11	00:13:59

Chapter 11 ► Rectifier & Filter

Lecture 01	Introduction to Rectifier Circuit	00:12:27
Lecture 02	Power Supplies	00:31:23
Lecture 03	Understanding Diode Models for Rectifier Operation	00:53:03
Lecture 04	Half Wave Rectifier Circuit	00:05:21
Lecture 05	Construction of Half Wave Rectifier	00:41:03
Lecture 06	Performance Analysis of Half wave rectifier	01:20:02
Lecture 07	Full Wave Rectifier Center Tapped	00:21:26
Lecture 08	Full Wave Rectifier Working	00:53:51
Lecture 09	Performance Analysis of Full Wave Rectifier (Part 1)	00:12:42
Lecture 10	Performance Analysis of Full Wave Rectifier (Part 2)	00:40:25
Lecture 11	Full Wave Bridge Rectifier Circuit	00:23:02
Lecture 12	Performance Analysis of Full Wave Bridge Rectifier Circuit	00:51:15
Lecture 13	Rectifier with Filter	00:34:07
Lecture 14	Workbook Questions 1–4	00:21:53
Lecture 15	Workbook Questions 5–10	00:34:32

Chapter 12 ► Low Frequency BJT Amplifier

Lecture 01	Introduction to Amplifier	00:17:54
Lecture 02	Definition of Input Impedance	00:08:29
Lecture 03	Definition of Output Impedance	00:05:54
Lecture 04	Definition of Voltage Gain	00:07:21
Lecture 05	Definition of Current Gain	00:03:48
Lecture 06	AC Parameter of Amplifier	00:17:01
Lecture 07	BJT Amplifier Configuration	00:11:53
Lecture 08	DC and AC Analysis of BJT (Part–1)	00:26:22
Lecture 09	DC and AC Analysis of BJT (Part–2)	00:07:43
Lecture 10	Transistor as a Two Port Network	00:23:37
Lecture 11	H–parameters of Transistor	00:44:16
Lecture 12	Advantage and Disadvantage of h–parameter	00:06:41
Lecture 13	Derivation of Internal Parameters of BJT	00:34:01
Lecture 14	Approximate Analysis of CE without RE	00:24:24
Lecture 15	Approximate Analysis of CE with RE	00:40:22
Lecture 16	Effect of Emitter Bypass Capacitance	00:11:25

Lecture 17	Common Collector Amplifier	00:32:39
Lecture 18	Common Base Amplifier	00:20:22
Lecture 19	Comparison of CB, CE & CC	00:03:28
Lecture 20	Miller's Theorem	00:16:16
Lecture 21	Dual of Miller's Theorem	00:11:47
Lecture 22	Generalised AC Model (re Model)	00:20:50
Lecture 23	CE without Re (re Model)	00:14:45
Lecture 24	CE with Re (re Model)	00:44:38
Lecture 25	AC Resistance or Dynamic Resistance	00:08:39
Lecture 26	CC and CB Amplifier	00:28:29
Lecture 27	Classification of Amplifier based on Input & Output Resistance	00:48:50
Lecture 28	Basic Concept of Feedback Amplifier	00:12:57
Lecture 29	Sensitivity of Feedback Amplifier	00:08:15
Lecture 30	Frequency Response of Amplifier	00:21:48
Lecture 31	Low Pass Filter with Feedback	00:09:08
Lecture 32	High Pass Filter with Feedback	00:20:45
Lecture 33	Block Diagram of Feedback Amplifier	00:06:57
Lecture 34	Basics of Series [slash] Voltage Mixing	00:10:31
Lecture 35	Basics of Shunt [slash] Current Mixing	00:06:41
Lecture 36	Basics of Shunt [slash] Voltage Sampling	00:06:10
Lecture 37	Basics of Series [slash] Current Sampling	00:04:44
Lecture 38	Voltage–Series Topology	00:15:57
Lecture 39	Analysis of Voltage Series Topology	00:13:47
Lecture 40	Voltage–Shunt Topology	00:09:53
Lecture 41	Analysis of Voltage Shunt Topology	00:09:16
Lecture 42	Current–Series Topology	00:09:44
Lecture 43	Current–Shunt Topology	00:13:15
Lecture 44	Relationship between A_{vf} , A_{if} , G_{mf} , R_{mf}	00:04:41
Lecture 45	Analysis of Feedback Topology	00:06:24
Lecture 46	Example 1 (Feedback Topology)	00:09:58
Lecture 47	Example 2 (Feedback Topology)	00:08:03
Lecture 48	Example 3 (Feedback Topology)	00:07:54
Lecture 49	Example 4 (Feedback Topology)	00:07:56
Lecture 50	Cascade Amplifier	00:16:06
Lecture 51	Loading Effect	00:16:25
Lecture 52	Cascode Amplifier	00:14:04
Lecture 53	Cascode Amplifier Parameters	00:29:30
Lecture 54	Darlington Pair	00:12:20
Lecture 55	Parameters of Darlington Pair	00:27:55
Lecture 56	Analysis of 3–db frequency	00:14:18
Lecture 57	Cascade connection of LPF and HPF	00:10:25

Lecture 58	Parallel connection of LPF and HPF	00:08:56
Lecture 59	Frequency response of multistage amplifier	00:37:11
Lecture 60	Questions Based on Feedback & Cascade Amplifier	00:43:30

Chapter 13 ► MOSFET Amplifier

Lecture 01	Introduction to MOSFET Amplifier	00:38:01
Lecture 02	Small Signal Model (Triode Region)	00:32:32
Lecture 03	Small Signal Model (Saturation Region, $\lambda = 0$)	00:14:42
Lecture 04	Small Signal Model (Saturation Region, $\lambda \neq 0$)	00:18:13
Lecture 05	MOSFET Common Source Amplifier	00:22:45
Lecture 06	MOSFET Common Drain Amplifier	00:25:45
Lecture 07	MOSFET Common Gate Amplifier	00:18:58
Lecture 08	Questions on MOSFET Amplifier (1–4)	01:13:25
Lecture 09	Questions on MOSFET Amplifier (5–8)	01:17:18
Lecture 10	Questions on MOSFET Amplifier (9–15)	00:59:33

Chapter 14 ► 555 - Timer

Lecture 01	Introduction to IC-555 Timer	00:14:06
Lecture 02	Working of IC-555 Timer	00:25:07
Lecture 03	IC-555 Timer as a Monostable Multivibrator	00:27:03
Lecture 04	IC-555 Timer as a Astable Multivibrator	00:35:33
Lecture 05	Application of IC-555 Timer	00:07:48
Lecture 06	Workbook Questions (Q1–Q4)	00:23:48

Chapter 15 ► Oscillator

Lecture 01	Introduction to Oscillator	00:23:01
Lecture 02	Principle of Operation	00:20:39
Lecture 03	Wein Bridge Oscillator	00:23:39
Lecture 04	R-C Phase Shift Oscillator	00:12:12
Lecture 05	L-C Oscillator	00:08:16
Lecture 06	Question Based on Oscillator	00:54:20



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



GENERAL APTITUDE

ELECTRICAL ENGINEERING



Lecture Information

Chapter 01 ► Number System

Lecture 01	Number of Zeros at the end	00:45:09
Lecture 02	Unit Digit Value	00:47:50
Lecture 03	Last Two Digits	00:30:17
Lecture 04	Concept of Remainders	00:40:09
Lecture 05	Factorisation	00:30:07
Lecture 06	Divisibility	00:43:07
Lecture 07	Important Note	00:23:09

Chapter 02 ► PnC & Probability

Lecture 01	Addition, Multiplication & Filling	01:16:42
Lecture 02	Basics of PnC	00:24:20
Lecture 03	Letters–Word Arrangement	00:32:51
Lecture 04	Team Formation	00:25:59
Lecture 05	Question Paperwala Question	00:13:37
Lecture 06	Number Sum	00:12:14
Lecture 07	Linear and Circular Arrangements	00:10:44
Lecture 08	Straight Lines, Triangles, Chess Board, Handshake & Gift...	00:28:09

Lecture 09	Dictionary Word	00:11:27
Lecture 10	Important Concepts PnC	00:21:53
Lecture 11	Concept Builder 1 (Probability)	02:01:46
Lecture 12	Concept Builder 2 (Probability)	01:17:15
Lecture 13	Challenge Question (Probability)	00:51:46

Chapter 03 ► TSD & Work and Time

Lecture 01	Average Speed	00:27:29
Lecture 02	Time Difference	00:42:29
Lecture 03	Relative Speed	00:52:49
Lecture 04	Challenge Questions	01:05:54
Lecture 05	Boats & Streams	00:18:56
Lecture 06	Linear Races	00:21:37
Lecture 07	Challenge Questions	00:12:01
Lecture 08	Circular Races & HCF–LCM	01:35:08
Lecture 09	Work & Time	00:14:55
Lecture 10	Understanding Workdone	01:16:39
Lecture 11	Distribution of Wages	00:09:14
Lecture 12	Pipes & Cisterns	00:32:16
Lecture 13	W=DMTE	00:38:58

Chapter 04 ► Percentage & Its Applications

Lecture 01	Percentage : DI (Pie Chart)	01:38:34
Lecture 02	Percentage : DI (Table & Line Graph)	00:49:11
Lecture 03	Percentage Basic	01:07:11
Lecture 04	Profit & Loss	00:33:26
Lecture 05	Mixture Alligation	01:20:55
Lecture 06	SICI & Some more Graphs	01:38:16

Chapter 05 ► Miscellaneous

Lecture 01	Logarithms	01:20:25
Lecture 02	Odd One Out, Coding, Decoding, Missing Letter & Blood ...	00:31:29
Lecture 03	Simplification, Some More Graphs & Reasoning	03:33:52

Chapter 06 ► Verbal

Lecture 01	Logical Connective	01:05:55
Lecture 02	Syllogism	01:33:15
Lecture 03	Verbal Reasoning (Critical Reasoning)	01:43:06

Chapter 07 ► Verbal Ability and Verbal Grammar (VA/VG)

Lecture 01

Verbal Ability and Verbal Grammar (VA/VG)

02:22:20

Chapter 08 ► Vocabulary Development (Rapid Fire)

Lecture 01

Rapid Fire (1)

00:27:28

Lecture 02

Rapid Fire (2)

00:14:19

Lecture 03

Rapid Fire (3)

00:11:39



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



CONTROL SYSTEM

ELECTRICAL ENGINEERING

Lecture Information

Lecture 0.0	Syllabus of Control System	00:10:00
Lecture 0.1	How to Study Control System ?	00:09:20

Chapter 01 ► Basics of Control System

Lecture 01	Concept of Open & Closed System	00:16:57
Lecture 02	Representation of Closed System	00:20:35
Lecture 03	Concept of Open Loop Transfer function (OLTF)	00:14:35
Lecture 04	Sensitivity	00:20:57
Lecture 05	Workbook Question (Q1&Q2)	00:07:00
Lecture 06	Workbook Question (Q3&Q4)	00:08:27
Lecture 07	Laplace Transform of Some Basic Signals	00:34:34
Lecture 08	Concept of Poles & Zeros	00:14:43
Lecture 09	Significance of Poles	00:31:20
Lecture 10	Stability in negative and positive feedback system	00:16:14
Lecture 11	Concept of Dominant Pole	00:32:47
Lecture 12	Workbook Question (Q5)	00:10:28
Lecture 13	Transfer Function	00:23:27
Lecture 14	Concept of Impulse and step response	00:23:20
Lecture 15	Initial and final value theorem	00:20:12

Lecture 16	Workbook Question (Q6–Q7)	00:14:53
Lecture 17	Workbook Question (Q8–Q9)	00:16:23
Lecture 18	Workbook Question (Q10–Q11)	00:15:40
Lecture 19	Workbook Question (Q12)	00:13:01

Chapter 02 ► Block Diagram & Signal Flow Graph

Lecture 01	Block diagram reduction rules	00:33:47
Lecture 02	Example 1 based on Block diagram reduction rules	00:08:26
Lecture 03	Workbook Question (Q1)	00:07:44
Lecture 04	Example 2 based on Block diagram reduction rules	00:9:08
Lecture 05	Example 3 based on Block diagram reduction rules	00:16:09
Lecture 06	Workbook Question (Q2)	00:04:40
Lecture 07	Workbook Question (Q3)	00:12:16
Lecture 08	Workbook Question (Q4)	00:07:31
Lecture 09	Introduction of Signal Flow Graph	00:24:42
Lecture 10	Example 1 based on SFG	00:10:10
Lecture 11	Example 2 based on SFG	00:09:16
Lecture 12	Example 3 based on SFG	00:16:16
Lecture 13	Workbook Question (Q5)	00:10:14
Lecture 14	Workbook Question (Q6)	00:06:45
Lecture 15	Workbook Question (Q7)	00:09:48
Lecture 16	Workbook Question (Q8)	00:08:10
Lecture 17	Example 4 based on SFG	00:17:56
Lecture 18	Example 5 based on SFG	00:13:44
Lecture 19	Workbook Question (Q9)	00:12:59
Lecture 20	Limitation of Mason's Gain Formula	00:31:41

Chapter 03 ► Time Response Analysis

Lecture 01	Analysis of first order system	00:38:04
Lecture 02	Introduction of 2nd order system	00:16:57
Lecture 03	Unit impulse response of 2nd order system (Part–1)	00:40:04
Lecture 04	Unit impulse response of 2nd order system (Part–2)	00:25:26
Lecture 05	Unit impulse response of 2nd order system (Part–3)	00:23:36
Lecture 06	Concept of Damping in series RLC Circuit	00:34:39
Lecture 07	Concept of Damping in parallel RLC Circuit	00:18:32
Lecture 08	Step Response of 2nd order system (Part–1)	00:25:52
Lecture 09	Step Response of 2nd order system (Part–2)	00:24:38
Lecture 10	Question based on 2nd order system	00:25:13
Lecture 11	Workbook Question (Q1)	00:07:45

Lecture 12	Workbook Question (Q2)	00:07:56
Lecture 13	Workbook Question (Q3)	00:10:52
Lecture 14	Workbook Question (Q4–Q5)	00:12:38
Lecture 15	Workbook Question (Q6)	00:17:47
Lecture 16	Challenging Questions based on 3rd order system	00:13:50
Lecture 17	Time Domain parameters of 1st order system	00:32:10
Lecture 18	Time Domain parameters of 2nd order system (Part–1)	00:29:42
Lecture 19	Time Domain parameters of 2nd order system (Part–2)	00:34:39
Lecture 20	Time Domain parameters of 2nd order system (Part–3)	00:27:13
Lecture 21	Workbook Question (Q7)	00:09:48
Lecture 22	Workbook Question (Q8–Q9)	00:19:03
Lecture 23	Question Based on time domain parameter of 2nd ..	00:20:57
Lecture 24	Workbook Question (Assignment 4)	00:14:44
Lecture 25	Analysis of time domain parameters corresponding to ..	00:33:16
Lecture 26	Steady–state error for unity feedback system (Part–1)	00:21:40
Lecture 27	Steady–state error for unity feedback system (Part–2)	00:29:23
Lecture 28	Workbook Questions based on steady state error (Q10–Q11)	00:12:32
Lecture 29	Workbook Questions based on steady state error (Q12)	00:13:26
Lecture 30	Workbook Questions based on steady state error (Q13)	00:08:18
Lecture 31	Workbook Questions based on steady state error (Q14)	00:07:55
Lecture 32	Workbook Questions based on steady state error (Q15)	00:10:40
Lecture 33	Steady state error for non–unity feedback system	00:17:03
Lecture 34	Question based on Steady state error for non–unity ..	00:19:43
Lecture 35	Question based on Steady state error for non–unity ..	00:09:46
Lecture 36	Workbook Questions (Q18–Q19)	00:16:11

