



B.TECH DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2017)

Third Semester

TEXTILE TECHNOLOGY

U17EII3203: Measurements and Instrumentation

COURSE OUTCOMES

- CO1:** Identify the different parameters to be measured in textile industry.
CO2: Select the suitable transducers used for different applications.
CO3: Demonstrate the feature extraction using image analysis in textile processing
CO4: Outline the criteria to choose appropriate sensors for specific applications
CO5: Utilize the control components for textile processing applications

Time: Three Hours

Maximum Marks: 100

**Answer all the Questions:-
 PART A (10 x 2 = 20 Marks)
 (Answer not more than 40 words)**

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|--|-----|-------------------|
| 1. State the units of fiber in textile industry. | CO1 | [K ₁] |
| 2. Mention the significance of measurement. | CO1 | [K ₂] |
| 3. Define Transducer and How it varies from inverse Transducer. | CO1 | [K ₁] |
| 4. List the types of temperature sensor used in Dyeing industry. | CO2 | [K ₃] |
| 5. Write about the functional elements used in bourdon gauge for measuring pressure. | CO2 | [K ₂] |
| 6. Define image restoration. | CO3 | [K ₂] |
| 7. State the comparative merits of venturi meter, orifice meter. | CO4 | [K ₂] |
| 8. Define Data acquisition and conversion systems. | CO4 | [K ₁] |
| 9. Mention the advantages of open loop system over closed loop system. | CO5 | [K ₃] |
| 10. List the types of Programming languages used in PLC. | CO5 | [K ₁] |

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

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|-----|----|--|----|-----|-------------------|
| 11. | a) | List and Illustrate about the Static performance parameters of a sensor. | 10 | CO4 | [K ₂] |
| | b) | Define Error and Explain about the types of Error. | 6 | CO1 | [K ₂] |
| 12. | | Explain with necessary sketch about the Positive temperature coefficient device used for measuring temperature in a fabric manufacturing unit. | 16 | CO2 | [K ₁] |
| 13. | a) | Illustrate the functional block diagram of generalized measuring system. | 8 | CO1 | [K ₂] |
| | b) | Relate How it can be used to measure the pressure using bourdon gauge. | 8 | CO1 | [K ₂] |
| 14. | | With an example state the steps involved in extraction of damaged fiber in a continuous fiber manufacturing industry using image processing. | 16 | CO3 | [K ₃] |
| 15. | | Discuss in detail about the types of conveyors used for material handling in manufacturing industry. | 16 | CO4 | [K ₃] |
| 16. | | With neat sketch explain the architecture of Programming Logic controller used for Small scale industrial unit. | 16 | CO5 | [K ₂] |
