



UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
JANUARY 2011 SESSION

SUBJECT CODE : FEB 20202
SUBJECT TITLE : MOTOR STARTER AND DRIVES
LEVEL : BACHELOR
TIME / DURATION : 8.00pm – 10.00pm
(2 HOURS)
DATE : 03 MAY 2011

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. Please write your answers on the answer booklet provided.
4. Answer should be written in blue or black ink except for sketching, graphic and illustration.
5. This question paper consists of TWO (2) sections. Section A and B. Answer all questions in Section A. For Section B, answer two (2) question only.
6. Answer all questions in English.
7. Do not open the question paper until instructed to do so.

THERE ARE 6 PAGES OF QUESTIONS AND 5 PAGES OF APPENDIX, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)**INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 1**

- (a) Draw the symbol of the components as listed below and describe their function;
- i. Push buttons (3 marks)
 - ii. Isolator (3 marks)
- (b) The installation of a motor control needs to be protected against short circuit and overload current.
- i. Define the overload current (2 marks)
 - ii. Name the component used to protect against overload current. (1 marks)
- (c) List four (4) situations that will contribute to overload current against 3-phase induction motor installation. (3 marks)
- (d) Identify the suitable connection (3-phase motor winding) of the 240 V / 415 V induction motor with line voltage, $V_L = 240$ V and also determine the phase voltage, V_P . (3 marks)

Question 2

(a) **Figure 1** shows the control diagram of a forward-reverse conveyor.

- i. Identify the components F1, S1, F2, and KM2 (4 marks)
- ii. Explain the operation of the circuit in Figure 1 (7 marks)
- iii. Describe the functions of KM1 (13-14). (2 marks)
- iv. Identify "X" and describe its function. (3 marks)

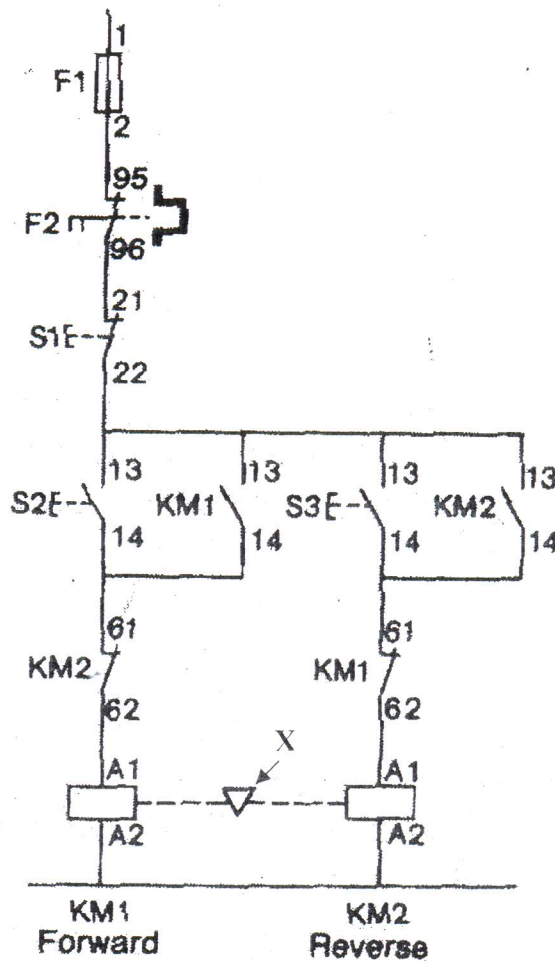


Figure 1 Control Diagram