Chapter 04 ► Routh–Hurwitz Stability

Lecture 01	Introduction of Routh Hurwitz Stability Criterion (Part–1)	00:28:03
Lecture 02	Introduction of Routh Hurwitz Stability Criterion (Part–2)	00:14:18
Lecture 03	Introduction of Routh Hurwitz Stability Criterion (Part–3)	00:26:05
Lecture 04	Example based on Routh Hurwitz Stability Criterion (Ex 4)	00:09:38
Lecture 05	Example based on Routh Hurwitz Stability Criterion (Ex 5)	00:19:18
Lecture 06	Special Case based on RH table (Part–1)	00:07:46
Lecture 07	Special Case based on RH table (Part–2)	00:07:01
Lecture 08	Workbook Question (Q1–Q2)	00:14:55
Lecture 09	Workbook Question (Q3)	00:10:59
Lecture 10	Workbook Question (Q4–Q5)	00:18:25
Lecture 11	Workbook Question (Q6–Q7)	00:18:58
Lecture 12	Workbook Question (Q8–Q9)	00:13:12
Lecture 13	Workbook Question (Q10)	00:11:31

Lecture 14	Important Concept (Part-1)	00:21:16
Lecture 15	Important Concept (Part-2)	00:13:00
Lecture 16	Important Concept (Part-3)	00:10:39
Lecture 17	Workbook Question (Q11)	00:08:50

Chapter 05 ► Root Locus Diagram

Lecture 01	Introduction of Root Locus	00:42:26
Lecture 02	Rules for Sketching Root Locus (Part-1)	00:45:23
Lecture 03	Rules for Sketching Root Locus (Part-2)	00:22:45
Lecture 04	Workbook Question (Q1)	00:15:05
Lecture 05	Workbook Question (Q2-Q3)	00:10:15
Lecture 06	Rules for Sketching Root Locus (Part-3)	00:29:44
Lecture 07	Rules for Sketching Root Locus (Part-4)	00:19:07
Lecture 08	Question Based on Root Locus (Part-1)	00:27:08
Lecture 09	Question Based on Root Locus (Part-2)	00:24:39
Lecture 10	Question Based on Root Locus (Part-3)	00:17:47
Lecture 11	Question Based on Root Locus (Part-4)	00:29:26
Lecture 12	Question Based on Root Locus (Part-5)	00:19:53
Lecture 13	Question Based on Root Locus (Part-6)	00:22:23
Lecture 14	Workbook Question (Q4-Q5)	00:15:36
Lecture 15	Workbook Question (Q6)	00:13:36
Lecture 16	Workbook Question (Q7)	00:23:41
Lecture 17	Question Based on Root Locus (Part-7)	00:19:24
Lecture 18	Angle of Departure and Arrival	00:32:56
Lecture 19	Workbook Question (Q8)	00:15:35
Lecture 20	Question Based on Root Locus (Part-8)	00:13:25
Lecture 21	Concept of Complementary Root Locus (Part-1)	00:31:49
Lecture 22	Concept of Complementary Root Locus (Part-2)	00:22:09
Lecture 23	Question Based on Complementary Root Locus	00:19:28
Lecture 24	Workbook Question (Q9)	00:07:54
Lecture 25	Question Based on Root Locus (Part-9)	00:25:57
Lecture 26	Workbook Question (Q10)	00:22:34
Lecture 27	Workbook Question (Q11)	00:14:08
Lecture 28	Workbook Question (Q12-Q14)	00:17:21
Lecture 29	Effect of addition of poles & zeros on Root Locus	00:11:08
Lecture 30	Question based on Effect of addition of poles on Root Locus	00:30:15
Lecture 31	Workbook Question (Q15)	00:10:09

Chapter 06 ► Polar Plot

Lecture 01	Introduction Polar Plot	00:23:35
Lecture 02	Polar plot for type '0'system	00:35:52
Lecture 03	Polar plot for type '1' system	00:15:06
Lecture 04	Polar plot for higher order system	00:09:05
Lecture 05	Good example of polar plot	00:19:57
Lecture 06	Workbook Questions (Q1–Q2)	00:17:13
Lecture 07	Relative Stability Parameter (Part–1)	00:37:37
Lecture 08	Relative Stability Parameter (Part–2)	00:16:22
Lecture 09	Relative Stability Parameter (Part–3)	00:23:05
Lecture 10	Relative Stability Parameter (Part–4)	00:12:42
Lecture 11	Workbook Question (Q3–Q4)	00:15:36
Lecture 12	Workbook Question (Q5–Q6)	00:09:40
Lecture 13	Good Example Based on Relative Stability Parameter	00:53:34
Lecture 14	Calculation of Gain Margin by using Root Locus	00:11:58
Lecture 15	Good concept of critical point ($-1 + j0$)	00:12:05
Lecture 16	Graphical calculation of Phase Margin	00:18:26
Lecture 17	Questions based on relative stability parameter	00:12:31
Lecture 18	Workbook Question (Q7–Q8)	00:27:55
Lecture 19	Good question on polar plot	00:24:32
Lecture 20	Polar plot of transportation delay system	00:25:39
Lecture 21	Workbook Question (Q9–Q10)	00:17:37
Lecture 22	Workbook Question (Q11)	00:09:25
Lecture 23	Good Concept of Polar plot (Part–1)	00:34:54
Lecture 24	Good Concept of Polar plot (Part–2)	00:59:25

Chapter 07 ► Nyquist Stability Criterion

Lecture 01	Introduction of Nyquist plot	00:17:31
Lecture 02	Nyquist Contour	00:24:43
Lecture 03	Story of Nyquist Plot	01:05:33
Lecture 04	Questions based on Nyquist plot (part–1)	00:30:32
Lecture 05	Questions based on Nyquist plot (part–2)	00:22:37
Lecture 06	Questions based on Nyquist plot (part–3)	00:11:33
Lecture 07	Questions based on Nyquist plot (part–4)	00:12:31
Lecture 08	Workbook Question (Q1–Q2)	00:17:37
Lecture 09	Workbook Question (Q3–Q4)	00:26:30
Lecture 10	Workbook Question (Q5–Q6)	00:26:31
Lecture 11	Workbook Question (Q7)	00:21:00
Lecture 12	Workbook Question (Q8)	00:13:48

Lecture 13	Workbook Question (Q9)	00:17:28
Lecture 14	Workbook Question (Q10–Q11)	00:28:15
Lecture 15	Workbook Question (Q12)	00:15:44
Lecture 16	Relative stability parameters for positive feedback system	00:06:58

Chapter 08 ► Bode Plot

Lecture 01	Introduction of Bode Plot	00:29:20
Lecture 02	Question Based on Bode Plot (Part–1)	00:25:57
Lecture 03	Question Based on Bode Plot (Part–2)	00:11:08
Lecture 04	Question Based on Bode Plot (Part–3)	00:10:48
Lecture 05	Question Based on Bode Plot (Part–4)	00:32:09
Lecture 06	Bode Plot for First Order System (Part–1)	00:37:24
Lecture 07	Bode Plot for First Order System (Part–2)	00:16:23
Lecture 08	Recovery of Transfer Function from Bode .. Part–1)	00:18:25
Lecture 09	Recovery of Transfer Function from Bode .. Part–2)	00:26:18
Lecture 10	Workbook Question (Q1–Q2)	00:16:16
Lecture 11	Workbook Question (Q3–Q4)	00:13:25
Lecture 12	Workbook Question (Q5)	00:14:33
Lecture 13	Workbook Question (Q6)	00:13:21
Lecture 14	Workbook Question (Q7)	00:13:48
Lecture 15	Workbook Question (Q8)	00:17:16
Lecture 16	Workbook Question (Q9)	00:14:58
Lecture 17	Workbook Question (Q10)	00:21:14
Lecture 18	Calculation of Error Co-efficient from Bode Plot	00:16:56
Lecture 19	Workbook Question (Q11)	00:15:41
Lecture 20	Workbook Question (Q12)	00:13:07
Lecture 21	Relative Stability Parameter from Bode Plot	00:18:22
Lecture 22	Bode Plot for Standard 2nd Order System	00:34:09
Lecture 23	Workbook Question (Q13)	00:17:53
Lecture 24	Asymptotic Bode Phase Plot	00:51:27

Chapter 09 ► Frequency Response of Second Order System

Lecture 01	Frequency Response of Standard 2nd Order System	00:23:44
Lecture 02	Workbook Question (Q1)	00:11:49
Lecture 03	Workbook Question (Q2–Q3)	00:06:40
Lecture 04	Workbook Question (Q4)	00:08:43
Lecture 05	Workbook Question (Q5)	00:09:17
Lecture 06	3db frequency of Standard 2nd Order System	00:24:03
Lecture 07	Relative Stability Parameter of Standard 2nd Order System	00:16:00

Chapter 10 ► State Space Analysis

Lecture 01	Introduction of State Space Analysis	00:42:04
Lecture 02	Example Based on State Variable Representation (Part-1)	00:27:01
Lecture 03	Example Based on State Variable Representation (Part-2)	00:21:16
Lecture 04	Example Based on State Variable Representation (Part-3)	00:19:30
Lecture 05	Recovery of Transfer Function from State Vari ..(Part-1)	00:19:19
Lecture 06	Recovery of Transfer Function from State Vari ..(Part-2)	00:42:04
Lecture 07	Workbook Question (Q1)	00:15:34
Lecture 08	Workbook Question (Q2–Q3)	00:08:43
Lecture 09	Workbook Question (Q4–Q5)	00:15:29
Lecture 10	Workbook Question (Q6)	00:16:11
Lecture 11	Good Concept of State Variable Representation	00:13:52
Lecture 12	Solution of State Space Equation (Part-1)	00:21:54
Lecture 13	Solution of State Space Equation (Part-2)	00:11:44
Lecture 14	Workbook Question (Q7–Q8)	00:13:09
Lecture 15	Workbook Question (Q9)	00:17:36
Lecture 16	Workbook Question (Q10)	00:11:31
Lecture 17	Workbook Question (Q11–Q12)	00:20:18
Lecture 18	Workbook Question (Q13)	00:20:15
Lecture 19	Workbook Question (Q14–Q15)	00:21:15
Lecture 20	Concept of Controllability and Observability	00:22:18
Lecture 21	Question Based on Controllability and Observability (Part-1)	00:11:26
Lecture 22	Question Based on Controllability and Observability (Part-2)	00:20:30
Lecture 23	Transfer Function Decomposition (Part-1)	00:16:19
Lecture 24	Transfer Function Decomposition (Part-2)	00:39:53
Lecture 25	Workbook Question (Q16)	00:14:30
Lecture 26	Workbook Question (Q17)	00:20:07
	State Variable Representation of Electrical Network	PDF

Chapter 11 ► Controllers & Compensators

Lecture 01	Introduction of Compensator and Controller	00:13:08
Lecture 02	Lag Compensator	00:32:21
Lecture 03	Lead Compensator	00:27:00
Lecture 04	Lag–Lead Compensator	00:22:46
Lecture 05	Lead–Lag Compensator	00:24:42
Lecture 06	Workbook Question (Q1–Q3)	00:15:38
Lecture 07	Workbook Question (Q4)	00:13:55
Lecture 08	Workbook Question (Q5)	00:08:13
Lecture 09	On–Off Controller	00:04:17

Lecture 10	Proportional Controller	00:35:25
Lecture 11	Derivative Controller	00:10:31
Lecture 12	Proportional Derivative Controller	00:24:39
Lecture 13	Integral Controller	00:09:45
Lecture 14	PI Controller	00:10:45
Lecture 15	PID Controller	00:08:04
Lecture 16	Workbook Question (Q6)	00:25:00
Lecture 17	Workbook Question (Q7)	00:25:40
Lecture 18	Workbook Question (Q8)	00:09:13
	Comparison Between Phase Lag Compensator & ..	PDF



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



DIGITAL ELECTRONICS

ELECTRICAL ENGINEERING

Lecture Information

Lecture 00	How to Study Digital Electronics & Microprocessor 8085 ?	00:24:20
------------	--	----------

Chapter 01 ► Logic Gates

Lecture 01	Basic gates–AND, OR & NOT	00:26:32
Lecture 02	Universal gates–NAND	00:35:40
Lecture 03	Designing using Minimum number of NAND gates	00:29:23
Lecture 04	Universal gates–NOR	00:20:40
Lecture 05	Designing using Minimum number of NOR gates	00:15:16
Lecture 06	Workbook Questions 1–5	00:17:11
Lecture 07	Switching Circuit Representation–basic & universal gates	00:19:11
Lecture 08	Special Purpose Gates–XOR	00:29:36
Lecture 09	Special Purpose Gates–XNOR	00:36:37
Lecture 10	Workbook Questions 6–12	00:32:14
Lecture 11	Switching Circuit Representation–Special Purpose Gates	00:12:17
Lecture 12	Workbook Questions 13–14	00:21:05
Lecture 13	Special Case in minimum number of NAND & NOR gates	00:11:46
Lecture 14	Workbook Questions 15–16	00:08:28
Lecture 15	Workbook Questions 17–19 Based on Propagation Delay	00:17:23
Lecture 16	Ring Oscillator & Workbook Questions 20–21	00:19:31

Chapter 02 ► Boolean Algebra

Lecture 01	Laws of Boolean Algebra	00:11:58
Lecture 02	Consensus Law	00:20:17
Lecture 03	Associative Law, DeMorgan's Law & Duality	00:32:31
Lecture 04	Maximum Number of Boolean Functions	00:19:35
Lecture 05	Workbook Questions 1–6	00:17:10
Lecture 06	Workbook Questions 7–12	00:22:42
Lecture 07	Representation of Boolean Function–SOP & POS	00:22:17
Lecture 08	Standard/Canconical SOP & POS form (Part 1)	00:26:19
Lecture 09	Standard/Canconical SOP & POS form (Part 2)	00:30:44
Lecture 10	Standard/Canconical SOP & POS form (Part 3)	00:15:12
Lecture 11	Workbook Questions 13–23	00:30:45
Lecture 12	Minterms through Logic gates & workbook questions 24–26	00:20:52

Chapter 03 ► K–Maps

Lecture 01	Two variable K–Maps	00:27:22
Lecture 02	Three variable K–Maps	00:38:02
Lecture 03	Four variable K–Maps	00:35:16
Lecture 04	Workbook Questions 1–6	00:36:20
Lecture 05	Workbook Questions 7–12	00:34:30
Lecture 06	Concept of Don't Care	00:15:48
Lecture 07	Workbook Questions 13–17	00:16:07
Lecture 08	Workbook Questions 18–21	00:29:31
Lecture 09	Workbook Questions 22–25	00:27:32
Lecture 10	Five variable K–Maps & Workbook Question 26	00:12:20
Lecture 11	Prime Implicants & Essential Prime Implicants	00:38:18
Lecture 12	Workbook Questions 27–33	00:34:34

