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Question Paper Code: 49607

B.E./B.Tech. DEGREE EXAMINATION, SEP 2020

Elective

Instrumentation and Control Engineering

14UIC907- INSTRUMENTATION FOR AGRICULTURE

(Regulation 2014)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following Questions)

1. 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
2. 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.
3. pH measures the concentration _____. CO2- R
(a) all active ions (b) O₂ + ion (c) H⁺ ion (d) S₂+ion
4. 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 (3 x 8= 24 Marks)

(Answer any three of the following Questions)

11. Explain the standards of food quality.. CO1- U (8)
12. Explain the various methods of soil analysis. CO2- U (8)
13. Discuss the steps and process involved in the oil extraction plant. CO3 -U (8)
14. Discuss the application of SCADA for DAM parameters and control. CO4- U (8)
15. Write neat diagram explain how the instrumentation is used in water distribution and control in agriculture. CO5- U (8)