

GANPAT UNIVERSITY
B. Tech. Semester: V (Electronics & Communication Engineering)
CBCS Regular Examination Nov-Dec 2016
2EC505 Electronic Measurement Techniques

Time: 3 Hours

Total Marks: 60

- Instructions:**
1. All questions are compulsory.
 2. Write answer of each section in separate answer books.
 3. Figures to the right indicate marks of questions.

Section - I

- Que. - 1**
- | | | | |
|--|---|---|---|
| | A | Define the terms: Accuracy, Error, Precision, Resolution, Measurement | 5 |
| | B | Write short notes on: LCD display and LED display | 5 |

OR

- Que. - 1**
- | | | | |
|--|---|---|---|
| | A | What are Transducers? Mention the various criteria to select a good Transducer. | 5 |
| | B | With the help of block diagram, explain the Frequency selective wave analyzer. | 5 |

- Que. - 2**
- | | | | |
|--|---|---|---|
| | A | Explain the block diagram of a CRO in detail. | 5 |
| | B | How does Hay's bridge is used to measure the value of an unknown inductance? Explain with necessary equation. | 5 |

OR

- Que. - 2**
- | | | | |
|--|---|---|---|
| | A | For the given data, Calculate (i) Arithmetic mean (ii) Deviation of each value (iii) The algebraic sum of the deviation (iv) Standard deviation | 5 |
| Given data: 48.8 , 49.5, 46.9, 48.9, 50.1, 49. | | | |

- | | | | |
|--|---|--|---|
| | B | What is a Spectrum analyzer? Describe in detail. | 5 |
|--|---|--|---|

- Que. - 3**
- | | | | |
|--|---|--|---|
| | A | With the help of circuit diagram explain the unbalanced wheatstone bridge. | 5 |
| | B | What are the different types of static errors in measurement? Describe them briefly. | 5 |

Section - II

- Que. - 4**
- | | | | |
|--|---|--|---|
| | A | Draw and explain the block diagram of Data Acquisition and conversion system. | 5 |
| | B | What is the role of Delay line block in CRO? Explain the different types of delay lines. | 5 |

OR

- Que. - 4**
- | | | | |
|--|---|--|---|
| | A | Draw the block diagram of AC and DC signal conditioning system. | 4 |
| | B | With the help of circuit diagram, explain the working of Maxwell bridge. | 6 |

- Que. - 5**
- | | | | |
|--|---|---|---|
| | A | What is Temperature transducer? Explain the principle of Thermistor. | 5 |
| | B | What is the basic function of CRO? Explain the Vertical amplifier section of a CRO. | 5 |

OR

- Que. - 5**
- | | | | |
|--|---|---|---|
| | A | Explain the Piezo electrical Transducer in detail. | 5 |
| | B | Explain the working principle of Linear Variable Differential Transducer. | 5 |

- Que. - 6**
- | | | | |
|--|---|--|---|
| | A | 'CRT is known as the heart of the oscilloscope'. Justify the statement with necessary diagram. | 5 |
| | B | Describe the working principle of PMMC instrument. | 5 |

END OF PAPER

GANPATI UNIVERSITY

B.Tech. Semester V (Electronics & Communication Engineering)

CBCS Regular Examination Nov-Dec 2016

EECS952 Electronic Measurement Techniques

Total Marks: 60

1. With the help of block diagram, explain the working of a Cathode ray oscilloscope (CRO). (10)

Section - I

Ques-1 A. Define the terms 'sensitivity' and 'resolution' in the context of an electronic measurement instrument. (10)

Ques-1 B. Write short notes on LCR meter. (10)

OR

Ques-1 A. What are Transducers? Mention the various errors to which a good transducer is subjected. (10)

Ques-1 B. With the help of block diagram, explain the working of a Cathode ray oscilloscope (CRO). (10)

OR

Ques-2 A. Explain the block diagram of a CRO in detail. (10)

Ques-2 B. How does the 'trigger' circuit in a CRO help in stabilizing the trace? (10)

OR

Ques-3 A. For the given data, calculate the average value of a periodic waveform. (10)

Ques-3 B. What are the different types of error in an electronic measurement? (10)

Section - II

Ques-4 A. Draw and explain the block diagram of a Data Acquisition and Control system. (10)

Ques-4 B. What is the role of delay elements in a digital system? (10)

OR

Ques-4 A. Draw the block diagram of AC and DC signal conditioning system. (10)

Ques-4 B. With the help of circuit diagram, explain the working of a network analyzer. (10)

Ques-5 A. What is a 'transfer function'? Explain the principle of Transfer function. (10)

Ques-5 B. What is the basic function of a CRO? Explain the various features of a CRO. (10)

OR

Ques-6 A. Explain the basic electrical Transducer in detail. (10)

Ques-6 B. Explain the working principle of a Linear Variable Differential Transducer (LVDT). (10)

OR

Ques-7 A. What is known as the part of the oscilloscope? Draw the schematic diagram. (10)

Ques-7 B. Describe the working principle of an LCR meter. (10)