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(Pages : 2)

Name.....

Reg. No.....

**FOURTH SEMESTER B.TECH. (ENGINEERING) (09 SCHEME)
DEGREE EXAMINATION, APRIL 2015**

EE 09 406/PTEE 09 405—ELECTRICAL MEASUREMENTS AND
INSTRUMENTATION SYSTEM

Time : Three Hours



Part A

Answer all questions.

1. What is eddy current damping ?
2. What is creeping in an energy meter ?
3. How are transducers classified based on the principle of transduction ?
4. List the various digital display methods.
5. What is the relationship for deflection in a galvanometric recorder ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Derive the equation for damping torque of a metal disc.
7. Explain how temperature compensation is implemented in a single phase energy meter.
8. Compare the features of spring and gravity control.
9. Explain the working of a hall effect transducer.
10. Write a short note on voltage telemetering system.
11. Explain the working of a pen driving system.

(4 × 5 = 20 marks)

Part C

Answer all questions.

12. Explain the construction and working of a moving coil instrument. Derive the relationship for controlling and deflecting torques.

Or

13. With the help of equivalent circuit and phasor diagram of a current transformer, derive the relationships for transformation ratio and phase angle.
14. Explain the construction and working of a single phase induction type energy meter.

Or

15. Describe the construction and working of shunt and series type ohmmeters.

Turn over

16. Discuss a scheme to measure speed and angular rotation.

Or

17. Draw and explain the block diagram for the digital measurement of frequency.

18. With neat diagram explain galvanometric recorders.

Or

19. Draw the block diagram of a digital storage oscilloscope and briefly discuss about each block.

(4 × 10 = 40 marks)