

AUTOMATIC LIQUID LEVEL CONTROLLER USING A LABVIEW BASED PC

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Abstract

A liquid level control system was designed and fabricated to control the level of a liquid in a water tank that had a randomly varying inlet. Control of the water level was accomplished by adjusting a gate valve in the drainpipe located at the bottom of the tank. A solenoid actuator, operated in a continuous mode, controlled the gate valve opening and a pressure sensor provided liquid level feedback to the controller. Input to this system was a random flow disturbance consisting of water entering the top of the tank through three pipes controlled by solenoid valves and programmed to randomly switch on and off. The liquid level control system was implemented with a PC running National Instruments LabView software allowing student interaction with the system. In conclusion, the system using a PC operated successfully and will be used as a teaching tool in a university class on feedback control theory.

1. Background

Automatic control systems have been evolving over the past 150 years[1]. These systems began as simple mechanical feedback devices and have evolved into complex electronic and computer controlled systems. The education of students in control systems is one of the functions of Arizona State University East's College of Technology and Applied Sciences.

This project consists of completing an apparatus that demonstrates the automatic control of water level in a tank that is being randomly filled. Random filling of the tank represents a real life unpredictable disturbance to the system. Automatic control is accomplished with the use of a personal computer operated with LabView software. Automatic control is accomplished by sensing the water level and then controlling the position of a gate valve that releases water from the tank. A manual control is also included so that the benefits of the automatic control can be demonstrated. This physical model will be used as a teaching aid so that the students can interact with and visually see a dynamic control system operating in real time.

Automatic Liquid Level Controller Using Labview

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2/Week 8 Title: Rikki-tikki-tavi Suggested Time Students complete an evidence chart as a pre-writing activity. Teachers should ... Answer: Tasks and answers available in the anthology on page 137. • After ... Payroll Practice Test Newly hired employees must be reported to governmental officials within 20 days of starting work for an employer. A) True. B) False. Page 4. Payroll Practice ... Payroll Accounting Quiz and Test Payroll Accounting (Practice Quiz). Print PDF. For multiple-choice and true/false questions, simply press or click on what you think is the correct answer. The Payroll Source CPP Practice Exam THE PAYROLL SOURCE. CPP PRACTICE EXAM. 1. Which of the following features is LEAST likely to be considered when looking at the security of a new payroll system? Payroll Accounting - Practice Test Questions & Chapter Exam Test and improve your knowledge of Payroll Accounting with fun multiple choice exams you can take online with Study.com. Test Your Payroll Knowledge - BASIC Sep 1, 2010 — The correct answers are listed at the bottom of this quiz. Quiz Questions: 1) What form is used to obtain a Social Security number? A) Form SS- ... study guide payroll specialist Payroll Specialist. Test #2820.r0319. Sample Questions. The following sample questions should give you some idea of the form the test will take. 1. Which SAP ... Free Fundamental Payroll Certification Practice Test (2023) Nov 2, 2023 — Fundamental Payroll Certification Exam Outline. The FPC exam contains 150 multiple-choice questions, 25 of which are unscored, and you will be ... Certified Payroll Professional Practice Test Oct 31, 2023 — The Certified Payroll Professional exam contains 190 multiple-choice questions, 25 of which are unscored, and you are given a four-hour time ...