Chapter 04 ► Number System, Binary Codes & Complement Form

Lecture 01	Number System & Conversion (Part 1)	00:27:22
Lecture 02	Number System & Conversion (Part 2)	00:29:29
Lecture 03	Workbook Questions 1–11	00:39:22
Lecture 04	BCD Codes	00:25:21
Lecture 05	Workbook Questions 12–14	00:05:17
Lecture 06	Gray Code	00:17:28
Lecture 07	Sign Magnitude & 2's complement representation (Part 1)	00:21:20
Lecture 08	Sign Magnitude & 2's complement representation (Part 2)	00:22:09

Lecture 09	Workbook Questions 1–3	00:31:22
Lecture 10	Workbook Questions 4–8	00:22:52
Lecture 11	Shortcut to find 2's	00:11:51
Lecture 12	1's & 2's Complement's Arithmetic	00:30:05
Lecture 13	Concept of Overflow	00:28:21
Lecture 14	Workbook Questions 9–11	00:09:07

Chapter 05 ► Combinational Circuits

Lecture 01	Introduction to Combinational Circuits & 2:1 Multiplexer	00:17:34
Lecture 02	4:1 Multiplexer & 8:1 Multiplexer	00:24:59
Lecture 03	Procedure to find output of Multiplexer	00:14:21
Lecture 04	Workbook Questions 1–6	00:27:49
Lecture 05	Workbook Questions 7–11	00:21:17
Lecture 06	Workbook Questions 12–15	00:18:00
Lecture 07	MUX with enable input	00:21:45
Lecture 08	Workbook Questions 16–17	00:12:11
Lecture 09	Designing of 2:1 Multiplexer	00:20:45
Lecture 10	Designing of 4:1 Multiplexer	00:29:40
Lecture 11	Designing of 8:1 Multiplexer	00:20:16
Lecture 12	Designing any function using Minimum Number on MUX	00:22:43
Lecture 13	Workbook Questions 18–21	00:26:08
Lecture 14	Workbook Questions 22–25	00:16:31
Lecture 15	Designing of Higher Order MUX using Lower Order MUX Part 1	00:24:43
Lecture 16	Designing of Higher Order MUX using Lower Order MUX Part 2	00:22:27
Lecture 17	Demultiplexer	00:26:23
Lecture 18	Decoder Part 1	00:39:00
Lecture 19	Decoder Part 2	00:35:24
Lecture 20	Designing of Higher Order Decoder using Lower Order...	00:32:24
Lecture 21	Workbook Question 1–4 (Decoder)	00:34:25
Lecture 22	Encoder	00:30:15
Lecture 23	Priority Encoder	00:25:42
Lecture 24	Half Adder & Full Adder	00:34:33
Lecture 25	Half Subtrator & Full Subtrator	00:34:31
Lecture 26	Workbook Questions 1–3 (Adder & Subtrator)	00:13:16
Lecture 27	Binary Parallel Adder	00:26:12
Lecture 28	Workbook Questions 4–6 (Adder & Subtrator)	00:22:42
Lecture 29	Workbook Question 7–8 (Adder & Subtrator)	00:32:37
Lecture 30	Comparator	00:32:16
Lecture 31	Workbook Questions 1–2 (Comparator)	00:23:48

Lecture 32	4-bit Comparator	00:19:08
Lecture 33	Code Converter Part 1	00:17:53
Lecture 34	Code Converter Part 2	00:39:23
Lecture 35	Programmable Logic Devices	00:29:45
Lecture 36	Workbook Question 1–3 (PLDs)	00:04:25
Lecture 37	Workbook Question 1–4 (Code Converter)	00:38:06

Chapter 06 ► Sequential Circuits

Lecture 01	Sequential Circuits & Memory Element	00:22:16
Lecture 02	SR Latch using NOR gate	00:23:38
Lecture 03	SR Latch using NAND gate	00:22:13
Lecture 04	Equivalence of SR Latch using NOR gate & SR Latch...	00:19:39
Lecture 05	Introduction to Flip–Flop	00:18:43
Lecture 06	SR Flip–Flop using NOR Latch	00:11:59
Lecture 07	Equivalence of SR Flip–Flop using NOR Latch & SR Flip–Flop...	00:13:14
Lecture 08	SR Flip–Flop using NAND Latch	00:14:22
Lecture 09	Characteristics Table, Characteristics Equation and Excitation...	00:25:43
Lecture 10	D Flip–Flop (NOR Latch & NAND Latch)	00:23:56
Lecture 11	JK Flip–Flop using NOR Latch	00:32:57
Lecture 12	JK Flip–Flop using NAND Latch	00:22:37
Lecture 13	Characteristics Table, Characteristics Equation and Excitation...	00:15:16
Lecture 14	T Flip–Flop (NOR Latch & NAND Latch)	00:11:31
Lecture 15	Quick Revision of Latch & Flip–Flop	00:31:33
Lecture 16	Workbook Questions (1–5)	00:14:30
Lecture 17	Workbook Questions (6–9)	00:24:29
Lecture 18	Flip–Flop Conversion	00:32:42
Lecture 19	Workbook Questions (10–14)	00:41:51
Lecture 20	Designing of Synchronous Counter from Next State Equation	00:35:03
Lecture 21	Designing of Synchronous Counter from State Table...	00:29:34
Lecture 22	Workbook Question 1–3	00:23:29
Lecture 23	Analysis of Synchronous Counter (State Table or State...	00:14:38
Lecture 24	Workbook Questions 4–6	00:26:23
Lecture 25	Workbook Questions 7–10	00:36:30
Lecture 26	Workbook Questions 11–13	00:29:46
Lecture 27	Workbook Questions 14–17	00:24:29
Lecture 28	External Input in Counter and UP/DOWN Counter	00:37:29
Lecture 29	Alternative approach to Analyse Synchronous Counter	00:11:58
Lecture 30	Alternative Solutions to Workbook Questions 4–9	00:24:08
Lecture 31	Alternative Solutions to Workbook Questions 10–17	00:24:34

Lecture 32	Workbook Question 18	00:35:44
Lecture 33	Workbook Question 19–20	00:27:20
Lecture 34	Workbook Question 21	00:27:08
Lecture 35	Workbook Question 22–24	00:38:11
Lecture 36	Edge Triggered and level triggered Flip-Flops	00:36:32
Lecture 37	Concept of Asynchronous Counter	00:18:47
Lecture 38	MOD 8 or divide by 8 Asynchronous Counter	00:32:38
Lecture 39	Designing of Down Asynchronous Counter	00:29:45
Lecture 40	MOD–N Asynchronous Counter	00:11:41
Lecture 41	Asynchronous Clear and Preset Input	00:36:58
Lecture 42	Analysis of MOD–N Asynchronous Counter (Part 1)	00:37:35
Lecture 43	Analysis of MOD–N Asynchronous Counter (Part 2)	00:21:02
Lecture 44	Designing of MOD–N Asynchronous UP Counter	00:31:50
Lecture 45	Designing of MOD–N Asynchronous DOWN Counter	00:23:33
Lecture 46	Shortcut for Designing & Analysis of MOD–N Asynchronous...	00:21:10
Lecture 47	Comparison on Asynchronous Counter & Synchronous...	00:24:03
Lecture 48	Workbook Question 1–6	00:38:37
Lecture 49	Workbook Question 7–10	00:33:22
Lecture 50	Concept of Frequency Division in MOD–N Asynchronous ..	00:15:22
Lecture 51	Workbook Question 10–11	00:12:40
Lecture 52	Synchronous Clear and Preset Input	00:12:36
Lecture 53	Workbook Question 12–13	00:11:17
Lecture 54	Workbook Miscellaneous Questions (FF and Counters) 1–3	00:22:32
Lecture 55	Workbook Miscellaneous Questions (FF and Counters) 4–6	00:20:17
Lecture 56	Workbook Miscellaneous Questions (FF and Counters) 7–9	00:41:18
Lecture 57	Workbook Miscellaneous Questions (FF and Counters) 10–12	00:29:48
Lecture 58	Workbook Miscellaneous Questions (FF and Counters) 13	00:10:15
Lecture 59	Delay Comparison in Asynchronous Counter & Synchronous...	00:36:18
Lecture 60	Workbook Miscellaneous Questions (FF and Counters) 14–16	00:07:03
Lecture 61	Self Starting Counters & Workbook Miscellaneous Question 17	00:38:16
Lecture 62	Cascading of Counters through Workbook Question 18	00:25:34
Lecture 63	Cascading of Counters through Workbook Questions 19–20	00:25:39
Lecture 64	Workbook Miscellaneous Questions (FF and Counters) 21–22	00:38:43
Lecture 65	Race Around Condition	00:21:49
Lecture 66	Master Slave Flip-Flop & Workbook Miscellaneous...	00:32:35
Lecture 67	Shift Register	00:43:15
Lecture 68	Application of Shift Register	0:32:51
Lecture 69	Workbook Questions 1–4	00:23:43
Lecture 70	Workbook Questions 5–6	00:13:43
Lecture 71	Concept of Set-up Time & hold time & Workbook Question 7	00:19:49

Chapter 07 ► DAC & ADC

Lecture 01	Weighted Resistor DAC & Workbook Questions 1–5	00:44:36
Lecture 02	Parallel Comparator ADC & Workbook Questions 6–8	00:37:30
Lecture 03	Successive Approximation ADC & Workbook Questions 9	00:32:35
Lecture 04	Counter Type ADC & Workbook Questions 10	00:17:20
Lecture 05	Full Scale Voltage, Resolution & Step Size through...	00:29:06
Lecture 06	Dual Slope ADC & Workbook Questions 14–15	00:47:29
Lecture 07	Workbook Questions 16–19	00:36:11
Lecture 08	Workbook Questions 20–23	00:23:37
Lecture 09	R–2R Ladder Type DAC	00:28:48
Lecture 10	Workbook Questions 24–27	00:17:06

Chapter 08 ► Microprocessor 8085

Lecture 01	Introduction to Microprocessor 8085	00:44:33
Lecture 02	Data Transfer Instruction Group (Part 1)	00:39:54
Lecture 03	Data Transfer Instruction Group (Part 2)	00:39:19
Lecture 04	Arithmetic Instruction Group (Part 1)	00:34:35
Lecture 05	Arithmetic Instruction Group (Part 2)	00:37:25
Lecture 06	Arithmetic Instruction Group (Part 3)	00:15:55
Lecture 07	Logical Instruction Group	00:29:07
Lecture 08	Workbook Questions 1–11	00:33:28
Lecture 09	Workbook Questions 12–19	00:32:42
Lecture 10	Branch Group Instructions (Part 1)	00:37:34
Lecture 11	Branch Group Instructions (Part 2)	00:52:11
Lecture 12	Stack Group Instructions	00:21:26
Lecture 13	Workbook Questions 1–6	00:37:28
Lecture 14	Workbook Questions 7–15	00:37:06
Lecture 15	Workbook Questions 16–18 based on IN & OUT Instruction	00:13:14
Lecture 16	Workbook Questions 19–21 based on DAA Instruction	00:37:02
Lecture 17	T States, Machine Cycles & Instruction Cycle (Part 1)	00:18:04
Lecture 18	T States, Machine Cycles & Instruction Cycle (Part 2)	00:37:37
Lecture 19	Workbook Questions 1–9	00:25:29
Lecture 20	Workbook Questions 10–12	00:27:42
Lecture 21	Interrupts	00:22:42
Lecture 22	Workbook Questions 1–6	00:06:46
Lecture 23	Memory	00:17:32
Lecture 24	Workbook Questions 1–15	00:38:41
Lecture 25	Memory Interfacing	00:52:12

Lecture 26	Workbook Questions 16–22	00:30:33
Lecture 27	Workbook Questions 23–24	00:35:38
Lecture 28	Workbook Questions 25–29	00:17:22

Chapter 09 ► Logic Family

Lecture 01	Logic Family – RTL & DTL with Workbook Questions 1–3	0:37:23
Lecture 02	CMOS Logic Family	0:30:38
Lecture 03	Workbook Questions 4–8	0:17:53
Lecture 04	Workbook Question 9	0:08:49

Quick Revision ►

Lecture 01	Quick Revision of Digital Electronics (Part 1)	01:12:33
Lecture 02	Quick Revision of Digital Electronics (Part 2)	01:20:27



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



ELECTRICAL MACHINES

ELECTRICAL ENGINEERING

Lecture Information

Lecture 00	How to use PD/GD for Electrical Machines ?	00:08:44
------------	--	----------

Chapter 01 ► Transformer

Lecture 01	Basics of Transformer	01:10:47
Lecture 02	Ideal Transformer	00:51:34
Lecture 03	Electrical Equivalent Model of Practical Transformer	01:07:15
Lecture 04	Transformer Phasor Diagram and Numericals	00:54:16
Lecture 05	Testing of Transformer	00:44:42
Lecture 06	Polarity Test and Per Unit System	01:28:51
Lecture 07	Transformer Losses	01:06:02
Lecture 08	Voltage Regulation	01:26:05
Lecture 09	Numericals on Voltage Regulation	02:07:10
Lecture 10	Transformer Efficiency	00:46:25
Lecture 11	Numericals on Transformer Efficiency and Testing of ..	03:02:56
Lecture 12	Auto Transformer	01:59:05
Lecture 13	Numericals on Auto Transformer	01:03:10
Lecture 14	Three Winding Transformer	00:08:53
Lecture 15	Three Phase Transformer	02:46:56
Lecture 16	Numericals on Three Phase Transformer	01:58:26

Lecture 17	Concept of Harmonics	01:45:46
Lecture 18	Numericals on Concept of Harmonics	00:14:15
Lecture 19	Speacial Transformer Connections	01:47:11
Lecture 20	Numericals on Speacial Transformer Connections	00:44:33
Lecture 21	Parallel Transformer Operations	02:10:01
Lecture 22	Numericals on Parallel Transformer Operations	01:02:01
Lecture 23	Inrush of Magnetizing Current	00:18:11
Lecture 24	Transformer Construction	00:41:57

