C 44467 (Pages : 2) Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2013

AI 09 702—ADVANCED INSTRUMENTATION

(2009 Scheme – Supplementary)

Time : Three Hours Maximum : 70 Marks

Part A

Answer **all** *questions.*

I. (a) What is a dew cell ?

(b) What is a psychrometer ?

(c) Define time constant.

(d) What is the need for a buffer circuit ?

(e) State two features of RS 432A interface.

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

II. (a) Explain the principle of working of a hair hygrometer.

(b) Explain briefly the working of gas densitometer.

(c) Explain a method to measure the time between two events.

(d) Explain the working of a successive approximation ADC.

(e) Explain the application of virtual instrumentation.

(f) Explain briefly about GPIB.

(4 × 5 = 20 marks)

Part C

Answer **all** *questions.*

III. (a) Explain a method to measure density of a liquid.

Or

(b) Explain about (i) semiconductor sensors ; (ii) MEMS.

Turn over

IV. (a) Explain a digital technique to measure quality factor of a ringing circuit.

Or

(b) Explain a digital technique to measure ratio of two frequencies.

V. (a) Explain a method to measure modulation index.

Or

(b) Write notes on :

(i) Noise sources.

(ii) Architecture of a virtual instrument.

VI. (a) Explain the following interfaces :

(i) RS 232 C.

(ii) USB.

Or

(b) Explain the following :

(i) VME extensions for instrumentation.

(ii) Virtual instrument software architecture.

(4 × 10 = 40 marks)