



EXAMINATION: AUTHORISATION B

April 2021

Practical Test

Time Allowed - 1½Hr

Name & Surname _____
(In Block letters)

Index No. _____

1. The electrical load of a small factory consists of the following:

- 1 by 4.5 KVA three-phase motor, pf 0.8
- 4 by 3 KW thermostatically controlled heaters.
- 1 by 12 KW single-phase cooker
- 1 by 6 KVA three-phase motor, pf 0.8
- 2 by 3 KW single-phase instantaneous type water heaters.
- 6 by 32 Amps ring circuits
- 9 KW of discharge lighting

Assuming a three-phase and neutral 415/240 volts supply and that the single-phase loads are closely balanced. Calculate:

- a. The total demand. **(12 marks)**
- b. Allow for future expansion. Calculate the size of the main switchgear. **(12 marks)**
- c. Draw a single line diagram showing the switchboard and how you would install each load. Label the size and the current rating of each load component of the switchboard. Cable sizes are not required. **(16 marks)**

PLEASE WRITE YOUR ANSWERS AND DRAWINGS HERE

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