Chapter 02 ► Induction Machine

Lecture 01	Concept of Rotating Magnetic Field	01:55:15
Lecture 02	Polarity of Induced EMF	00:24:36
Lecture 03	Principal of Operation	02:37:30
Lecture 04	Numericals on Principal of Operation	01:17:04
Lecture 05	Electrical Model of Three Phase Induction Machine	00:38:39
Lecture 06	Power Flow in Induction Machine	00:41:03
Lecture 07	Numericals on Power Flow in Induction Machine	01:36:56
Lecture 08	Electrical Model and Torque Speed Curve	01:42:53
Lecture 09	Numericals on Torque Speed Curve	01:27:57
Lecture 10	Doubly Fed Induction Generator	00:28:44
Lecture 11	Numericals on Doubly Fed Induction Generator	00:11:13
Lecture 12	No Load and Block Rotor Test	00:54:42
Lecture 13	Numericals on No Load and Block Rotor Test	00:40:03
Lecture 14	Circle Diagram	00:30:11
Lecture 15	Induction Machine Starters	00:56:58
Lecture 16	Numericals on Starting of Induction Motor	00:33:26
Lecture 17	Cage Rotor Induction Motor	01:03:44
Lecture 18	Numericals on Cage Rotor Induction Motor	00:16:24
Lecture 19	Speed Control of Induction MACHine	02:16:00
Lecture 20	Numericals on Speed Control of Induction MACHine	01:04:30
Lecture 21	Induction Generator and Braking in Motor	00:59:50
Lecture 22	Complete Torque Speed Charaterstics	00:10:31
Lecture 23	Numericals on Induction Generator and Braking in Motor	00:31:53
Lecture 24	Induction Motor Stability	00:27:21
Lecture 25	Questions on Induction Motor Stability	00:13:46
Lecture 26	Concept of Harmics in Rotating Machine	01:36:10
Lecture 27	Numericals on Concept of Harmics in Rotating Machine	00:22:46
Lecture 28	Induction Frequency Converters	00:45:04
Lecture 29	Singal Phase Induction Machine	02:25:29
Lecture 30	Numeriacls on Singal Phase Induction Machine	01:31:52

Chapter 03 ► Synchronous Machine

Lecture 01	Introduction of Synchronous Machine	01:46:41
Lecture 02	Construction	00:30:00
Lecture 03	Alternator Induced EMF	00:39:49
Lecture 04	Armature Winding	03:19:36
Lecture 05	Armature Reaction	00:51:47
Lecture 06	Synchronous Generator Electrical Model & Power Angle Curve	01:59:27
Lecture 07	Numerical on Electrical Model & Power Angle Curve	01:22:54
Lecture 08	Generator connected Infinite bus Bar	00:37:51
Lecture 09	Numerical on Power Angle Curve & Effect of Excitation	02:33:42
Lecture 10	Synchronous Motor	01:33:15
Lecture 11	Power Angle Equation in Synchronous Motor	01:04:21
Lecture 12	Numericals on Cylindrical Rotor Synchronous Motor	00:57:02
Lecture 13	Numericals on Power Angle in Synchronous Motor	02:28:24
Lecture 14	V Curve and Inverse V Curve	00:36:31
Lecture 15	Numericals on Synchronous motor connected to infinite bus bar	00:36:25
Lecture 16	Salient Pole Generator	03:00:05
Lecture 17	Salient Pole Motor	01:05:45
Lecture 18	Slip Test	00:29:39
Lecture 19	Numericals on Salient Pole Machine	00:53:30
Lecture 20	Voltage Regulation + PDF	00:21:17
Lecture 21	Numericals on Voltage Regulation	00:54:03
Lecture 22	OC and SC Test	01:14:05
Lecture 23	Parallel Operation of Synchronous Machine	00:33:30
Lecture 24	Numericals on Parallel Operation	02:05:34
Lecture 25	Synchronizing Power and Synchronizing Torque	01:14:29
Lecture 26	Synchronous Motor Starting and Hunting + PDF	00:29:23

Chapter 04 ► DC Machine

Lecture 01	Introduction of DC Machine	00:36:44
Lecture 02	Induced EMF in DC Machine	01:50:45
Lecture 03	Classification of DC Machine	00:44:46
Lecture 04	EMF and Torque Equation	00:20:14
Lecture 05	Numericals on Basics of DC Machine	00:21:15
Lecture 06	Power Flow in DC Machine	00:10:08
Lecture 07	Separately Excited DC Machine	01:25:06
Lecture 08	Numericals on Separately Excited DC Machine	00:54:09

Lecture 09	Shunt Machine	01:34:38
Lecture 10	Numericals on Shunt Wound DC Machine	01:13:36
Lecture 11	Series Machine	01:04:10
Lecture 12	Numericals on Series Wound DC Machine	00:25:00
Lecture 13	Compound DC Machine	01:47:02
Lecture 14	Numericals on Compound Machine	00:28:56
Lecture 15	Armature Reaction and Compensation	03:23:01
Lecture 16	Numericals on Armature Reaction and Compensation	00:28:09
Lecture 17	Speed Control of DC Machine	01:05:21
Lecture 18	Numericals of Speed Control	01:46:23
Lecture 19	Braking in DC Machine	00:22:00
Lecture 20	DC Motor Starters	PDF



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



ELECTROMAGNETIC FIELD (EMF)

ELECTRICAL ENGINEERING

Lecture Information

Chapter 01 ► Coordinate System and Electrostatics

Lecture 01	Cartesian Coordinate	00:26:28
Lecture 02	Cylindrical Coordinate System	00:40:06
Lecture 03	Spherical Coordinate System	00:37:39
Lecture 04	Del Operator	00:59:27
Lecture 05	Workbook Questions (Q1–Q3)	00:56:00
Lecture 06	Workbook Questions(Q4–Q8)	00:19:00
Lecture 07	Coulomb's Law & Electric Field Intensity	00:48:59
Lecture 08	Numerical Based on Coulombs Law & Electric Field Intensity	00:45:00
Lecture 09	Charge Distribution	01:50:00
Lecture 10	Numerical Based on Charge Distribution	00:48:00
Lecture 11	Workbook Questions (Q9–Q12)	00:39:00
Lecture 12	Workbook Questions(Q13–Q15)	00:22:00
Lecture 13	Electric Flux & Gauss Law	00:59:02
Lecture 14	Electric Due to Sphere & Numerical	01:02:00
Lecture 15	Workbook Questions (Q16–Q21)	00:30:00
Lecture 16	Electric Potential	00:30:00
Lecture 17	Numerical Based on Electric Potential	00:59:00
Lecture 18	Workbook Questions (Q22–Q28)	00:42:00

Lecture 19	Capacitance	00:45:00
Lecture 20	Workbook Questions (Q29–Q34)	00:52:00
Lecture 21	Method of Images	00:33:00
Lecture 22	Workbook Questions (Q35–Q36)	00:25:00
Lecture 23	Electric Boundary Condition	00:27:00
Lecture 24	Workbook Questions (Q37–Q41)	00:32:00
Lecture 25	Biot Savart's Law & Current Distribution System	00:22:00
Lecture 26	Magnetic Field Intensity due to Straight Filamentary Conductor	00:36:08
Lecture 27	Workbook Questions (Q1–Q3)	00:33:30
Lecture 28	Workbook Questions (Q4–Q8)	00:33:29
Lecture 29	Ampere's Law & Its Application	00:19:24
Lecture 30	Magnetic Field Due to Infinite Current Sheet	00:28:50
Lecture 31	Magnetic Field Due to Circular Conductor	00:26:00
Lecture 32	Workbook Questions (Q9–Q12)	00:17:26
Lecture 33	Magnetic Field Intensity Due to Co–axial Transmission Line	00:18:34
Lecture 34	Workbook Questions (Q13–Q16)	00:25:00
Lecture 35	Magnetic Flux & Flux Density	00:19:53
Lecture 36	Magnetic Field Due to Solenoid & Toroid	00:24:15
Lecture 37	Magnetic Boundary Condition	00:18:25
Lecture 38	Workbook Questions (Q19–Q21)	00:22:28
Lecture 39	Inductance & Workbook Questions (Q22–Q28)	00:18:19
Lecture 40	Faraday's Law & Workbook Questions(Q29–Q30)	00:19:45
Lecture 41	Magnetic Force	00:32:00
Lecture 42	Magnetic Scalar & Vector Potential	00:22:10
Lecture 43	Quick Revision Of EMFT	00:33:02



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



ENGINEERING MATHEMATICS

ELECTRICAL ENGINEERING

Lecture Information

Lecture 00	How to use PD-GD Course for Engineering Mathematics ?	00:28:44
------------	---	----------

Chapter 01 ► Linear Algebra

Lecture 01	Basics of Linear Algebra	00:48:39
Lecture 02	Basic of Operation of Matrix	01:21:13
Lecture 03	Types of Square Matrix	00:49:25
Lecture 04	Eigen Value & Caley Hamilton Theorem	01:02:23
Lecture 05	Eigen Vector & Concept of Diagonalization	01:14:16
Lecture 06	Rank of Matrix	01:11:06
Lecture 07	Solution of Linear Equation	00:36:36
Lecture 08	"Basis of Vectors	00:25:23

Chapter 02 ► Differential Equation

Lecture 01	Basic of Differential Equation	00:27:01
Lecture 02	Solution of Ordinary Differential Equation	00:13:18
Lecture 03	Solution of Homogeneous Differential Equation	00:37:40
Lecture 04	Solution of Non-Homogeneous Differential Equation	00:56:46
Lecture 05	Cauchy Linear Differential Equation	00:17:54
Lecture 06	First Order First Degree Differential Equation	00:44:55

Lecture 07	Partial Differential Equation	00:40:33
Lecture 08	Basics of Partial Differential Equation	00:19:20
Lecture 09	"Solutions of Partial Differential Equations"	00:43:03
Lecture 10	First Order First Degree Differential Equation (Non-exact)	00:46:11

Chapter 03 ▶ Integral Calculus

Lecture 01	Basic of Integral Calculus	00:37:55
Lecture 02	Special Function (Gamma & Beta)	00:53:06
Lecture 03	Change of Order (Double Integral)	00:50:14
Lecture 04	Application of Integral	01:11:10
Lecture 05	Zero level concept of integration	00:51:50
Lecture 06	Basic of proper and improper integrals	00:28:29

Chapter 04 ▶ Vector Calculus

Lecture 01	Basic of Vector	00:46:16
Lecture 02	Del Operator	00:08:03
Lecture 03	Gradient, Divergence, Curl & Directional Derivative	00:49:13
Lecture 04	Problem Based on G, D & C	00:37:04
Lecture 05	Vector Integral Calculus	00:13:07
Lecture 06	Stoke & Gauss Theorem	00:24:54
Lecture 07	Problem Based on Stoke & Gauss Theorem	00:49:00
Lecture 08	Miscellaneous	00:19:02

Chapter 05 ▶ Maxima Minima

Lecture 01	Concept of Maxima & Minima (One Independent Variable)	00:18:33
Lecture 02	Analysis of Maxima & Minima	00:17:18
Lecture 03	Questions on Maxima & Minima	00:14:01
Lecture 04	Concept of Maxima & Minima (Two Independent Variable)	00:07:53
Lecture 05	Miscellaneous Questions on Maxima & Minima	00:30:06

Chapter 06 ▶ Mean Value Theorem

Lecture 01	Basic of Functions & Limits	00:15:12
Lecture 02	Continuity & Differentiability	00:54:21
Lecture 03	Rolle & Lagrange's MVT	00:28:30

Chapter 07 ▶ Complex Variable

Lecture 01	Basic of Complex Variable	00:29:32
Lecture 02	Concept of Analytic Function	00:53:35
Lecture 03	Complex Integral	00:12:47
Lecture 04	Residue Theorem & Cauchy Theorem	01:07:02

Lecture 05	Complex Series Expansion	00:33:02
Lecture 06	Basic of Zeros & Singularities	00:19:04

Chapter 08 ► Limits & Series Expansion

Lecture 01	Limits	00:33:36
Lecture 02	Series Expansion	00:40:43
Lecture 03	Fourier Series	00:32:21
Lecture 04	Laplace Transform	00:48:00

Chapter 09 ► Probability

Lecture 01	Sample Space	00:35:33
Lecture 02	Events	00:23:42
Lecture 03	Basic Of Probability	00:45:07
Lecture 04	Probability of Distribution (Binomial)	00:30:27
Lecture 05	Poisson Distribution	00:13:27
Lecture 06	Normal Distribution	00:32:39
Lecture 07	Random Variable	01:29:04
Lecture 08	Central Tendency (Mean, median, mode)	00:55:22
Lecture 09	Standard deviation & Coefficient of Variance	00:06:14
Lecture 10	Questions Based on Central Tendency	00:34:02
Lecture 11	Basics of Correlation & Regression Analysis	00:40:45
Lecture 12	Some more on probability(Bayes theorem) (Part-1)	00:24:58
Lecture 13	Some more on probability (Part-2)	00:20:31

Chapter 10 ► Numerical Methods

Lecture 01	Methods to solve Non-Linear Algebraic Equation	00:54:03
Lecture 02	Question of Non-Linear Algebraic Equation	00:30:55
Lecture 03	Methods to Solve Differential Equation	00:12:25
Lecture 04	Question of Differential Equation	00:30:30
Lecture 05	Method to Solve Numerical Integral	00:15:05
Lecture 06	Questions of Numerical Integrals	00:24:59

Preparation Strategy ►

Lecture 01	Prepare GATE Maths Strategically ??? By : Gurupal Sir	00:48:00
------------	---	----------



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



ELECTRICAL & ELECTRONICS MEASUREMENTS

ELECTRICAL ENGINEERING



Lecture Information

Lecture 00	How to Study Electrical & Electronic Measurements ?	00:57:58
------------	---	----------

Chapter 01 ► AC Bridge

Lecture 01	Introduction to Electrical & Electronics Measurements	00:34:35
Lecture 02	Introduction to Bridge Network	00:26:48
Lecture 03	Wheatstone Bridge (Part 1)	00:29:38
Lecture 04	Wheatstone Bridge (Part 2)	00:26:26
Lecture 05	Wheatstone Bridge (Part 3)	00:35:16
Lecture 06	Wheatstone Bridge (Part 4)	00:13:06
Lecture 07	Concept of Sensitivity	00:14:07
Lecture 08	Workbook Questions on Wheatstone Bridge (Part 1)	00:21:22
Lecture 09	Workbook Questions on Wheatstone Bridge (Part 2)	00:07:55
Lecture 10	Workbook Questions on Wheatstone Bridge (Part 3)	00:16:33
Lecture 11	Workbook Questions on Wheatstone Bridge (Part 4)	00:14:28
Lecture 12	Introduction to AC Bridge	00:28:22
Lecture 13	Arm Combinations	00:30:45
Lecture 14	Source & Detectors	00:18:00
Lecture 15	Maxwell Bridge	00:27:31
Lecture 16	Analysis of Maxwell Bridge	00:09:24

Lecture 17	Hay's Bridge	00:34:26
Lecture 18	Analysis of Hay's Bridge	00:13:00
Lecture 19	Anderson Bridge	00:22:54
Lecture 20	Owen's Bridge (Part 1)	00:22:40
Lecture 21	Owen's Bridge (Part 2)	00:19:42
Lecture 22	Introduction to Capacitance Measurement	00:10:43
Lecture 23	Capacitance Measurement by De Sauty's Bridge (Unmodified)	00:11:17
Lecture 24	Capacitance Measurement by De Sauty's Bridge (Modified)	00:19:40
Lecture 25	Schering Bridge	00:16:31
Lecture 26	Application of Schering Bridge	00:19:38
Lecture 27	Frequency Measurement by Wein Bridge	00:35:06
Lecture 28	Wagner earthing device	00:17:46
Lecture 29	Workbook Questions 1&2	00:26:05
Lecture 30	Workbook Questions 3&6	00:22:51
Lecture 31	Workbook Questions 8&9	00:15:35
Lecture 32	Workbook Questions 11&12	00:23:15

