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Question Paper Code:49607

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2018

Elective

Instrumentation and Control Engineering

14UIC907- INSTRUMENTATION FOR AGRICULTURE

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

(Answer all Questions)

- Instrumentation and _____ are tools for improving productivity and reducing costs in food processing plants. CO1- R
(a) computer control (b) PI control (c) Fuzzy control (d) PID control
- Precision Agriculture is an emerging area, where _____ technologies play an important role. CO-1 R
(a) control based (b) IC based (c) sensor-based (d) none of the above.
- pH measures the concentration _____. CO2- R
(a) all active ions (b) O_2 + ion (c) H^+ ion (d) S_2 +ion
- Salinity is measured by _____. CO2- R
(a) g salt / kg sea water (b) g pure water / kg sea water
(c) kg salt / g sea water (d) g salt / ltr of sea water

5. Most sensors have a _____ transfer function CO3- R
- (a) non linear (b) linear or non linear (c) linear (d) none of the above
6. A pesticide consists of an active ingredient coupled with inert ingredients. The active ingredient kills the pests, while the inert ingredients facilitate _____ the target plant. CO3- R
- (a) spraying (b) coating (c) spraying and coating (d) kills
7. Digital computer control applications in the process industries may be of _____ type. CO4- R
- (a) passive (b) active (c) passive as well as active (d) passive or active
8. _____ monitoring should provide both productivity improvements and a faster response to abnormal situations. CO4- R
- (a) Centralized (b) Continuous (c) Automated (d) Linear
9. The carbon dioxide concentration in the atmosphere is normally about _____ by volume. CO5- R
- (a) 0.06% (b) 0.09% (c) 0.03% (d) 0.05%
10. The Agrometeorology Station has been designed to allow farmers, agronomists, and researchers to _____ most of the conditions that affect plant health CO5- R
- (a) control (b) monitor (c) monitor & control (d) vary

PART – B (5 x 2= 10Marks)

11. Define remote sensing in agriculture. CO1- R
12. Distinguish between pH and conductivity. CO2- R
13. Draw the flow diagram of sugar plant CO3- R

14. State the term supervisory control. CO4- R
15. Enumerate the uses of data logger. CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Describe in detail about the application of biosensors in agricultural field. CO1- U (16)
- Or
- (b) Explain the standards of food quality. CO1- U (16)
17. (a) Explain the various methods of soil analysis. CO2- U (16)
- Or
- (b) Describe the Instrumentation for environmental conditioning of seed germination. CO2- U (16)
18. (a) Discuss the steps and process involved in the oil extraction plant. CO-3 App (16)
- Or
- (b) Draw the flow diagram of dairy industry and confectionary industry? CO-3 App (16)
19. (a) Describe the auto trip irrigation systems. CO-4 U (16)
- Or
- (b) Discuss the application of SCADA for DAM parameters and control. CO-4 App (16)
20. (a) Discuss the heating, cooling and ventilating system adopted in greenhouse. CO-5 App (16)
- Or
- (b) Write neat diagram explain how the instrumentation is used in water distribution and control in agriculture. CO-5 App (16)

