

(3 Hours)

Total Marks: 80

N.B: (1) Question No. 1 is compulsory.

(2) Attempt any three from the remaining questions.

(3) Figures to the right indicate full marks.

(4) Each question is of 20 Marks

Q.1	Attempt any 4 questions	Marks
A	State Faraday's first and second law of electromagnetic induction?	5
B	Explain Kelvin's double bridge.	5
C	Explain why starter is required in DC machines?	5
D	Differentiate between PMMC and MI instrument.	5
E	What is rotating MMF?	5
Q.2		Marks
A	Explain in brief the principle of electro-mechanical energy conversion and develop a model of electro-mechanical energy conversion device.	10
B	Explain Dynamometer type Wattmeter.	10
Q.3		Marks
A	Explain calibration of voltmeter and ammeter using potentiometer.	10
B	Explain Retardation test on DC motor.	10
Q.4	Explain in detail armature reaction and methods to reduce armature reactions in DC Motor.	Marks
A		10
B	Explain Q meter with neat diagram.	10
Q.5		Marks
A	Explain the concept of doubly excited machines and derive the expression for the electromagnetic torque.	10
B	Differentiate between working of thermistor and thermocouple.	10
Q.6		Marks
A	Explain the static and dynamic characteristics of measuring instruments	10
B	Explain the construction and working principle of digital storage Oscilloscope.	10