Chapter 02 ► Basic Instruments

Lecture 01	Introduction to Basic Instruments	00:15:41
Lecture 02	Controlling Torque & Damping Torque	00:11:14
Lecture 03	Spring Control Technique	00:05:09
Lecture 04	Gravity Control Technique	00:05:40
Lecture 05	Concept of Torque	00:09:47
Lecture 06	Permanent Magnet Moving Coil Instrument	00:04:59
Lecture 07	PMMC Ammeter and its Range Extension	00:07:04
Lecture 08	Compensation of Temperature Error in PMMC Ammeter	00:03:34
Lecture 09	PMMC Voltmeter and its Range Extension	00:06:53
Lecture 10	Concept of Sensitivity	00:14:51
Lecture 11	Full Concept of Moving Iron Instrument	00:33:54
Lecture 12	Moving Iron Ammeter & It's Range Extension	00:09:44
Lecture 13	Moving Iron Voltmeter & It's Range Extension	00:10:03
Lecture 14	Frequency Compensation in Moving Iron Voltmeter	00:04:54
Lecture 15	Electromagnetic Moving Coil Instruments	00:06:26
Lecture 16	Concept of Deflecting Torque in Electromagnetic Moving ..	00:20:49
Lecture 17	Analysis of Electromagnetic Moving Coil Instruments	00:03:50
Lecture 18	Introduction to Electrostatic Voltmeter	00:05:35
Lecture 19	Range Extension of Electrostatic Voltmeter	00:06:15
Lecture 20	Introduction to Rectifier type of Instruments	00:17:15
Lecture 21	Rectifier type of Instruments with Half Wave Rectifier	00:26:07
Lecture 22	Rectifier type of Instruments with Full Wave Rectifier	00:10:07

Lecture 23	Workbook Questions on Rectifier type Instruments	00:19:20
Lecture 24	Workbook Questions 1–3	00:33:18
Lecture 25	Workbook Questions 4&5	00:17:01
Lecture 26	Workbook Questions 6&7	00:06:59
Lecture 27	Workbook Questions 9&10	00:16:19
Lecture 28	Workbook Questions 12&13	00:15:37
Lecture 29	Workbook Questions 15&16	00:17:34
Lecture 30	Workbook Questions 17&18	00:33:06
Lecture 31	Workbook Questions 19&20	00:21:00
Lecture 32	Workbook Questions 21&22	00:06:18

Chapter 03 ► Measurement of Power

Lecture 01	Introduction to Measurement of Power	00:05:22
Lecture 02	Measurement of Power by using Voltmeter–Ammeter Method	00:18:27
Lecture 03	Concept of Power in AC Circuit (Part 1)	00:26:19
Lecture 04	Concept of Power in AC Circuit (Part 2)	00:05:59
Lecture 05	Concept of Power in AC Circuit (Part 3)	00:20:11
Lecture 06	Introduction to Measurement of Power in AC Circuit	00:06:27
Lecture 07	Construction & Working of Electrodynamometer type wattmeter	00:18:23
Lecture 08	Concept of Deflecting Torque in Wattmeter	00:08:09
Lecture 09	Basic application of Wattmeter in single phase AC circuit (Part 1)	00:24:23
Lecture 10	Basic application of Wattmeter in single phase AC circuit (Part 2)	00:19:46
Lecture 11	Blondel's Theorem	00:09:46
Lecture 12	Basic Concept of Star & Delta Connection	00:19:26
Lecture 13	Measurement of 3 phase Power by using One Watt ..	00:37:12
Lecture 14	Measurement of 3 phase Power by using Two Watt ..	00:38:59
Lecture 15	Analysis of Two Wattmeter Method	00:08:51
Lecture 16	Measurement of 3 phase Power by using Two Watt..	00:22:41
Lecture 17	Measurement of 3 phase Power by using Three Watt ..	00:08:07
Lecture 18	Measurement of Reactive Power in 3 phase circuit	00:20:13
Lecture 19	Errors in wattmeter reading due to connections (Part 1)	00:29:58
Lecture 20	Errors in wattmeter reading due to connections (Part 2)	00:22:35
Lecture 21	Error in wattmeter (Part 3)	00:30:37
Lecture 22	Low power factor wattmeter	00:11:50
Lecture 23	Workbook Question 1	00:22:19
Lecture 24	Workbook Question 2	00:25:24
Lecture 25	Workbook Questions 3–4	00:19:45
Lecture 26	Workbook Questions 5–6	00:27:59
Lecture 27	Workbook Questions 7–8	00:15:26
Lecture 28	Workbook Questions 9–10	00:25:48
Lecture 29	Workbook Questions 11	00:06:43

Chapter 04 ► Measurement of Energy

Lecture 01	Introduction to Energy Meter	00:11:30
Lecture 02	Construction and Working of Energy Meter	00:25:12
Lecture 03	Errors & Compensation in Energy Meter	00:33:51
Lecture 04	Workbook Questions 1–3	00:22:09
Lecture 05	Workbook Questions 4–5	00:15:38

Chapter 05 ► Measurement of Resistance

Lecture 01	Introduction to Resistance	00:24:52
Lecture 02	Measurement of Low Resistance	00:16:03
Lecture 03	Measurement of Medium Resistance (Part 1)	00:24:16
Lecture 04	Measurement of Medium Resistance (Part 2)	00:17:20
Lecture 05	Measurement of High Resistance	00:32:26
Lecture 06	Workbook Questions	00:33:16

Chapter 06 ► Potentiometer

Lecture 01	Introduction to Potentiometer	00:16:29
Lecture 02	Measurements of unknown voltage source by using Pote ..	00:37:12
Lecture 03	Applications of Potentiometer	00:19:53
Lecture 04	Potentiometric Transducer	00:30:38
Lecture 05	Workbook Questions 1–2	00:21:26
Lecture 06	Workbook Questions 3–4	00:19:38
Lecture 07	Workbook Questions 5–6	00:15:58

Chapter 07 ► Instrument Transformers

Lecture 01	Introduction to Transformer	00:30:55
Lecture 02	Phasor Diagram of Transformer at No Load	00:12:51
Lecture 03	Phasor Diagram of Transformer at Load	00:03:58
Lecture 04	Current Transformer (Part 1)	00:29:26
Lecture 05	Current Transformer (Part 2)	00:17:32
Lecture 06	Potential Transformer	00:19:17
Lecture 07	Methods of Reducing Errors	00:05:18
Lecture 08	Workbook Questions 1–2	00:15:05
Lecture 09	Workbook Questions 3–4	00:12:15
Lecture 10	Workbook Questions 5–6	00:09:36

Chapter 08 ► Error Analysis

Lecture 01	Introduction to Error Analysis	00:25:20
Lecture 02	Types of Error	00:21:09

Lecture 03	Characteristics of Instruments (Part 1)	00:18:53
Lecture 04	Characteristics of Instruments (Part 2)	00:21:39
Lecture 05	Characteristics of Instruments (Part 3)	00:17:23
Lecture 06	Characteristics of Instruments (Part 4)	00:11:06
Lecture 07	Characteristics of Instruments (Part 5)	00:13:57
Lecture 08	Characteristics of Instruments (Part 6)	00:22:52
Lecture 09	Characteristics of Instruments (Part 7)	00:19:52
Lecture 10	Gross, System & Random Errors	00:08:26
Lecture 11	Random Error Analysis	00:18:44
Lecture 12	Mathematical Operations including Errors	00:32:34
Lecture 13	Statistical Error Analysis (Part 1)	00:19:43
Lecture 14	Statistical Error Analysis (Part 2)	00:24:10
Lecture 15	Standard Deviation & Uncertainty	00:22:47
Lecture 16	Workbook Questions 1–2	00:30:21
Lecture 17	Workbook Questions 3–4	00:17:53
Lecture 18	Workbook Questions 5–6	00:16:33
Lecture 19	Workbook Questions 7–8	00:22:22
Lecture 20	Workbook Questions 9–10	00:09:12

Chapter 09 ► Q–Meter

Lecture 01	Introduction to Q Meter	00:22:31
Lecture 02	Applications of Q Meter	00:28:39
Lecture 03	Measurements of Capacitance	00:11:06
Lecture 04	Measurements of Distributed Capacitance	00:12:19
Lecture 05	Workbook Questions 1–2	00:12:58
Lecture 06	Workbook Questions 4–7	00:17:02

Chapter 10 ► Cathode Ray Oscilloscope

Lecture 01	Working & Construction of CRO (Part 1)	00:31:53
Lecture 02	Working & Construction of CRO (Part 2)	00:09:10
Lecture 03	Derivation of Deflection Sensitivity	00:09:07
Lecture 04	Equivalent Circuit of CRO	00:19:13
Lecture 05	Modes of CRO	00:10:28
Lecture 06	Plotting of Signals on CRO	00:08:31
Lecture 07	Analysis of Y–t Mode of Operation of CRO	00:18:26
Lecture 08	Screen of CRO & Sensitivity	00:25:47
Lecture 09	X–Y Mode of Operation	00:09:38
Lecture 10	Synchronization and Triggering	00:36:03
Lecture 11	Basics of Lissajous Figures (Part 1)	00:12:54

Lecture 12	Basics of Lissajous Figures (Part 2)	00:33:11
Lecture 13	Phase Measurement using Lissajous Figures (Part 1)	00:15:58
Lecture 14	Phase Measurement using Lissajous Figures (Part 2)	00:15:58
Lecture 15	Phase Measurement using Lissajous Figures (Part 3)	00:11:45
Lecture 16	Phase Measurement using Lissajous Figures (Part 4)	00:09:37
Lecture 17	Phase Measurement using Lissajous Figures (Part 5)	00:09:39
Lecture 18	Phase Measurement using Lissajous Figures (Part 6)	00:19:04
Lecture 19	Conclusion of Lissajous Figures	00:14:12
Lecture 20	Visualization of Lissajous Figures	00:26:23
Lecture 21	Concept of Superellipse (Part 1)	00:20:59
Lecture 22	Concept of Superellipse (Part 2)	00:22:51
Lecture 23	Overall Conclusion of Lissajous Figures	00:17:45
Lecture 24	Measurement of Unknown Frequency	00:21:28
Lecture 25	Workbook Questions 1–2	00:08:33
Lecture 26	Workbook Questions 3–4	00:21:54
Lecture 27	Workbook Questions 5–6	00:21:16
Lecture 28	Workbook Questions 7–8	00:19:21
Lecture 29	Workbook Questions 9–10	00:09:05
Lecture 30	Workbook Questions 11–12	00:20:56
Lecture 31	Workbook Questions 13–14	00:15:16
Lecture 32	Workbook Questions 15–17	00:21:27
Lecture 33	Workbook Questions 18	00:27:15

Chapter 11 ► Digital Voltmeter (DVM)

Lecture 01	Introduction to DVM	00:11:14
Lecture 02	Working of DVM	00:22:19
Lecture 03	Concept of Resolution	00:22:04
Lecture 04	Types of DVM	00:27:02
Lecture 05	Analysis of Formulas in DVM	00:14:27
Lecture 06	Workbook Questions on DVM	00:22:46
Lecture 07	Introduction to Timer & Counter	00:14:41
Lecture 08	Period Mode of Operation	00:10:10
Lecture 09	Frequency Mode of Operation	00:07:16
Lecture 10	Workbook Questions on Timer & Counter	00:11:46



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



NETWORK THEORY

ELECTRICAL ENGINEERING

Lecture Information

Lecture 00	How to use PD-GD Course for Network Theory ?	00:21:58
------------	--	----------

Chapter 01 ► Basic Concept of Networks

Lecture 01	Types of Network Element	00:51:05
Lecture 02	Analysis of Passive Elements (Resistor)	00:25:39
Lecture 03	Absorbed and Delivered Power	00:24:01
Lecture 04	Analysis of Passive Elements (Inductor)	00:16:56
Lecture 05	Analysis of Passive Elements (Capacitor)	00:15:54
Lecture 06	Series and Parallel Equivalent	00:27:41
Lecture 07	Kirchoff's Law (KVL and KCL)	00:19:38
Lecture 08	Example based on KVL & KCL	00:32:44
Lecture 09	Voltage Divider and Current Divider Rule	00:30:33
Lecture 10	Star to Delta and Delta to Star Conversion	00:27:52
Lecture 11	Lattice Network	00:14:18
Lecture 12	Representation of Voltage and Current Source	00:26:03
Lecture 13	Questions based on Voltage and Current Source Representation	00:12:23
Lecture 14	Important Equivalent Circuit	00:19:02
Lecture 15	Source Transformation	00:28:07
Lecture 16	Important Practice Question (Part –1)	00:12:32

Lecture 17	Important Practice Question (Part –2)	00:09:08
Lecture 18	Important Practice Question (Part –3)	00:11:03
Lecture 19	Important Practice Question (Part –4)	00:08:05
Lecture 20	Important Practice Question (Part –5)	00:05:43
Lecture 21	Important Practice Question (Part –6)	00:12:18
Lecture 22	Important Practice Question (Part –7)	00:07:52
Lecture 23	Important Practice Question (Part –8)	00:12:18
Lecture 24	Important Practice Question (Part –9)	00:07:33
Lecture 25	Important Practice Question (Part –10)	00:07:46
Lecture 26	Important Practice Question (Part –11)	00:06:17
Lecture 27	Important Practice Question (Part –12, part a and part b)	00:07:36
Lecture 28	Important Practice Question (Part –13)	00:15:35
Lecture 29	Important Practice Question (Part –14)	00:42:04
Lecture 30	Voltmeter and Ammeter	00:16:11
Lecture 31	Question based on Voltmeter and Ammeter	00:12:58
Lecture 32	Concept of Supernode with Example	00:18:31
Lecture 33	Question based on Supernode	00:08:57
Lecture 34	Concept of Supermesh with Example	00:09:06
Lecture 35	Question based on Supernode and Supermesh	00:13:51
Lecture 36	Important Question based on Capacitor (Part–1)	00:06:46
Lecture 37	Important Question based on Capacitor (Part–2)	00:10:52
Lecture 38	Important Question based on Capacitor (Part–3)	00:11:57
Lecture 39	Important Question based on Capacitor (Part–4)	00:13:36
Lecture 40	Average and RMS Value of Periodic Waveform (Part–1)	00:32:14
Lecture 41	Average and RMS Value of Periodic Waveform (Part–2)	00:11:01
Lecture 42	Concept of Equipotential With Example	00:29:54
Lecture 43	Important Example based on Equipotential (Part–1)	00:06:54
Lecture 44	Important Example based on Equipotential (Part–2)	00:25:30
Lecture 45	Important Question based on Equipotential (Part–3)	00:16:37
Lecture 46	Equivalent Impedance of Cube	00:08:52
Lecture 47	Equivalent Resistance across diagonal of Cube	00:16:10
Lecture 48	Equivalent Resistance across edge of Cube	00:13:57
Lecture 49	Equivalent Resistance across diagonal of face of Cube	00:15:22

Chapter 02 ► Two–port Networks

Lecture 01	Introduction of Two Port Network	00:09:13
Lecture 02	Introduction of Z–Parameter	00:33:39
Lecture 03	Example based on Z–Parameter	00:18:05
Lecture 04	Z–Parameter of Symmetric Lattice Network	00:14:54
Lecture 05	Introduction of Y Parameter	00:22:28

