

**CONFIDENTIAL**



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
(TAKE HOME)  
SEMESTER II  
SESSION 2019/2020**

**COURSE NAME** : **INDUSTRIAL AUTOMATION  
SYSTEM**

**COURSE CODE** : **BEH31103**

**PROGRAMME CODE** : **BEJ**

**EXAMINATION DATE** : **JULY 2020**

**DURATION** : **3 HOURS**

**INSTRUCTION** : **ANSWER ALL (3) QUESTIONS  
OPEN BOOK EXAMINATION**

**THIS PAPER CONSISTS OF FIVE (5) PAGES**

**CONFIDENTIAL**

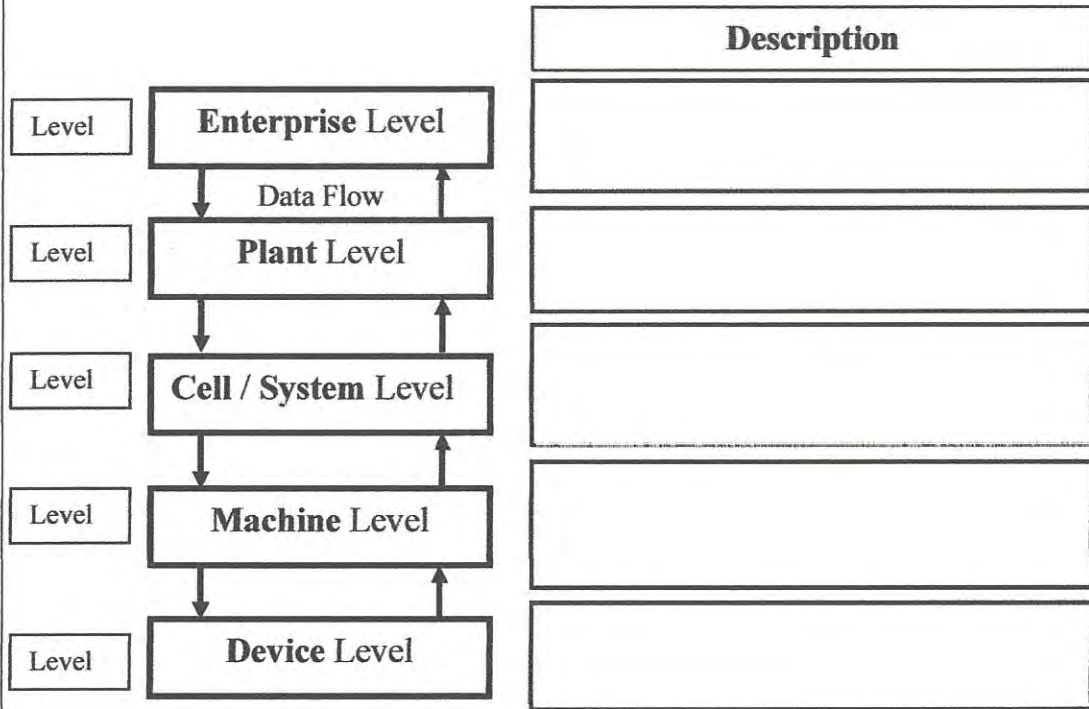
**TERBUKA**

- Q1** (a) Analyze the level of automation, based on **Figure Q1(a)**, considering in your answer a manufacturing plant of pulp and paper industry as in **Figure Q1(b)**. Use the space provided in page 3 to answer. (10 marks)
- Q2** (a) Explain briefly the function of the detector circuit of the proximity switch (3 marks)
- (b) Variable Reactance Sensor (VRS) and Magneto Resistive Sensor (MRS) can be used in similar application.
- (i) Explain the operation of VRS and MRS with appropriate diagram. (5 marks)
- (ii) List 2 characteristics of both VRS and MRS respectively. (2 marks)
- Q3** (a) An electromagnetic relay unit is shown in **Figure Q3 (a)**. Discuss how the relay is functioning when a current is flowing through the coil of the relay, and explain the importance of the **air gap** and the **spring** indicated in the same figure. (5 marks)
- (b) A cylinder and piston as shown in **Figure Q3(b)**.is used widely in industrial automation system
- (i) Identify the type of the cylinder and piston. (1 marks)
- (ii) Identify the different parts (1-8) of the cylinder indicated. (4 marks)

- END OF QUESTIONS -

**FINAL EXAMINATION**

SEMESTER/SESSION : SEM II/2019/2020 PROGRAMME CODE :BEJ  
COURSE NAME : INDUSTRIAL AUTOMATION SYSTEM COURSE CODE :BEH31103



