WRITE YOUR ANSWERS ON THESE PAGES

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END OF PAPER

EXAMINATION FOR THE ISSUE OF A LICENCE TO ACT AS WIREMAN - LIC'B' Practical Test 2013 Time Allowed: 1 Hr

NAME & SURNAME	INDEX NO.	
(in Block letters)		

- 1. An I-beam or Crane beam is required to travel along the workshop overhead rail using two identical 3kW motors (installed one on each side). The identical two motors are marked A & B which are coupled to a very low speed reduction gear-box. The overhead crane is supplied by a three phase and earth busbar system i.e. no neutral is available.
 - a) Draw a circuit diagram showing the control of the two motors operated from a 10m suspended cable connected to a pendent box. General requirements:
 - i. The forward motion
 - ii. The reverse motion
 - iii. Stop button
 - iv. Overload current device on EACH Motor
 - v. Contactors and Auxiliary contacts
 - vi. Control transformer 400V/24V
 - b) State the rating of the overload current device.
 - c) State the type of contactor used to eliminate short-circuit during the forward or reverse motion selection.
 - d) How many cores are required for the pendant control cable?

Material to be used:

- 1. One common 4-pole Contactor for the two Motors used for Forward motion.
- 2. One common 4-pole Contactor for the two Motors used for Reverse motion.
- 3. Two Auxiliary contacts (Normally Closed).
- 4. One stop button.
- One forward button.
- 6. One reverse button.
- 7. Overload protection for each motor (complete with Normally Closed contacts).
- 8. Two three phase Induction motors 400Volts, 50Hz, 3kW (each) assume 0.8 lag power factor.
- 9. One Step-down transformer 400V/24V. Pendant box