

## FACULTY OF ENGINEERING

B.E. 4 / 4 (E & EE) II – Semester (Main) Examination, May / June 2011

**Subject: Electronic Instrumentation Systems (Elective – III)**

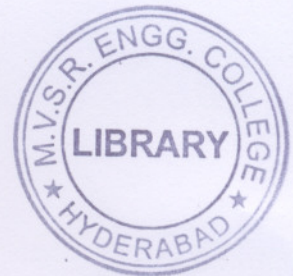
**Time: 3 Hours**

**Max. Marks: 75**

**Note:** Answer all questions from Part A. Answer any Five questions from Part B.

### PART – A (25 Marks)

- |   |   |
|---|---|
| 1. Define passive transducers and give two examples.  | 3 |
| 2. A successive approximation A/D converter has a resolution of 20 mV. What will be its digital output for an analog input of 2.17 V? | 2 |
| 3. Write ADC specifications.  | 3 |
| 4. Find crest factor of a sine wave.  | 3 |
| 5. Define spectrum analysis.  | 2 |
| 6. What are various types of distortions caused by amplifiers?  | 3 |
| 7. Define relay switch attenuator.  | 2 |
| 8. What is the purpose of time base generator in CRO?   | 2 |
| 9. State the advantages of computer controlled test systems.  | 2 |
| 10. What are the applications of wave analysers.  | 3 |



### PART – B (5x10 = 50 Marks)

- |   |    |
|---|----|
| 11.(a) Explain the principle and working of programmable gain amplifier with neat diagram.                        | 5  |
| (b) What are the different types of isolation amplifiers and write its specifications.                            | 5  |
| 12. Explain the principle and working of  |    |
| a) Successive approximation ADC   | 5  |
| b) Dual slope ADC   | 5  |
| 13.(a) Explain the principle of automatic ranging and automatic zeroing RMS detector in DMM.                      | 5  |
| (b) Explain the principle and working of current to voltage converter.  | 5  |
| 14. Explain the principle and working of spectrum analyzer with the help of block diagram.                        | 10 |
| 15. Explain the testing of an audio amplifier and radio receiver instruments used in computer controlled systems. | 10 |
| 16. What are the different components in a magnetic tape recorder and explain its working.                        | 10 |
| 17. Write short notes on:   |    |
| a) IEEE 488 bus   | 5  |
| b) Time base generator  | 5  |