

FACULTY OF ENGINEERING

B.E. 4/4 (EEE) II - Semester (Main & Backlog) Examination, June 2014

Subject : Electronic Instrumentation Systems (Elective-III)

Time : 3 Hours

Max. Marks: 75

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

- 1 Differentiate active and passive transducers. (3)
- 2 List the advantages of successive approximation ADC. (3)
- 3 What are the specification of a main DAC? (2)
- 4 Give the principle operation of true RMS responding volt meter. (2)
- 5 Write short notes about scaling and checking modes. (3)
- 6 What are the applications of wave analyzer? (3)
- 7 Define total harmonic distortion. (2)
- 8 What is the need for a time based generator in a CRO? (2)
- 9 What is relay switched attenuator? (2)
- 10 What are the advantages of FM recording over AM recording on a magnetic tape? (3)

PART – B (50 Marks)

- 11 Show the circuit diagram of 4-bit DAC using weighted resistance network. Explain its operation and derive an expression for its analog voltage.
- 12 What are the advantages of dual slope ADC over single slope with the help of a circuit diagram and wave forms? Explain its operation.
- 13 Explain the principles of frequency measurements and pulse width measurement.
- 14 With relevant diagrams write in detail about.
 - (a) Automatic ranging
 - (b) Automatic Zeroing
- 15 Explain about radio receiver instruments used in computer control system.
- 16 Write short notes on the following:
 - (a) Time base generator
 - (b) Automatic ranging RMS deductor
- 17 Explain the working of digital storage oscilloscope with a neat block diagram, list different types of digital storage oscilloscope.

FACULTY OF ENGINEERING

B.E. 4/4 (EEE) II – Semester (Old) Examination, June 2014

Subject : Technical Writing and Presentation Skills (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 Rewrite the sentences below correctly. 2 x 2 = 4
 a) Neither of the boys are going to win the first prize
 b) They discussed about the issue yesterday
- 2 Punctuate the following sentences. 2 x 3 = 6
 a) She works had but she should be more focused from now on.
 b) Sunil bought a PC a cell phone and a novel yesterday.
- 3 Use the following idioms in sentences of your own. 3 x 2 = 6
 a) in black and white
 b) to shed crocodile tears
 c) once in a blue moon
- 4 Expand the following abbreviations 4 x 1 = 4
 a) A/C b) ROM c) VHF d) e.g.
- 5 Rearrange the jumbled sentences to make a good paragraph. 5 x 1 = 5
 a) The outline should include each assertion together with the evidence for it.
 b) As we keep writing, we need to revise it at regular stages.
 c) Now, we could begin writing.
 d) The first step in writing it to prepare on outline indicating the organization and content.
 e) This outline is actually a first draft for preparation and revision.

PART – B (5 x 10 = 50 Marks)

- 6 a) Explain the various elements of a formal technical report.
OR
 b) Presentation skills decide a professional's career today. Justify.
- 7 a) Discuss how you would plan power point presentation slides.
OR
 b) Write short notes on the following :
 i) page margins ii) paragraph length and structure
- 8 a) Write a letter of application along with a resume for the post of a software trainee at Wipro Technologies Limited, Bangalore.
OR
 b) Write a letter to the manager of Andhra Bank requesting him to send details regarding loan procedure for a car loan.
- 9 a) What is the role of nonverbal communication in our lives?
OR
 b) Write a report on your College Fresher's Day.
- 10 a) How important are graphics in technical writing? Substantiate.
OR
 c) Effective communication skills are as important as technical skills for engineering students. Justify.

FACULTY OF ENGINEERING
B.E. 4/4 (EEE) II – Semester (New) (Main) Examination, June 2014

Subject: Transducers (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 (a) Precision, (b) Calibration, (c) Error and (d) Span | 3 |
| 2 | An instrument measures 4.IV, 4.IV, , 4.IV and 4.IV in four readings. Is the instrument precise? Explain. | 2 |
| 3 | What is sinusoidal transfer function? | 2 |
| 4 | Give example for second order system and draw the graphically unit step response. | 3 |
| 5 | What are the materials used for strain gauge? | 2 |
| 6 | What are the merits and demerits of potentiometers? | 3 |
| 7 | What are thermocouples? | 2 |
| 8 | Explain the principle of RVDT. | 3 |
| 9 | Define "Hall effect". | 2 |
| 10 | Explain the principle of Eddy current sensor. | 3 |

PART – B (50 Marks)

- | | | |
|--------|---|----|
| 11 | (a) What are the basic characteristics of measuring devices? Explain in detail. | 7 |
| | (b) A voltmeter reads 109.5V. The error taken from an error curve is -0.37V. Determine the true voltage. | 3 |
| 12.(a) | What is the generalized mathematical model used in measurement system? | 3 |
| (b) | Sketch the response when first order system is subjected to unit step input. | 7 |
| 13 | Explain the construction and working principle of potentiometer. Mention its applications. | 10 |
| 14.(a) | Define gauge factor for an electrical strain guage. Compare the characteristics of metallic and semiconductor type strain guages. | 5 |
| (b) | Write short notes on wire guages. | 5 |
| 15 | Write short notes on the following: | |
| | a) Hall effect sensors | |
| | b) Digital transducer | |
| | c) Fibre optic sensors. | |
| 16 | Explain with examples, the applications of thermister. Draw the characteristics of thermister. | 10 |
| 17 (a) | Explain the types of thermocouples. | 5 |
| (b) | Explain the working of Piezo-electric transducers. | 5 |