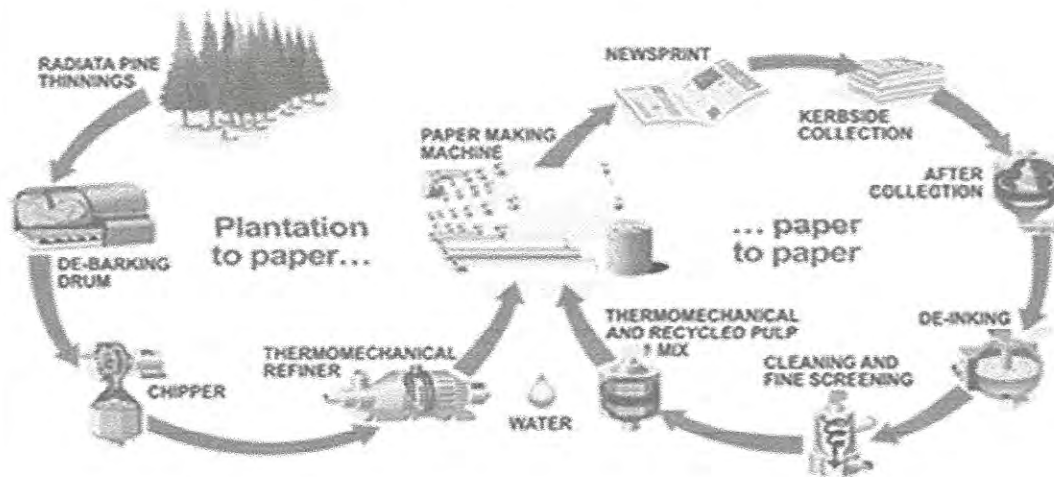
**Figure Q1(a)**

**TERBUKA**

FINAL EXAMINATION

SEMESTER/SESSION : SEM I/2019/2020 PROGRAMME CODE :BEJ  
COURSE NAME : INDUSTRIAL AUTOMATION SYSTEM COURSE CODE :BEH31103

# Pulp and Paper Manufacturing Process



## Pulp and Paper Industry

Figure Q1(b)

**TERBUKA**

FINAL EXAMINATION

SEMESTER/SESSION : SEM II/2019/2020 PROGRAMME CODE :BEJ  
COURSE NAME : INDUSTRIAL AUTOMATION SYSTEM COURSE CODE :BEII31103

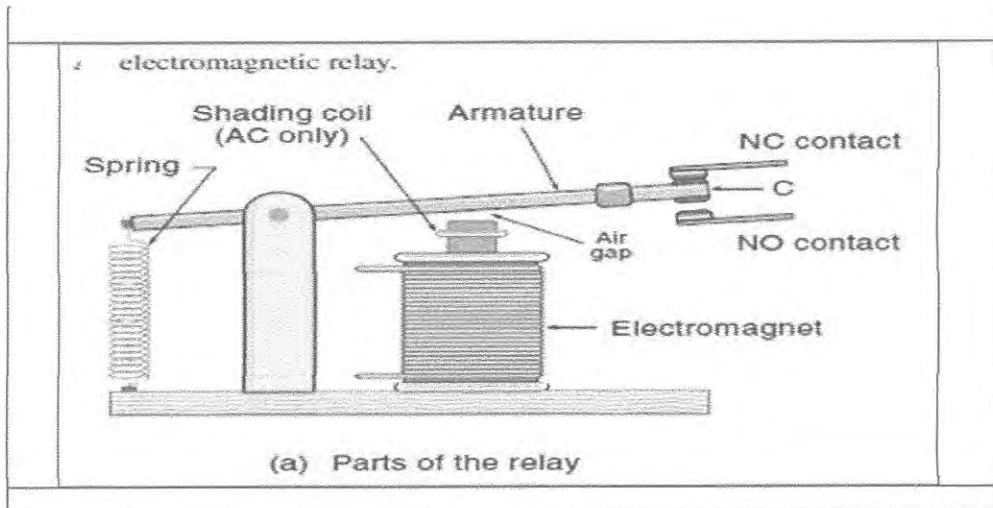


Figure Q3(a)

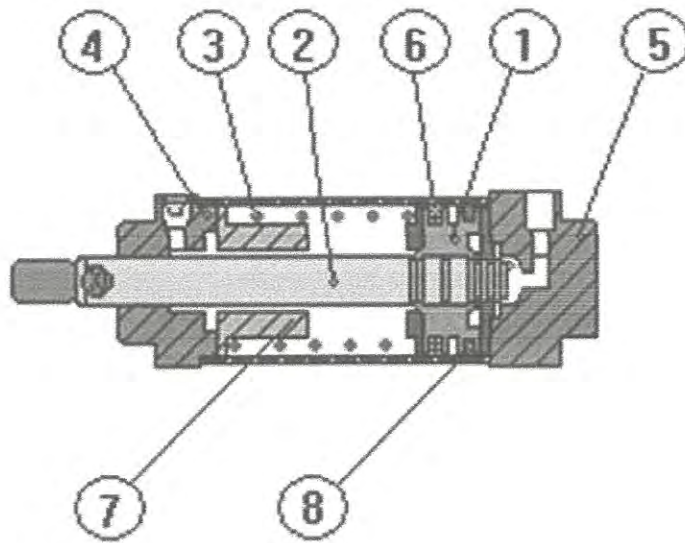


Figure Q3(b)

TERBUKA