Lecture 06	Example based on Y Parameter	00:25:50
Lecture 07	Reciprocal and Symmetrical Network	00:26:37
Lecture 08	Question based on Z and Y Parameter(Dependent Source)	00:14:10
Lecture 09	Question based on Z and Y Parameter(Depen.. (Part-2)	00:19:24
Lecture 10	Introduction of h-Parameter	00:16:48
Lecture 11	Example based on h Parameter	00:24:43
Lecture 12	Question based on h-Parameter	00:07:43
Lecture 13	Introduction of g-Parameter	00:07:47
Lecture 14	Introduction of Transmission and Inverse Trans ..	00:09:40
Lecture 15	Example based on ABCD Parameter	00:12:08
Lecture 16	Question based on ABCD Parameter	00:11:30
Lecture 17	Important Question (Part-1)	00:08:41
Lecture 18	Important Question (Part-2)	00:09:48
Lecture 19	Important Question (Part-3)	00:12:14
Lecture 20	Important Question (Part-4)	00:16:18
Lecture 21	Transformer as a Two Port Network	00:20:05
Lecture 22	Gyrator as a Two Port Network	00:11:44
Lecture 23	Interconnection of Two Port Network (Part-1)	00:18:20
Lecture 24	Interconnection of Two Port Network (Part-2)	00:09:03
Lecture 25	Interconnection of Two Port Network (Part-3)	00:10:13
Lecture 26	Question based on Cascade Connection (Part-1)	00:14:04
Lecture 27	Question based on Cascade Connection (Part-2)	00:14:33
Lecture 28	Question based on Cascade Connection (Part-3)	00:21:05
Lecture 29	Question based on Parallel Connection	00:17:37
Lecture 30	Important Question	00:17:26
Lecture 31	Good Concept Through Question	00:19:25
Lecture 32	Characteristic Impedance of Network	00:08:52
	Bartlett's Bisection Theorem	PDF

Chapter 03 ► Network Theorems

Lecture 01	Introduction of Thevenin's Theorem	00:13:44
Lecture 02	Example Based on Thevenin's Theorem (Part-1)	00:23:04
Lecture 03	Example Based on Thevenin's Theorem (Part-2)	00:10:40
Lecture 04	Question Based on Thevenin's Theorem (Part-1)	00:15:09
Lecture 05	Question Based on Thevenin's Theorem (Part-2)	00:15:19
Lecture 06	Question Based on Thevenin's Theorem (Part-3)	00:06:16
Lecture 07	Question Based on Thevenin's Theorem (Part-4)	00:13:51
Lecture 08	Question Based on Thevenin's Theorem (Part-5)	00:17:06
Lecture 09	Question Based on Thevenin's Theorem (Part-6)	00:09:00
Lecture 10	Introduction of Norton's Theorem	00:11:36

Lecture 11	Question on Norton's Theorem (Part-1)	00:08:02
Lecture 12	Question Based on Norton's Theorem (Part-2)	00:10:34
Lecture 13	Question Based on Thevenin & Norton (Part-1)	00:05:12
Lecture 14	Question Based on Thevenin & Norton (Part-2)	00:17:11
Lecture 15	Question Based on Thevenin & Norton (Part-3)	00:13:54
Lecture 16	Important Question (miscellaneous)	00:15:52
Lecture 17	Introduction of Maximum Power Transfer Theorem	00:17:16
Lecture 18	Question Based on M.P.T	00:11:21
Lecture 19	Question based on MPT (Part-2)	00:17:22
Lecture 20	MPT in Complex Network	00:25:06
Lecture 21	Question based on MPT (Complex Network) (Part-1)	00:10:45
Lecture 22	Question Based on MPT (Complex Network) (Part-2)	00:11:23
Lecture 23	Important Question Based on MPT (Part-1)	00:16:15
Lecture 24	Important Question Based on MPT (Part-2)	00:13:47
Lecture 25	Introduction of Superposition Theorem	00:25:33
Lecture 26	Question Based on Superposition Theorem (Part-1)	00:10:30
Lecture 27	Question Based on Superposition Theorem (Part-2)	00:11:52
Lecture 28	Concept and Example of Reciprocity Theorem	00:12:00
Lecture 29	Question Based on Reciprocity Theorem (Part-1)	00:07:34
Lecture 30	Question Based on Reciprocity Theorem (Part-2)	00:06:52
Lecture 31	Question Based on Reciprocity Theorem (Part-3)	00:11:39
Lecture 32	Question Based on Reciprocity Theorem (Part-4)	00:10:36
Lecture 33	Question Based on Reciprocity Theorem (Part-5)	00:07:33
Lecture 34	Introduction of Millman's & Dual of Millman's Theorem	00:12:36
Lecture 35	Seven methods for single question	00:35:06

Chapter 04 ► Transient Analysis

Lecture 01	Introduction of Transient	00:52:42
Lecture 02	Example of 0^- 0 0^+ in Transient Analysis	00:16:27
Lecture 03	Analysis of First order Differential Equation	00:23:37
Lecture 04	Transform Domain of Inductor & Capacitor	00:14:11
Lecture 05	Questions Based on RL Network (1)	00:53:20
Lecture 06	Questions Based on RL Network (2)	00:19:36
Lecture 07	Concept of Time Constant in RL Circuit	00:31:04
Lecture 08	Questions Based on RL Network (3)	00:21:18
Lecture 09	Questions Based on RL Network (4)	00:11:57
Lecture 10	Questions Based on RL Network (5)	00:06:53
Lecture 11	Questions Based on RL Network (6)	00:10:29
Lecture 12	Questions Based on RL Network (7)	00:11:23

Lecture 13	Questions Based on RL Network (8)	00:34:41
Lecture 14	Questions Based on RL Network (9)	00:24:47
Lecture 15	Questions Based on RL Network (10)	00:09:09
Lecture 16	Impulse & Step Response of Series RL Network	00:25:05
Lecture 17	Pulse Response of Series RL Network	00:20:35
Lecture 18	Important Question of Series RL Network (11)	00:44:30
Lecture 19	Important Question of RL Network (12)	00:10:35
Lecture 20	Important Question of RL Network (13)	00:14:25
Lecture 21	Transient & Steady State Behavior of Capacitor	00:37:57
Lecture 22	Question Based on RC Network (1)	00:12:15
Lecture 23	Question Based on RC Network (2)	00:06:15
Lecture 24	Question Based on RC Network (3)	00:26:09
Lecture 25	Question Based on RC Network (4)	00:19:38
Lecture 26	Question Based on RC Network (5)	00:21:10
Lecture 27	Question Based on RC Network (6)	00:11:33
Lecture 28	Question Based on RC Network (7)	00:11:08
Lecture 29	Important Question on RC Network (8)	00:25:20
Lecture 30	Important Question on RC Network (9)	00:16:00
Lecture 31	Most Important Concept of RC Network	00:55:24
Lecture 32	Question Based on RLC Network (1)	00:08:14
Lecture 33	Question Based on RLC Network (2)	00:08:35
Lecture 34	Question Based on RLC Network (3)	00:14:00
Lecture 35	Question Based on RLC Network (4)	00:40:27
Lecture 36	Question Based on RLC Network (5)	00:26:16
Lecture 37	Challenging Question of Transient	00:19:51

Chapter 05 ► Sinusoidal Steady State Response

Lecture 01	Introduction of Sinusoidal Steady State Analysis	00:29:33
Lecture 02	Question based on Sinusoidal Steady .. (Q1–Q2)	00:10:17
Lecture 03	Question based on Sinusoidal Steady .. (Q3–Q4)	00:15:06
Lecture 04	Question based on Sinusoidal Steady .. (Q5–Q6)	00:19:57
Lecture 05	Concept of Transient Free Response	00:22:39
Lecture 06	Question Based on Transient Free Response (Q7–Q8)	00:06:15
Lecture 07	Question Based on Transient Free Response (Q9)	00:15:08

Chapter 06 ► Phasor and Locus Diagram

Lecture 01	Introduction of Phasor Diagram	00:14:11
Lecture 02	Series RL Network	00:29:58
Lecture 03	Series RC Network	00:11:56

Lecture 04	Series RLC Network	00:16:35
Lecture 05	Parallel RL Network	00:14:10
Lecture 06	Parallel RC Network	00:09:04
Lecture 07	Parallel RLC Network	00:14:51
Lecture 08	Question Based on Phasor Diagram (Q1–Q2)	00:12:45
Lecture 09	Question Based on Phasor Diagram (Q3–Q4)	00:16:06
Lecture 10	Question Based on Phasor Diagram (Q5–Q6)	00:17:19
Lecture 11	Question Based on Phasor Diagram (Q7–Q8)	00:14:10
Lecture 12	Question Based on Phasor Diagram (Q9–Q10)	00:14:45
Lecture 13	Introduction of Locus Diagram	00:15:27
Lecture 14	Locus Diagram of Series RL Network	00:16:55
Lecture 15	Locus Diagram of Series RC Network	00:16:19
Lecture 16	Question Based on Locus Diagram (Q12–Q13)	00:20:21
Lecture 17	Question Based on Locus Diagram (Q14)	00:16:16
Lecture 18	Question Based on Locus Diagram (Q15)	00:11:07

Chapter 07 ► Resonance

Lecture 01	Series RLC Resonance Circuit	00:48:23
Lecture 02	Paraller RLC Resonance Circuit	00:28:35
Lecture 03	Quality Factor	00:32:35
Lecture 04	Question Based on Resonance (Q1–Q2)	00:11:09
Lecture 05	Question Based on Resonance (Q3–Q4)	00:12:22
Lecture 06	Question Based on Resonance (Q5–Q6)	00:06:57
Lecture 07	Question Based on Resonance (Q7–Q8)	00:16:19
Lecture 08	Question Based on Resonance (Q9–Q10)	00:08:58
Lecture 09	Question Based on Resonance (Q11–Q12)	00:15:47
Lecture 10	Question Based on Resonance (Q13–Q14)	00:34:14
Lecture 11	Important Question Based on Resonance (Part–1)	00:13:19
Lecture 12	Question Based on Resonance (Q15–Q16)	00:08:42
Lecture 13	Important Question Based on Resonance (Part–2)	00:26:01
Lecture 14	Question Based on Resonance (Q17–Q18)	00:14:05
Lecture 15	Maximum Voltage Across R, L & C	00:21:15

Chapter 08 ► Complex Power

Lecture 01	Introduction of Complex Power	00:32:00
Lecture 02	Example Based on Complex Power	00:13:37
Lecture 03	Question Based on Complex Power (Q 1)	00:13:21
Lecture 04	Question Based on Complex Power (Q2)	00:10:51
Lecture 05	Question Based on Complex Power (Q3–Q4)	00:07:41

Lecture 06	Question Based on Complex Power (Q5)	00:11:11
Lecture 07	Question Based on Complex Power (Q6–Q7)	00:08:19
Lecture 08	Question Based on Complex Power (Q8)	00:13:08
Lecture 09	Question Based on Complex Power (Q9 & Q10)	00:18:12
Lecture 10	Question Based on Complex Power (Q11)	00:08:43
Lecture 11	Question Based on Complex Power (Q12)	00:16:11
Lecture 12	Question Based on Complex Power (Q13–Q14)	00:16:13
Lecture 13	Question Based on Complex Power (Q15)	00:17:04

Chapter 09 ► Magnetic Coupling

Lecture 01	Introduction of Magnetic Coupling	00:31:21
Lecture 02	Concept Of Dot Notation	00:18:04
Lecture 03	Example Based On Notation	00:16:07
Lecture 04	Series Equivalent Circuit	00:08:58
Lecture 05	Parallel Equivalent Circuit	00:13:50
Lecture 06	Question Based On Magnetic Coupling (Part–1)	00:04:27
Lecture 07	Question Based On Magnetic Coupling (Part–2)	00:12:26
Lecture 08	Question Based On Magnetic Coupling (Part–3)	00:05:30
Lecture 09	Question Based On Magnetic Coupling (Part–4)	00:09:21
Lecture 10	Question Based On Magnetic Coupling (Part–5)	00:07:53
Lecture 11	Concept of Reflected input impedance of Transformer	00:09:53
Lecture 12	Question Based On Magnetic Coupling (Part–6)	00:15:02

Chapter 10 ► Graph Theory

Lecture 01	Introduction of Graph Theory	00:35:23
Lecture 02	Tree & Complementary Tree	00:28:24
Lecture 03	Incidence & Reduced Incidence Matrix	00:55:30
Lecture 04	Tie–Set & Cut Set Matrix	00:31:34
Lecture 05	Question Based on Graph Theory	00:51:00



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



POWER SYSTEM ANALYSIS

ELECTRICAL ENGINEERING

Lecture Information

PSA ► 1

Lecture 00	How to use PD–GD Course for Power System Analysis ?	00:18:28
------------	---	----------

Chapter 01 ► Parameters of Transmission Lines

Lecture 01	Introduction to Power System	00:11:29
Lecture 02	Objective to Power System	00:15:19
Lecture 03	Power Transmission	00:13:34
Lecture 04	Advantage of High Voltage	00:09:44
Lecture 05	HVAC & HVDC	00:11:00
Lecture 06	Types of Conductor	00:39:57
Lecture 07	Skin Effect	00:14:58
Lecture 08	Inductance of Transmission Line	00:17:59
Lecture 09	Internal Inductance of Conductor	00:34:19
Lecture 10	External Inductance of Conductor	00:29:30
Lecture 11	Inductance of One phase Two Wire Line	00:36:27
Lecture 12	Flux Linkage of one Conductor in a Group	00:29:26
Lecture 13	Inductance of Symmetrical 3 – f System with Symmetrical...	00:12:27
Lecture 14	Inductance of Symmetrical 3 – f System with Unsymmetrical...	00:46:33
Lecture 15	Flat Spacing	00:13:16

Lecture 16	Power line & Telephone Line	00:53:21
Lecture 17	Untransposed Three Phase Power Line	00:13:25
Lecture 18	Transposed Power Line	00:15:59
Lecture 19	Inductance of Composite Conductance	00:41:07
Lecture 20	GMR & GMD	00:47:15
Lecture 21	Electric Field of Long Straight Conductor	00:30:20
Lecture 22	Capacitance of Two Wire Line	00:26:46
Lecture 23	Capacitance of 3 – f line with Equilateral Spacing	00:18:52
Lecture 24	Capacitance of 3 – f line with un–symmetrical Spacing	00:35:15
Lecture 25	Method of Images	00:22:43
Lecture 26	Effect of Earth	00:27:11

