

Phase 4 – T1 – Electrical Craft Science – Study Plan January 2024

Topic 1 – Single Phase

L1	L2								
Single Phase AC – Questions 1 to 37 - Multiple Choice									
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
32	33	34	35	36	37				

L 3		V 1		V 2					
Questions 38 to 47 - (True OR False Questions)									
38	39	40	41	42	43	44	45	46	47

48	49	50							
51	52	53	54	55	56	57	58	59	60
61	62								
63	64	65	66	67					
68	69	70	71						
72	73	74	75	76	77	78	79	80	
81	82	83	84						
85	86	87	88	89	90				
91	92	93	94	95					
96	97								
98	99	100	101						

Mock Exam 1

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Phase 4 – T1 – Electrical Craft Science – Study Plan January 2024

Topic 2 – RLC Parallel Circuits

R		1		2		L1			
Resistance									
L Parallel		3	4	5	6	7			
Inductive reactance									
Inductance	8		9	10		11	12		
13	14		15	16	17		18	19	20
21	22	23	24	25					

RL Parallel	V 1		1	2	3			
4	5	6	7		8	9	10	11
12	13	14	15					
16	17	18	19	20				

RC Parallel	1	2	3	4		5	6	7	8
9	10	11	12		13	14	15		16

RLC Parallel	V 1		V 2		1TF				
2	3	4	5	6		7	8	9	10
11	12	13	14	15	16				
17	18	19	20	21	22				
23	24	25	26	27	28	29			
30	31	32	33	34	35	36	37		
38	39	40	41	42		Video			

Mock Exam 2

1	2	3	4	5	6	7	8	9	10

Phase 4 – T1 – Electrical Craft Science – Study Plan January 2024

Topic 3 – RLC Series Circuits

RL Series		V 1	1	2	3		4	5	6
7	8	9			10	11	12	13	
14	15	16		17	18	19		20	

RC Series		1	2		3				
4	5		6	7	8				
9	10	11	12	13					
14	15	16	17						
18	19	20	21	22					
23	24	25	26	27	28	29			

RLC Series			V 1	V 2		1	2	3	

Resonance Series		4		5		6			

RLC Series Circuit – Questions 7 to 73

7	8	9		10	11	12	13	14	15
16	17	18	19	20					
21	22	23	24	25					
26	27	28	29	30	31				
32	33	34	35	36					
37	38	39	40	41	42	43	44		
45	46	47	48	49	50	51	52	53	
54	55	56	57	58	59	60	61	62	
63	64	65	66	67	68	69	70	71	72 73

Mock Exam 3

1	2	3	4	5	6	7	8	9	10

Phase 4 – T1 – Electrical Craft Science – Study Plan January 2024

Topic 4 – Star

L 1		L2		V1		V2		V3	

3 Phase AC Star – Question 1 to 7 True / False

1TF	2	3	4	5	6	7			

3 Phase AC Star – Questions

8									
9									
10	11								
12	13	14	15	16					
17	18	19	20	21					
22	23	24							
25	26	27	28	29	30	31			
32	33	34	35	36	37	38			
39	40	41	42	43					
44	45	46	47	48	49				
50	51	52	53	54	55				
56	57	58	59	60	61	62	63		

Mock Exam 4

1	2	3	4	5	6	7	8	9	10

Phase 4 – T1 – Electrical Craft Science – Study Plan January 2024

Topic 5 – Delta

L 1									

3 Phase AC Delta – Questions 1 to 8 True / False

1TF	2	3	4	5	6	7	8		

Delta

9									
10	11								
12	13								
14	15	16							
17	18	19							
20	21	22	23						
24	25	26	27						
28	29	30	31	32					
33	34	35	36	37	38				
39	40	41	42	43	44	45			
46	47	48	49	50	51				
52	53	54	55	56					
57									

Mock Exam 5

1	2	3	4	5	6	7	8	9	10

Phase 4 – T1 – Electrical Craft Science – Study Plan January 2024

Topic 6 – Motor / Generator

Motor Revision – Questions 1 to 30 MC

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

Motor

V 1	V 2	V 3	V 4				31		
-----	-----	-----	-----	--	--	--	----	--	--

Single Phase Motor Characteristics

<i>L1</i>		<i>L2</i>		<i>V1</i>		<i>V2</i>		<i>I TF</i>	
-----------	--	-----------	--	-----------	--	-----------	--	-------------	--

Motor Name	Q No	Correct	Wrong	
Universal Series Motor	2C8			
Universal Motor	3C2			
Shaded Pole Motor	4C9			
Split Phase Induction Motor	5C6			
Capacitor Start Motor	6C6			
Capacitor Start (permanent cap.)	7C6			
Capacitor Start Cap. Run	8C6			
<i>Synchronous Motor</i>	<i>9C6</i>			

3 Phase Induction Motor

V 1	V 2	L 1		1		2	3	4	
5	6		7		8	9	10	11	12
13	14		15	16		17			
L 2		18		19		20			

3 Phase Motor Starting Methods

L 1		V 1		1		2	3		
-----	--	-----	--	---	--	---	---	--	--

Alternator

L 1		1		2		3		4	
-----	--	---	--	---	--	---	--	---	--

Generator

L		1	2	3	4	5	6		
---	--	---	---	---	---	---	---	--	--

Mock Exam 6

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Topic 7 – Electronics

Capacitor Basics

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38		
V1	V2	V3	L1						
39									
40	41	42	43	44	45				
46	47	48			49	50	51		
52	53	54		55	L 1		52	53	
56	57	58	59	60	61				
62	63	64							

Diode	L 1	V 1	1	2	3	L 2		4	
5	6	7			8	9	10		

Zener Diode		L	V 1		1	2	3	4	
5	6	7	8	9	V	10	11	V	

Transducer		L							
-------------------	--	---	--	--	--	--	--	--	--

Thermistor		L	V						
-------------------	--	---	---	--	--	--	--	--	--

Led	L 1	1	2	3	4	5	L 2	6	7
------------	-----	---	---	---	---	---	-----	---	---

Transistor	V1	V2	V3	V4		L 1	L 2	L 3	
1	L 4	2		3	4	5	6	7	
8	9	10		11	12	13	14		15

Phase 4 – T1 – Electrical Craft Science – Study Plan January 2024

Single Phase Rectifier

V1		L1		L2					

3 Phase Rectifier

L1		1		L2		2			

Oscilloscope

L 1	L 2	V 1	V 2	V 3					
1	2								
3	4	L 3	5		6	7	8	9	
10	11								
12	13	14	15	16	17	18	19	20	

Electromagnetism

L 1	L 2	L 3		1					
2	3	4	5	6	7				
8	9	10		11	12		L 4		
13	14	15	16			17	18	19	

Power Supply Regulation

L 1		V 1							
1	2	3	4	5	6	7	8	9	10
11	12	13	14						

Mock Exam 7

1	2	3	4	5	6	7	8	9	10

Mock Exam 8

1	2	3	4	5	6	7	8	9	10

Mock Exam 9

1	2	3	4	5	6	7	8	9	10