

Ranking Results from Circuits Delphi Study Rounds 1, 2 and 3

Concept	Understood?			Importance?		
	Median (Interquartile range)			Median (Interquartile range)		
	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3
1. AC Power Concepts	6 (4.25, 6.25)	5 (4, 6)	5 (4, 6)	8 (6,8)	7 (7, 8)	8 (7, 8)
2. AC Steady-State Circuit Analysis (Phasors and Impedance)	6 (4.75, 8)	6 (4, 7)	5.5 (5, 6.25)	9 (7.5, 10)	9 (8, 10)	9.5 (8, 10)
3. Active-Passive Power Sign Convention	8 (8, 9)	9 (8, 9)	9 (9, 9)	8 (5,10)	10 (7, 10)	10 (9, 10)
4. Charge vs. Voltage vs. Current	7 (7, 9)	8 (7, 9)	8 (7, 8.25)	10 (5, 10)	10 (6, 10)	8 (7.5, 10)
5. Complex Numbers	8 (5, 9)	8 (5, 9)	7 (5, 8.25)	9 (5.75, 10)	9 (9, 10)	9 (8, 10)
6. Current Divider	6 (5, 8)	7 (5, 8)	6 (5, 7.25)	8 (7,10)	8 (6, 10)	8 (6.75, 8.25)
7. Dependent Sources	5 (4, 8)	6 (4, 7)	5.5 (4, 7)	9 (7.75, 10)	9 (8, 10)	9 (7.75, 9)
8. Energy Storage Elements (Inductance and Capacitance)	7 (6, 9)	7 (6, 8)	7 (6.75, 8)	10 (8,10)	10 (10, 10)	10 (9.75, 10)
9. Energy vs. Power	7 (4, 8)	7 (6, 7)	6 (6, 7)	10 (5, 10)	10 (7, 10)	9 (7.75, 10)
10. Equivalent Resistance	7 (4.5, 10)	7 (5, 8)	7 (5.75, 8)	8 (6.5, 9.25)	9 (8, 9.25)	9 (8, 9.25)
11. Frequency Response	6.5 (2.25, 8)	6 (4.5, 7)	5 (4.5, 6)	9 (7, 10)	9.5 (8, 10)	9 (8.5, 10)
12. Interpretation of Circuit Diagrams	6 (5, 8)	6 (5, 7)	6 (5.75, 6)	8 (6, 10)	10 (8, 10)	9 (8.75, 10)
13. I-V Characteristics of Current & Voltage Sources	6 (5, 8)	5 (5, 6)	5 (5, 6)	7 (5, 10)	7 (6, 9)	8.5 (6, 9)
14. Kirchoff's Laws	9 (8, 10)	9 (8, 10)	8 (8, 9)	10 (10, 10)	10 (10, 10)	10 (10, 10)
15. Mesh vs. Node Techniques	5 (3, 7)	5 (5, 6)	5 (4, 5)	6 (5, 9)	6 (5, 7)	6 (5, 7)
16. Mesh-Current Method	5 (4, 8)	6 (5, 7)	6 (5.75, 7)	7 (3, 9)	8 (5, 8)	7 (5, 8)
17. Node-Voltage Method	8 (6, 8)	7 (6, 8)	7.5 (6, 8)	9 (6, 10)	10 (8, 10)	9.5 (8, 10)
18. Operational Amplifiers	6 (6, 8)	6 (6, 7)	6 (6, 7)	8 (7, 10)	8.5 (8, 9)	9 (8, 9)
19. Reactive Power	4 (2, 5)	4 (2, 4)	3 (2, 4.5)	7 (6, 7)	6 (6, 7)	6 (5, 6.5)
20. RLC Circuits	6 (4, 7)	5 (5, 6)	5.5 (5, 6)	7 (6, 9)	8 (7, 9)	8.5 (8, 9)
21. Series and Parallel Circuit Elements	8 (6, 10)	9 (7, 9)	9 (7, 9)	9 (8, 10)	10 (8, 10)	9.5 (8.75, 10)
22. Superposition Method of Circuit Analysis	7 (4, 8)	8 (6, 8)	7 (6, 8)	5 (5, 8)	8 (5, 8)	7.5 (7, 8)
23. Thevenin/Norton Equivalent Circuits	4 (3, 8)	6 (4, 7)	6 (4.75,6.2)	8 (7, 10)	10 (8, 10)	10 (9, 10)
24. Three Phase System	4 (3, 7)	5(2.75,5.2)	5 (2.5, 5)	5 (3.75, 6)	5 (4, 5.25)	5 (4, 5)
25. Transient Analysis (RC & RL Circuits)	5 (4, 7)	5 (5, 7)	5.5 (5, 6)	8 (5, 9)	9 (8, 9)	9 (8, 9)
26. Two Port Networks	3 (3, 7)	3(2.75,4.2)	3 (2, 3)	5 (2, 6.5)	5 (3.75, 5.25)	5 (3.5, 5)
27. Voltage Divider	7 (5, 9)	8 (7, 8)	8 (7, 8)	10 (7, 10)	10 (9, 10)	10 (8, 10)

Understanding scale	Importance scale
1 = no one understands the concept	1 = Not at all important to understand the concept
10 = everyone understands the concept	10 = Extremely important to understand the concept