Chapter 02 ► Performance of Transmission Line

Lecture 01	Introduction to Transmission Line	00:27:11
Lecture 02	Distributed Parameter model	00:26:56
Lecture 03	Classification of Transmission Line	00:30:54
Lecture 04	Introduction to Short Transmission Line	00:11:11
Lecture 05	ABCD Parameter of Transmission Line	00:44:37
Lecture 06	Voltage Regulation	00:20:14
Lecture 07	Voltage Regulation for Lagging Power Factor	00:24:21
Lecture 08	Voltage Regulation for Leading Power Factor	00:11:02
Lecture 09	Maximum and zero voltage Regulation	00:26:54
Lecture 10	Voltage Regulation for Lossless & Lossy Transmission Line	00:30:59
Lecture 11	Voltage Regulation Curve	00:14:16
Lecture 12	Introduction to Medium Transmission Line	00:10:46
Lecture 13	Load Condenser Method	00:28:28
Lecture 14	Source Condenser Method	00:11:49
Lecture 15	Nominal T Method	00:26:56
Lecture 16	Nominal Pi Method	00:43:09
Lecture 17	Long Transmission Line	00:42:56
Lecture 18	Graphical Analysis	00:14:39
Lecture 19	ABCD Parameter of Long Transmission Line	00:19:43
Lecture 20	Alpha, Beta, Lemda	00:26:26
Lecture 21	Lossless and Distortionless Transmission Line	00:29:16
Lecture 22	Waveform Analysis of Travelling Wave	00:24:20
Lecture 23	Ferranti Effect	00:38:39
Lecture 24	ABCD Parameter of Long Transmission line using Y_T and Z_T	00:14:06
Lecture 25	Equivalent p and T circuit of Long Line	00:13:01
Lecture 26	Power Flow through Transmission	00:25:53
Lecture 27	Surge impedance Loading	00:28:55

Lecture 28	SIL with Compensation	00:21:04
Lecture 29	Questions on SIL	00:06:44

Chapter 03 ► Voltage Control & Power Factor Improvement

Lecture 01	Introduction to Voltage Control	00:18:26
Lecture 02	Reactive Power	00:36:24
Lecture 03	Mathematical Relationship between $ V_r $ and Q_s	00:24:19
Lecture 04	Shunt Capacitor for voltage control and pf improvement	00:49:20
Lecture 05	Shunt Reactor	00:25:06
Lecture 06	Series Capacitor	00:18:48
Lecture 07	Effect of Series capacitor	00:18:56
Lecture 08	Comparison between compensating devices	00:10:49
Lecture 09	Synchronous Condenser and coil	00:24:46
Lecture 10	Synchronous phase modifier	00:12:12
Lecture 11	Calculation of Reactor Rating	00:15:22
Lecture 12	Questions on Shunt Capacitor	00:26:22
Lecture 13	Questions on Capacitor Bank	00:17:44
Lecture 14	Questions based on Power Balance	00:21:52
Lecture 15	Calculation of Voltage and Phase	00:09:59

Chapter 04 ► Travelling Waves

Lecture 01	Wave Equation	00:36:05
Lecture 02	Voltage wave equation	00:13:07
Lecture 03	Current Wave Equation	00:12:49
Lecture 04	Open Circuited Transmission Line	00:27:43
Lecture 05	Concept of Reflection and Refraction	00:18:34
Lecture 06	Short Circuited Transmission Line	00:23:49
Lecture 07	Reflection & Refraction Coefficient	00:24:22
Lecture 08	Special Case of Loading	00:23:08
Lecture 09	Bifurcated or T-Junction	00:12:48
Lecture 10	Calculation of Voltage Coefficient	00:05:57
Lecture 11	Calculation of Transmitted Voltage	00:06:07
Lecture 12	Common Data Question	00:08:47
Lecture 13	Calculation of Surge Voltage	00:08:20

Chapter 05 ► Distribution System

Lecture 01	Introduction to Distribution System	00:10:37
Lecture 02	DC Distributer with concentrated load fed at one end	00:47:08
Lecture 03	Calculation of Cross Sectional Area	00:14:34

Lecture 04	DC Distributer with concentrated load fed at both end	00:22:39
Lecture 05	Calculation of Cross Sectional Area	00:11:16
Lecture 06	Calculation of Feeding Voltage	00:06:39
Lecture 07	DC Distributer with uniformally distributed load fed at one end	00:22:58
Lecture 08	DC Distributer with uniformally distributed load fed at both...	00:23:26
Lecture 09	DC Distributer with uniformally distributed load fed at both...	00:14:28
Lecture 10	Calculation of Voltage Drop & Power Drop	00:16:54
Lecture 11	Calculation of Feeding Voltage	00:05:17
Lecture 12	Concentrated + Uniform Loading	00:08:39
Lecture 13	AC Distribution System	00:11:22
Lecture 14	Ring Main Distribution System	00:11:08
Lecture 15	Power Loss in Ring type Distribution System	00:16:18
Lecture 16	Question on Ring Type Distribution System	00:12:54

Chapter 06 ► Cables & Insulators

Lecture 01	Introduction to Cables	00:16:46
Lecture 02	Insulation Resistance of Cable	00:17:43
Lecture 03	Capacitance of Cable	00:09:29
Lecture 04	Electrostatic stress in single core cable	00:11:43
Lecture 05	Grading of Cable	00:20:26
Lecture 06	Capacitance of Three core cable (Part-1)	00:15:49
Lecture 07	Capacitance of Three core cable (Part-2)	00:16:15
Lecture 08	Dielectric Loss in Cable	00:18:13
Lecture 09	Insulator	00:08:35
Lecture 10	Potential Distribution on string of suspension insulator	00:19:36
Lecture 11	Grading of Insulator	00:11:18

PSA ► 2

Lecture 00	How to use PD-GD Course for Power System Analysis ?	00:14:03
------------	---	----------

Chapter 01 ► Per Unit System Analysis

Lecture 01	Single Line Diagram	00:11:29
Lecture 02	Representation of Power System Components	00:19:51
Lecture 03	Exact Representation of Power System	00:12:00
Lecture 04	Per Unit Representation	00:08:01
Lecture 05	Per Unit System (Part-1)	00:14:31
Lecture 06	Per Unit System (Part-2)	00:21:40
Lecture 07	Three Phase System	00:27:22
Lecture 08	Change of Base	00:17:50

Lecture 09	Per Unit Representation of Transformer	00:24:17
Lecture 10	Parallel Representation of Per Unit Impedance	00:11:28
Lecture 11	Series Representation of Per Unit Load	00:17:49
Lecture 12	Impedance Diagram	00:04:37
Lecture 13	Workbook Questions (Q1–Q6)	00:23:52
Lecture 14	Workbook Questions (Q7–Q10)	00:43:28

Chapter 02 ► Symmetrical Faults

Lecture 01	Introduction to Fault	00:30:51
Lecture 02	Consequence of Fault	00:18:24
Lecture 03	Probability of Fault	00:14:47
Lecture 04	SC MVA & SC Fault Current	00:27:32
Lecture 05	Calculation of SC MVA	00:42:29
Lecture 06	Calculation of Rating of Circuit Breaker	00:12:32
Lecture 07	Calculation of Load Current & Generator Voltage	00:30:15
Lecture 08	Calculation of MVA Rating at LV & HV Side of Transformer	00:14:07
Lecture 09	Calculation of Reactance of Reactor	00:10:52
Lecture 10	Fault at LV & HV Side of Transformer	00:15:24
Lecture 11	Calculation of MVA Rating Using Thevenin Reactance	00:13:32
Lecture 12	Calculation of SC MVA in Transmission Line	00:19:29
Lecture 13	Common Data Question GATE 1991	00:18:02
Lecture 14	Calculation of Reactance of Power Network	00:11:53
Lecture 15	Calculation of SC Fault Current	00:14:07
Lecture 16	Calculation of SC MVA & SC Fault Current	00:14:01
Lecture 17	SC Fault Current in Transmission Line	00:40:01
Lecture 18	Types of SC Current in Transmission Line	00:27:01
Lecture 19	Calculation of Maximum Momentary Current	00:09:54
Lecture 20	Constant flux Linkage Theorem	00:12:14
Lecture 21	SC Fault on Synchronous Machine at no Load	00:25:00
Lecture 22	Types of Fault Current in Synchronous Machine	00:12:35
Lecture 23	Calculation of Fault Current	00:05:14
Lecture 24	Calculation of Initial & Final Current in Synchronous Machine	00:06:33
Lecture 25	Calculation of Symmetrical RMS Current	00:06:15
Lecture 26	Calculation of Current in Loaded Synchronous Machine	00:14:08
Lecture 27	Calculation of Sub-Transient Fault Current	00:12:50

Chapter 03 ► Symmetrical Components

Lecture 01	Introduction to Symmetrical Components	00:42:00
Lecture 02	Fortescue's Theorem	00:19:22
Lecture 03	Positive, Negative and Zero Sequence Component	00:15:52

Lecture 04	Phase Shift Operator	00:18:27
Lecture 05	Properties of Alpha-Operator	00:17:24
Lecture 06	Symmetrical Component Matrix	00:43:04
Lecture 07	Workbook Questions (Q1–Q2)	00:17:49
Lecture 08	Workbook Questions (Q3–Q4)	00:12:27
Lecture 09	Symmetrical Component of Star Connection	00:47:58
Lecture 10	Conclusion of Star Connection	00:28:01
Lecture 11	Symmetrical Component of Delta Connection	00:36:51
Lecture 12	Conclusion of Symmetrical Components	00:39:14
Lecture 13	Workbook Questions (Q5–Q8)	00:19:10
Lecture 14	Power in terms of Symmetrical Components	00:24:47
Lecture 15	Workbook Question (Q9)	00:20:09
Lecture 16	Workbook Questions (Q10–Q12)	00:18:04
Lecture 17	Sequence Impedance for Transmission Line	01:14:07
Lecture 18	Workbook Questions (Q13–Q16)	00:22:05
Lecture 19	Sequence Impedance for Star Connected Load	00:33:07
Lecture 20	Zero Sequence Network for Delta Connection	00:14:40
Lecture 21	Sequence Network of Transformer	00:17:43
Lecture 22	Zero Sequence Network of Transformer	00:36:01
Lecture 23	Workbook Questions (Q17–Q19)	00:08:57
Lecture 24	Sequence Network of Synchronous Machine	00:09:57
Lecture 25	Positive Sequence Network of Synchronous Machine	00:10:56
Lecture 26	Zero Sequence Network of Synchronous Machine	00:06:49
Lecture 27	Negative Sequence Network of Synchronous Machine	00:11:33
Lecture 28	Workbook Questions (Q20–Q21)	00:04:58

Chapter 04 ► Unsymmetrical Faults

Lecture 01	Introduction to Unsymmetrical Fault	00:19:33
Lecture 02	Classification of Short Circuit Fault	00:09:48
Lecture 03	Concept of Grounding or Earthing	00:09:45
Lecture 04	Analysis of Short Circuit Fault	00:09:31
Lecture 05	Single Line to Ground Fault (LG Fault)	00:52:30
Lecture 06	Workbook Questions (Q1–Q4)	00:35:04
Lecture 07	Workbook Questions (Q5–Q7)	00:23:56
Lecture 08	Workbook Questions (Q8–Q10)	00:16:36
Lecture 09	Workbook Questions (Q11–Q12)	00:09:02
Lecture 10	Workbook Questions (Q13–Q14)	00:08:13
Lecture 11	Line to Line Fault (Zero Fault Impedance)	00:34:45
Lecture 12	Line to Line Fault (With Fault Impedance)	00:19:41
Lecture 13	Workbook Questions (Q15–Q17)	00:16:22

Lecture 14	Double Line to Ground Fault (Without Fault Impedance)	00:19:14
Lecture 15	Double Line to Ground Fault (With Fault Impedance)	00:22:12
Lecture 16	Workbook Questions (Q18–Q21)	00:24:30

Chapter 05 ► Load Flow Studies

Lecture 01	Introduction to Load Flow	00:13:19
Lecture 02	Assumptions in Load Flow	00:13:52
Lecture 03	Two Bus System	00:30:33
Lecture 04	Properties of Y_{BUS} Matrix	00:22:37
Lecture 05	Three Bus System	00:31:12
Lecture 06	Elements of Y_{BUS} and Z_{BUS}	00:24:02
Lecture 07	Number of Transmission Line and Sparsity	00:29:32
Lecture 08	Two Bus System (T-Model)	00:14:56
Lecture 09	Workbook Questions (Q1–Q3)	00:18:42
Lecture 10	Workbook Questions (Q4–Q6)	00:34:23
Lecture 11	Workbook Questions (Q7–Q8)	00:20:17
Lecture 12	Workbook Question (Q9)	00:17:11
Lecture 13	Methods for Construction of Y_{BUS}	00:15:58
Lecture 14	Singular Transformation Method	00:09:29
Lecture 15	Y_{BUS} With Mutual Impedance	00:14:01
Lecture 16	Z_{BUS} Algorithm	00:14:10
Lecture 17	Fault Analysis Using Z_{BUS}	00:19:39
Lecture 18	Z_{BUS} Matrix	00:09:46
Lecture 19	Type 1 Modification	00:07:21
Lecture 20	Type 2 Modification	00:16:47
Lecture 21	Type 3 Modification	00:10:30
Lecture 22	Type 4 Modification	00:25:40
Lecture 23	Workbook Question (Q10)	00:03:55
Lecture 24	Basic Load Flow Equation	00:22:11
Lecture 25	Determination of Buses	00:07:56
Lecture 26	Types of Buses	00:11:29
Lecture 27	Gauss Seidal Method	00:14:31
Lecture 28	Example of Gauss Seidal Method	00:17:20
Lecture 29	Newton Raphson Method	00:22:42
Lecture 30	Example of Newton Raphson	00:20:41
Lecture 31	Workbook Questions (Q11–Q14)	00:08:22

Chapter 06 ► Power System Stability

Lecture 01	Introduction to Stability	00:20:13
Lecture 02	Power System Stability	00:08:09
Lecture 03	Types of Disturbance	00:11:18
Lecture 04	Classification of Stability	00:04:02
Lecture 05	Synchronous Generator Connected to Infinite Bus Bar	00:20:06
Lecture 06	Synchronising Coefficient or Stiffness	00:15:10
Lecture 07	Condition for Stability	00:18:23
Lecture 08	Synchronous Generator Connected to Motor	00:12:46
Lecture 09	SSSL of Transmission Line	00:23:05
Lecture 10	Rotor Angle Stability	00:15:25
Lecture 11	Power Angle Curve	00:32:58
Lecture 12	Workbook Questions (Q1–Q4)	00:17:49
Lecture 13	Dynamics of Synchronous Machine	00:20:57
Lecture 14	Torques in Synchronous Generator	00:09:15
Lecture 15	Steady State Stability Analysis	00:15:11
Lecture 16	Swing Equation	00:28:21
Lecture 17	Combinations of Machines (Case–1)	00:15:05
Lecture 18	Combinations of Machines (Case–2)	00:20:34
Lecture 19	Swing Curve and Rotor angle	00:16:29
Lecture 20	Workbook Questions (Q5–Q7)	00:10:58
Lecture 21	Representation of T Circuit With Series Circuit	00:10:24
Lecture 22	Series Generator Network Configuration	00:13:41
Lecture 23	Workbook Questions (Q8–Q14)	00:20:06
Lecture 24	Workbook Questions (Q15–Q21)	00:18:12
Lecture 25	Equal Area Criteria	00:17:49
Lecture 26	Equal Area Criteria For Synchronous Generator Connected...	00:27:58
Lecture 27	Effect of Cleaning Time In Stability	00:26:53
Lecture 28	Workbook Questions (Q22–Q23)	00:14:59



