2008-PUNJAB TECHNICAL UNIVERSITY

B.TECH II SEMESTER REGULAR EXAMINATION
ELECTRICAL AND ELECTRONICS MEASUREMENTS
(ELECTRONIC CONTROL ENGINEERING)

TIME-3HOUR
MARKS-80

ANSWER ANY FIVE QUESTIONS ALL QUESTIONS CARRY EQUAL MARKS

1. Explain in detail the Permanent magnet moving coil mechanism with construction and temperature compensation.

2. (a) How the elements of a single phase watthour meter are connected? Explain with the help of a sketch.

(b) Describe the principle of measurement and working of a domestic watthour meter.

3. (a) Give the circuit of a basic DC voltmeter with F.E.T input and explain it's working in brief.

(b) Give a circuit diagram of amplified voltage and current meter capable of measuring multi voltages and currents.

4. (a) Compute the value of self-capacitance of a coil when the following measurements are made; at f1 = 2MHz, the tuning capacitor is set at 450 pf. When the frequency is increased to 5 MHz, the tuning capacitor is tuned to 60 pf.

(b) Draw the block diagram of the RF milli voltmeter. Explain its working.

5. (a) With neat block diagram explain the working function of each block of general purpose oscilloscope.

(b) Mention the advantages of general purpose oscilloscope.

6. (a) Explain the working function of each blocks of a digital storage oscilloscope.

(b) How does the digital storage oscilloscope differ from the conventional storage oscilloscope using a storage CRT? What are the advantages of each?

7. (a) Mention different types of signal generators and explain their working principles.

(b) Explain in detail about conventional standard signal generator.

8. (a) Draw and explain the temperature compensated crystal oscillator circuit.

(b) List the suggestions to be followed to attain maximum accuracy in a frequency counter.

(c) Explain the basic principle behind the extension of frequency range of counter.