

GRADE 11 FINAL EXAM PROJECT

A BRIDGE ACROSS THE WELLAND CANAL

THE TASK; Design and build a working model of one of the bridges that crosses the Welland canal including some of the roadbed on both sides of the bridge.

PROJECT REQUIREMENTS;

- 1) The bridge must go up and down.
- 2) There must be at least 2 working bridge crossing gates (go up and down).
- 3) A buzzer will be provided which must sound when the bridge is about to go up and while it begins to go up and the same must happen when the bridge is going back down.
- 4) The arrestor arms must have flashing lights that go on when they are in the down position.
- 5) Any material in the shop may be used to construct mock-ups and the finished model.
- 6) Detailed finished drawings will be required for the report portion of the project but can be completed after the model is finished.
- 7) The operating sequence of events will happen automatically with the push of one button by the bridge master using a programmable logic controller (a PLC)
- 8) You have until Jan 20/2012 to complete the practical portion and the report portion of the project.

FINAL EXAM EVALUATION

PRACTICAL PORTION OF EXAM (70 %) ;

1) FABRICATION

30 MARKS

- *Sturdiness of the model
- *Is it finished ? (sanded, painted, etc.)
- *Is it square?

2) PNEUMATIC AND ELECTRICAL SYSTEMS

10 MARKS

- *Are they set up correctly?
- *Are they organized (not messy)?

3) FUNCTIONALITY

30 MARKS

- *Does the bridge work?
- *Do the arms work?
- *Does the buzzer work?
- *Do the arrestor lights work?
- *Does the whole project work?

FINAL EXAM EVALUATION

REPORT PORTION OF EXAM (30%) ;

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