

34032 – Electrical Circuit and Instrumentation

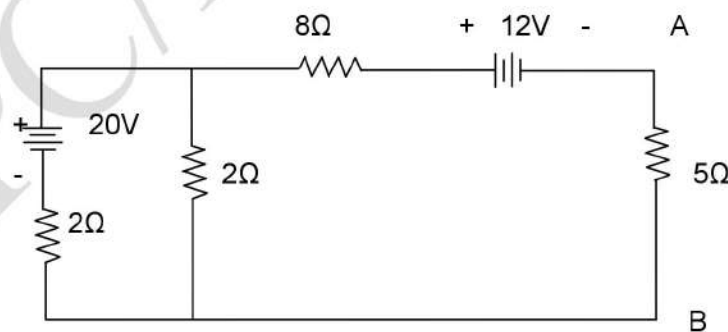
DC CIRCUITS AND THEOREMS.

PART-A & PART-B QUESTIONS

1. State ohm's law.
2. What is the unit of power?
3. State kirchoff's current law.
4. Define resistance. What is the unit of resistance?
5. State the relationship between voltage, current, and resistance.
6. State maximum power transfer theorem.*
7. Define current. What is the unit for current?
8. State kirchoff's law. (Or) state KVL and KCL.
9. What is the equivalent resistance, if $R_1=1\Omega$, $R_2=2\Omega$, $R_3=3\Omega$ are connected in parallel?
10. Define power with its unit.
11. State and explain Ohm's law.
12. Find the equivalent resistance when three resistances are connected in parallel.
13. Write the step by step procedure to find out the current in a particular branch by applying Norton's theorem.

PART-C QUESTIONS

1. State and explain the Norton's theorem.
2. Find the current through 5 ohm resistor by using thevenin's theorem.



3. State and explain superposition theorem.
4. State and explain the thevenin's theorem.
5. State and explain the maximum power transfer theorem.

34032 – Electrical Circuit and Instrumentation

UNIT-II – A.C CIRCUITS AND RESONANCE

PART-A & PART-B QUESTIONS

1. Define admittance.
2. What is phase angle?
3. Define Q-factor.
4. Write an expression for resonance frequency and Q-factor of a series resonant circuit.
5. Define conductance.
6. Define power factor.
7. Define quality factor.
8. What is the power and power factor of the RL series circuit?
9. Define conductance, impedance and phase angle.
10. What is the concept of reactance?
11. Draw the RLC series circuit.
12. What is the power and power factor of the RLC series circuit?
13. Write an expression for resonance frequency and Q-factor of a parallel resonant circuit.
14. What is the condition for resonance?

PART-C QUESTIONS

1. Derive an expression for resonance frequency and Q factor of a series resonant circuit.
2. Derive an expression for power and power factor of a RL series circuit.
3. Derive an expression for impedance, phase angle, power factor and power of RL series circuit.
4. Derive an expression for the impedance in RLC series circuit.
5. Draw the circuit of parallel resonance and derive the expression for frequency of resonance.

34032 – Electrical Circuit and Instrumentation

PART-A & PART-B QUESTIONS

1. Define turns ratio of a transformer.
2. Define efficiency of a transformer.
3. Define DC generator.
4. State any two applications of motor.
5. State the use of stepper motor.
6. What are the various losses in a transformer?
7. Define DC motor.
8. List the type of DC generator.
9. Write the EMF equation and turns ratio of transformer.
10. State any two applications of DC motor.
11. What are the various types of single phase induction motor?
12. Describe about various losses in a transformer.
13. State any two applications of DC series motor.
14. State the uses of stepper motor.
15. State the types of DC motor.
16. Write any two applications of transformer.
17. State any three differences between single and three phase supply.
18. What is stepper motor?

PART-C QUESTIONS

1. Explain the working of a transformer and state its applications.
2. Explain the stepper motor and mention its applications.
3. Explain the working principle of an ideal transformer and derive its EMF equation.
4. Explain the principle of operation of a capacitor start induction motor. Mention its applications.
5. Explain the principle of operation of DC generator.
6. Derive the EMF equation of transformer.
7. Explain with neat diagram, the operation of capacitor start induction motor.
8. Explain the principle of operation of DC motor.

34032 – Electrical Circuit and Instrumentation

UNIT- IV – MEASURING INSTRUMENTS AND CRO

PART-A & PART-B QUESTIONS

1. What is the importance of controlling force?
2. List out the types of damping.
3. Define voltmeter sensitivity.
4. List out the types of CRO.
5. What is the purpose of using shunts and multipliers in meters?
6. State the applications of Wheatstone bridge.
7. State the uses of CRO.
8. Define voltmeter sensitivity.
9. Draw Wheatstone bridge circuit.
10. Draw the block diagram of function generator.
11. What are shunts and multipliers?
12. What are the types of basic forces required for the indicating instruments?

PART-C QUESTIONS

1. Explain the various operating forces required for the indicating instruments.
2. Draw the block diagram of dual trace CRO and explain its operations.
3. Explain the operation of digital storage oscilloscope with a neat block diagram.
4. Explain with diagram the construction and working of a PMMC instrument.
5. Explain with neat sketch, the construction and working of dual beam CRO.
6. Explain with neat sketch the operation of Wheatstone bridge and write its applications.

34032 – Electrical Circuit and Instrumentation

UNIT- V – TRANSDUCERS, SENSORS, & TEST INSTRUMENTS

PART-A & PART-B QUESTIONS

1. What is recorder?
2. Name any two photo electric transducers.
3. State any two applications of strain gauge.
4. What is NTC thermistor?
5. List the types of thermistor.
6. What is LVDT?
7. Define ultrasonic range sensor and mention its range.
8. What are the classifications of transducers?
9. What are the types of DVM?
10. Mention the application of thermistor.
11. What are the applications of touch sensor?
12. What is meant by load cell? Give any one application of load cell.
13. Define IR range sensor and mention the range of it.
14. What is NTC, PTC and thermocouple?
15. What is meant by strain gauge.
16. What are the applications of load cell?

PART-C QUESTIONS

1. Explain the operation of strip chart recorder with neat diagram and compare with X-Y recorder.
2. Explain the construction and working of load cell.
3. What is IR proximity sensor? Explain the working principle of IR proximity sensor.
4. Explain PC based data acquisition system with a neat block diagram.
5. With neat diagram, explain the operation of a digital frequency counter.
6. Explain the construction and operation of LVDT.
7. What is ultrasonic range sensor? Explain the working principle of operation.