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176



SIGNALS & SYSTEMS

ELECTRICAL ENGINEERING

Lecture Information

Lecture 01	Introduction to Signals & Systems	00:48:22
Lecture 02	Operations on Signals	01:42:29
Lecture 03	Elementary Signals	03:02:00
Lecture 04	Dirac Delta Function & Its Properties	01:45:38
Lecture 05	Special Functions	02:08:15
Lecture 06	Workbook Questions (Part 1)	03:38:45
Lecture 07	Even oblique Odd, Conjugate Symmetric & Antisymmetric...	01:30:15
Lecture 08	Continuous Time Periodic Signals	01:47:03
Lecture 09	Discrete Time Periodic Signals	01:07:39
Lecture 10	Workbook Questions (Part 2)	02:21:58
Lecture 11	Continuous Time Energy and Power Signals (Part 1)	02:05:19
Lecture 12	Continuous Time Energy and Power Signals (Part 2)	02:06:11
Lecture 13	Discrete Time Energy and Power Signals	01:01:59
Lecture 14	Workbook Questions (Part 3)	02:33:29
Lecture 15	Properties of Systems (Part 1)	01:58:37
Lecture 16	Properties of Systems (Part 2)	02:38:10
Lecture 17	Linear Time Invariant Systems	01:06:00
Lecture 18	Invertible and Noninvertible Systems	01:57:22
Lecture 19	BIBO Stability Criteria and Recursive Systems	02:58:21
Lecture 20	Workbook Question (Part 1)	03:07:20

Lecture 21	Workbook Question (Part 2)	01:05:09
Lecture 22	Convolution Integral (Part 1)	01:34:58
Lecture 23	Convolution Integral (Part 2)	01:07:55
Lecture 24	Convolution Summation	00:56:28
Lecture 25	Continuous Time Fourier Series (Part 1)	02:26:13
Lecture 26	Continuous Time Fourier Series (Part 2)	01:33:04
Lecture 27	Continuous Time Fourier Series (Part 3)	01:40:12
Lecture 28	Continuous Time Fourier Series (Part 4)	02:35:16
Lecture 29	Workbook Question (Part 1)	03:29:35
Lecture 30	Workbook Question (Part 2)	02:13:34
Lecture 30A	Concept of Floor & Ceiling	00:58:07
Lecture 31	Continuous Time Fourier Transform (Part 1)	01:48:47
Lecture 32	Continuous Time Fourier Transform (Part 2)	02:49:41
Lecture 33	Continuous Time Fourier Transform (Part 3)	02:54:44
Lecture 34A	Workbook Question (Part 1)	03:17:33
Lecture 34B	Workbook Question (Part 2)	04:01:18
Lecture 34C	Workbook Question (Part 3)	02:00:36
Lecture 35	Discrete Time Fourier Transform (Part 1)	01:20:10
Lecture 36	Discrete Time Fourier Transform (Part 2)	01:00:17
Lecture 37	Workbook Questions	00:52:32
Lecture 38	Laplace Transform (Part 1)	01:40:31
Lecture 39	Laplace Transform (Part 2)	02:08:49
Lecture 40	Laplace Transform (Part 3)	02:26:41
Lecture 41	Laplace Transform (Part 4)	01:55:15
Lecture 42	Workbook Question (Part 1)	04:02:29
Lecture 42A	Workbook Question (Part 2)	00:23:56
Lecture 43	Z Transform (Part 1)	03:09:30
Lecture 44	Z Transform (Part 2)	01:59:49
Lecture 45	Z Transform (Part 3)	01:53:52
Lecture 46	Z Transform (Part 4)	01:43:02
Lecture 47	Workbook Question (Part 1)	02:46:57
Lecture 48	Workbook Question (Part 2)	01:15:10
Lecture 49	Discrete Time Fourier Series	00:43:33
Lecture 50	Discrete Fourier Transform (Part 1)	01:46:57
Lecture 51	Discrete Fourier Transform (Part 2)	01:54:22
Lecture 52	Fast Fourier Transform (Part 1)	02:13:39
Lecture 53	Fast Fourier Transform (Part 2)	01:11:11
Lecture 54	Workbook Questions	00:56:48
Lecture 55	Digital Filters (Part 1)	01:41:11

Lecture 56	Digital Filters (Part 2)	01:04:21
Lecture 57	Digital Filters (Part 3)	02:29:06
Lecture 58	Workbook Questions	00:45:18



GET IN TOUCH

pdcourse@gateacademy.co.in
www.gateacademy.shop

A/114-115, Smriti Nagar, Bhilai
490020 (CG)

+91 97131 13156
+91 788 4034176

Edition 2020-21

Power Electronics

PEN-Drive / G-Drive Course & LIVE Classroom Program

Workbook

Electrical Engineering
Electrical & Electronics Engineering

GATE / ESE / PSUs



GATE ACADEMY[®]
steps to success...

Table of Contents

Sr.	Chapter	Pages
1.	Power Semiconductor Switching Devices	1
2.	Single Phase AC to DC Converter	14
3.	Three Phase AC to DC Converter	29
4.	Chopper (DC to DC Converter)	35
5.	Commutation Techniques	46
6.	Inverter (DC to AC Converter)	51
7.	AC Voltage Regulator	62

Video Lecture Information

Sr.	Lecture Name	Duration
0	How to study Power Electronics	0:20:13
Power Semiconductor Switching Devices		
1	Introduction of Power Electronics	0:31:09
2	Basic Concept of Semiconductor	0:39:34
3	Forward & Reverse Biasing of PN Junction	0:16:32
4	THYRISTOR (SCR)	0:18:00
5	Thyristor	PDF
6	Concept of Latching and Holding Current	0:20:00
7	Question Based on Latching and Holding Current	0:40:00
8	Power Diode	0:31:52
9	Operating Modes of SCR	0:47:14
10	Turn on Method of SCR	0:54:05
11	Switching Characteristics of SCR	0:37:36
12	Basic Concept of Commutation Failure	0:22:47
13	Gate Cathode Characteristics	0:24:27
14	Question Based on Gate Cathode Characteristics	0:37:32
15	Types and Modes of Switches	0:34:38
16	Modes of Different Switches	0:40:21
17	Question Based on Different Mode of Switches	0:22:44
18	Switching and Conduction Losses	1:00:51
19	Question Based on Switching Losses	0:40:24
20	Protection of Thyristor	0:49:37
21	Theory of Snubber Circuit	0:42:48
22	Design Considerations of Snubber Circuit	0:28:31
23	Thermal Protection of SCR	0:17:28
24	Series and Parallel Combination	0:51:03
25	Question Based on Series and Parallel Combination	0:35:28
Single Phase Rectifier (AC to DC Converter)		
1	Introduction of Rectifier	0:39:26
2	Single Phase Uncontrolled HWR (01)	0:37:12
3	Single Phase Uncontrolled HWR (02)	0:34:51
4	Single Phase Uncontrolled HWR (03)	0:47:28

5	Single Phase Uncontrolled HWR (04)	0:07:47
6	Single Phase Uncontrolled HWR (05)	0:31:38
7	Single Phase Uncontrolled HWR (06)	0:14:43
8	Single Phase Uncontrolled HWR (07)	1:15:16
9	Single Phase Uncontrolled HWR (08)	1:09:52
10	Workbook Q. 1 - Q. 4	0:25:27
11	Workbook Q. 5	0:17:09
12	Single Phase Uncontrolled HWR (09)	0:34:31
13	Workbook Q. 6 - Q. 9	0:17:23
14	Single Phase Controlled HWR (01)	0:40:14
15	Workbook Q.10	0:09:02
16	Single Phase Controlled HWR (02)	0:28:53
17	Workbook Q.11 - Q.12	0:14:06
18	Single Phase Controlled HWR (03)	0:43:51
19	Single Phase Controlled HWR (04)	0:45:14
20	Single Phase Controlled HWR (05)	0:29:33
21	Workbook Q.13 - Q.14	0:16:56
22	Why high value of power factor is required?	0:13:42
23	Single Phase Uncontrolled FWR (01)	0:44:48
24	Single Phase Uncontrolled FWR (02)	0:54:30
25	Workbook Q.15 - Q.16	0:17:20
26	Single Phase Controlled FWR (01 & 02)	0:57:21
27	Single Phase Controlled FWR (03)	0:24:04
28	Single Phase Controlled FWR (04)	1:12:28
29	Input Performance parameters of Single Phase full converter	1:08:35
30	Workbook Q.17 - Q.23	0:27:10
31	Workbook Q.24 - Q.26	0:18:23
32	Workbook Q.27 - Q.29	0:21:17
33	Workbook Q.30	0:13:39
34	Single Phase Controlled FWR (RE Load)	0:31:03
35	Single Phase Controlled FWR (RLE Load)	0:17:58
36	Single Phase Controlled FWR (RL-RLE Load with FD)	0:21:37
37	Special Case of Single Phase full Converter	0:18:52
38	Workbook Q.31	0:16:22
39	Single Phase Half Controlled Bridge Converter (Semi Converter) 01	0:48:31
40	Single Phase Half Controlled Bridge Converter (Semi Converter) 02	0:43:54

41	Input Performance Parameters of Semi Converter	0:24:49
42	Workbook Q.32-Q.33	0:21:23
43	Workbook Q.34	0:14:58
44	Workbook Q.35-Q.36	0:11:41
45	Effect of Source Inductance (01)	1:13:25
46	Effect of Source Inductance (02)	0:45:50
47	Workbook Q.37-Q.38	0:11:46
48	Dual Converter (b)	PDF
Three Phase Rectifier (AC to DC Converter)		
1	Classification of Rectifier Based on Pulse No	0:17:06
2	Concept of Phase and Line Voltage	0:29:15
3	3 Phase Uncontrolled HWR	0:26:43
4	M-3 Converter with R Load	0:46:53
5	Question Based on Common Anode Configuration	0:14:57
6	M-3 Converter (Continuous Conduction Ripple free Load Current)	0:57:21
7	Question Based on M-3 Converter	0:36:48
8	3 Phase Controlled Bridge Rectifier (B-6 Converter)	1:30:17
9	B-6 Converter (Continuous Conduction Ripple free Load Current)	0:31:27
10	Circuit Turn-off Time in M-3 Converter	0:26:55
11	Workbook Q.1 - Q.3	0:12:01
12	Workbook Q.4 - Q.7	0:09:50
13	Workbook Q.8 - Q.19	0:42:16
14	Workbook Q.20 - Q.23	0:19:59
15	Workbook Q.24 - Q.25	0:16:01
16	Comparison Between 1-Phase & 3-Phase Bridge Converter	0:39:57
17	Workbook Q.26 - Q.28	0:09:57
18	Workbook Q.29	0:09:16
19	3-Phase Semiconverter	0:54:49
20	Source Current Waveform of 3-Phase Semiconverter	0:18:43
21	Comparison Between Semi-Converter and Full Converter	PDF
22	Workbook Q.30	0:09:26
23	Important Result for p-pulse Converter	PDF
24	Workbook Q.31 - Q.32	0:07:44
25	Workbook Q.33 - Q.35	0:21:18
Chopper (DC to DC Converter)		
1	Introduction of Chopper	0:10:36

2	Chopper (DC-DC Converter)	PDF
3	Ideal Step Down Chopper	0:51:48
4	Practical Step Down Chopper	0:17:50
5	Step Down Chopper with RLE Load (Part 1)	0:49:31
6	Step Down Chopper with RLE Load (Part 2)	0:33:19
7	Workbook Q.1 - Q.4	0:11:52
8	Workbook Q.5 - Q.7	0:08:33
9	Workbook Q.8 - Q.9	0:25:05
10	Workbook Q.10	0:12:48
11	Workbook Q.11 - Q.12	0:16:03
12	Workbook Q.13 - Q.16	0:12:55
13	Workbook Q.17 - Q.18	0:06:40
14	Discontinuous Conduction in Step Down Chopper	0:27:19
15	Workbook Q.19 - Q.23	0:06:47
16	Workbook Q.24 - Q.28	0:13:39
17	Workbook Q.29 - Q.32	0:09:54
18	Step-up Chopper	0:39:42
19	Workbook Q.33 - Q.35	0:08:34
20	Workbook Q.36 - Q.38	0:08:53
21	Workbook Q.39	0:26:21
22	Classification of Chopper	0:46:04
23	Workbook Q.40 (Type B Chopper)	0:09:42
24	Buck Regulator (Converter) 01	0:44:57
25	Buck Regulator (Concept of Critical Inductance & Capacitance) 02	0:11:43
26	Workbook Q.41 - Q.42	0:18:29
27	Workbook Q.43 - Q.45	0:18:09
28	Boost Regulator (Converter)	0:51:28
29	Workbook Q.46 - Q.48	0:11:55
30	Workbook Q.49 - Q.51	0:25:16
31	Buck-Boost Regulator (Converter)	0:54:09
32	Workbook Q.52 - Q.53	0:19:59
33	Workbook Q.54 - Q.55	0:07:38
34	Workbook Q.56 - Q.58 (Part 1)	0:26:28
35	Workbook Q.59 - Q.61 (Part 2)	0:32:08
36	Workbook Q.62 (Multiphase Buck Converter)	0:16:10

Commutation Techniques		
1	Introduction of Commutation	0:24:24
2	Forced Commutation (Class A Commutation)	0:17:47
3	Concept of Load Commutation in LC Circuit	0:46:01
4	Class D Commutation (Voltage Commutation)	1:02:48
5	Workbook Q.1 - Q.4	0:16:02
6	Workbook Q.5 - Q.12	0:14:15
7	Current Commutated Chopper (Class B Commutation)	0:55:34
8	Workbook Q.13	0:08:40
9	Workbook Q.14 - Q.15	0:10:51
10	Class C commutation	PDF
Inverter (DC to AC Converter)		
1	Introduction of Inverter	0:56:43
2	Single Phase Half Bridge VSI (01)	0:28:17
3	Single Phase Half Bridge VSI (02)	0:45:18
4	Single Phase Half Bridge VSI (03)	0:55:36
5	Workbook Q.1 - Q.11	0:23:20
6	Single Phase Full Bridge VSI (01)	0:36:09
7	Single Phase Full Bridge VSI (02)	0:19:05
8	Single Phase Full Bridge VSI (03)	0:25:56
9	Workbook Q.12 - Q.17	0:14:54
10	Workbook Q.18 - Q.19	0:17:57
11	Workbook Q.20 - Q.23	0:11:41
12	Workbook Q.24 - Q.29	0:28:22
13	Workbook Q.30	0:15:50
14	Three Phase VSI (180 Degree Conduction Mode)	1:30:38
15	Workbook Q.31 - Q.33	0:16:04
16	Workbook Q.34 - Q.36	0:09:35
17	Three Phase VSI (120 Degree Conduction Mode)	0:59:45
18	Workbook Q.37 - Q.45	0:39:12
19	Pulse width Modulation (Single PWM)	0:42:22
20	Workbook Q.46 - Q.50	0:18:37
21	Workbook Q.51	0:19:05
22	Multiple PWM (M-PWM)	0:25:35
23	Workbook Q.52 - Q.57	0:08:57

24	Sinusoidal Pulse Width Modulation (Bipolar)	0:50:36
25	Sinusoidal Pulse Width Modulation (Unipolar)	0:20:16
26	Workbook Q.58	0:17:36
27	Workbook Q.59	0:14:22
28	Workbook Q.60 - Q.61	0:13:01
29	Workbook Q.62	0:16:02
AC Voltage Regulator		
1	AC Voltage Regulator	PDF