

II B.Tech II Semester Supplementary Examinations, Apr/May 2006
ELECTRICAL AND ELECTRONICS MEASUREMENTS
(Common to Electronics & Instrumentation Engineering and Electronics &
Control Engineering)

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. Derive the expression for R_h in shunt type ohm-meter. Also prove with an example its suitability for very low resistance measurement. [8+8]
2. With the help of a neat sketch and circuit connections for a single phase crossed coil, describe the working of polarized-vane power factor meter. [4+4+8]
3. (a) Give a circuit of an AC coupled amplifier to amplify DC signals when the input and out put are chopped.
(b) Explain the operation of an all-electrical chopper circuit using FET's. [8+8]
4. Write a notes on sources of error encountered in capacitance measuring meter. Explain parasitic inductance, resistance and capacitance. [4+4+4+4]
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. [10+6]
6. (a) What are the major components of a CRT and explain the working function of each?
(b) Why are operating voltages of CRT arranged so that the deflection plates are nearly at ground potential? [10+6]
7. (a) What is the difference between a wave analyzer and harmonic distortion analyzer?
(b) Explain with the help of block diagram the working of a harmonic distortion analyzer? [8+8]
8. (a) Explain a method to measure the ratio of two frequencies using suitable block diagram.
(b) To what accuracy can a frequency counter determine an unknown frequency of 500 KHzs using a 1.2 sec time base and a time base accuracy of 0.02%. [10+6]
