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Reg. No. :

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Question Paper Code: 59513

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2019

Elective

Electronics and Instrumentation Engineering

15UEI913 – INSTRUMENTATION FOR AGRICULTURE AND FOOD PROCESSING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Examine the following can be measured using change in resistivity? CO1- R
 - Moisture content
 - Visible radiation
 - Temperature
 - All of the mentioned
- Identify Intelligent sensor in the following CO1- R
 - Thermocouple
 - Smart thermostat
 - PIR sensor
 - LDR
- The software used to drive microprocessor-based systems is called CO2- R
 - Assembly language
 - Firmware
 - Machine language code
 - BASIC interpreter instructions
- Tell 8085 microprocessor has how many pins CO2- R
 - 30
 - 39
 - 40
 - 41
- FSSAI stands for CO3- R
 - Food Safety and Regularity Authority of India
 - Food Systems and Standards Authority of India
 - Food Safety and Standards Authority of India
 - Food Safety and systems Authority of India

6. Identify, Rods are sensitive to CO3- R
 (a) bright light (b) dim light (c) colored Vision (d) blurriness
7. Spectroscopy deals with study of interaction between CO4- R
 (a) Matter and radiation (b) Frequency and light
 (c) Voltage and current (d) Energy and electron
8. Sounds of frequency higher than 20,000 Hz which are inaudible to CO4- R
 normal human ear are called
 (a) Noise (b) Frequency (c) Ultrasonics (d) Amplitude
9. Tell the most abundantly found greenhouse gas? CO5- R
 (a) Carbon dioxide (b) Water vapor (c) Methane (d) Nitrous oxide
10. Light is necessary in the process of Photosynthesis to CO5- R
 (a) Split carbon di-oxide (b) Produce ATP
 (c) Produce methane (d) Release hydrogen

PART – B (5 x 2= 10Marks)

11. Define Hygrometer? CO1- R
12. List the classification of transducer. CO2- U
13. Define modern sensory evaluation. CO3- R
14. List the application of Near Infra-red measurement technology. CO4- R
15. List the major factor characterizing the greenhouse climates. CO5- U

PART – C (5 x 16= 80Marks)

16. (a) Illustrate any two grain moisture measurement techniques in CO1- App (16)
 detail.
- Or
- (b) Illustrate the working of the following CO1- U (8)
 (i) Humidity transducer
 (ii) Carbon -di -oxide gas transducer CO1- U (8)
17. (a) Describe the generalized structure of microprocessors-based CO2- App (16)
 system
- Or
- (b) With neat diagrams, explain the role of SCADA in Agriculture. CO2- Ana (16)

18. (a) Explain the Quantitative Descriptive analysis test in sensory evaluation method. CO3- Ana (16)
- Or
- (b) (i) Analyze the importance of Colour measurement in food industry. CO3- U (8)
- (ii) Explain working principle of any one Spectrophotometers. CO3- U (8)
19. (a) Describe the working principle of On-line infra-red gauge instrument. CO4- U (16)
- Or
- (b) (i) Explain how Ultrasonics been used in food processing. CO4- U (8)
- (ii) Point out the various steps involved in Food Rheology. CO4- U (8)
20. (a) Describe ventilation and cooling system of green house environment. CO5- U (16)
- Or
- (b) Describe the various methods of Infrared and Bio sensors used in agriculture. CO5- U (16)

