D 27081 (Pages : 2) Name.....

Reg. No.....

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2006

EC 04 505—ELECTRONIC INSTRUMENTATION

(2004 admissions)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

1. (a) What are potentiometers ? Explain the types of potentiometers.
   (b) State and explain piezoelectric effect.
   (c) Give an account on multimeter probes.
   (d) Explain the features of DVM.
   (e) What are the methods of measure resistance ? Explain any *one* with a neat sketch.
   (f) Explain the basic principle of plotters with a neat sketch.
   (g) Explain the basic requirements of storage oscilloscopes.
   (h) Explain the potential applications of spectrum analyser.

   (8 × 5 = 40 marks)

2. (a) Discuss in detail the various classification of errors. (15 marks)

   Or

   (b) (i) Differentiate bonded strain gauge from unbonded strain gauge. (7 marks)
   (ii) Give an account on capacitance sensing elements. (8 marks)

3. (a) Draw a neat block diagram of digital voltmeter and explain its principle of operation. (15 marks)

   Or

   (b) (i) Explain the characteristics of an ideal Op-Amp. (7 marks)
   (ii) Explain the principle of Op-Amp based analog electronic VOM with a neat sketch. (8 marks)

4. (a) Explain in detail the principle of :
   (i) RF generator. (7 marks)
   (ii) Graphic recording instruments. (8 marks)

   Or

   (b) (i) Explain the bridge method of measuring resistance. (7 marks)
   (ii) Explain the operating principle of strip chart and XY recorder with neat sketches. (8 marks)

Turn over

5. (a) Draw a neat block diagram of spectrum analyzer and explain its principle of operation in detail. (15 marks)

Or

(b) Write short notes on :

(i) Application of storage oscilloscopes. (7 marks)

(ii) Oscilloscope probes. (8 marks)

[4 × 15 = 60 marks]