

October 2018**Time - Three hours**
(Maximum Marks: 75)

[N.B: (1) Q.No: 8 in PART - A and Q.No. 16 in PART - B are compulsory. Answer any FOUR questions from the remaining in each PART - A and PART - B

(2) Answer division (a) or division (b) of each question in PART - C.

(3) Each question carries 2 marks in PART - A, 3 marks in Part - B and 10 marks in PART - C.]

PART - A

1. State Kirchoff's laws.
2. Define power. What is the unit of power?
3. What is the condition for resonance?
4. Define impedance.
5. What are the various losses in transformer?
6. What is stepper motor?
7. What are the types of basic forces required for the indicating instruments?
8. What is meant by strain gauge?

PART - B

9. Write the step by step procedure to find out the current in a particular branch by applying Norton's theorem.
10. Define admittance, phase angle and power factor.
11. Mention the different types of DC motor.
12. What are the applications of CRO?
13. State the advantages of PMMC instrument.
14. What are the classifications of transducer?
15. State the applications of load cell.
16. State and explain Ohm's law.

PART - C

17. (a) State and explain super position theorem.
(Or)
(b) State and explain the Thevenin's theorem.
18. (a) Derive an expression for the impedance in RLC series circuit.
(Or)
(b) What is series resonance? Derive an expression for series resonant frequency.
19. (a) Derive the EMF equation of a transformer.
(Or)
(b) With neat diagram, explain the principle of operation of DC generator.
20. (a) Draw the block diagram of digital storage oscilloscope and explain its operation.
(Or)
(b) Explain with neat sketch the operation of Wheatstone bridge and write its applications.
21. (a) Explain the principle of operation of digital frequency counter.
(Or)
(b) Explain the construction and working of LVDT.