



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2014/2015**

COURSE NAME : PLANT FABRICATION
TECHNOLOGY

COURSE CODE : BNL 20303

PROGRAMME : 2 BNL

EXAMINATION DATE : JUNE 2015 / JULY 2015

DURATION : 3 HOURS

INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

Q1 (a) Explain briefly:

- (i) Revision block
- (ii) Grid system
- (iii) Changes
- (iv) Notes and legend

(8 marks)

(b) State **five (5)** areas that are required to generic engineering drawing.

(5 marks)

(c) "Ahmad is drawing a map of his block. The actual block is 1800 feet long and 1260 feet wide. Ahmad needs his drawing to fit on his paper, so he decides to make the long side 10 inches."

- (i) Based on the situation given, determine the scale Ahmad should use.
- (ii) Calculate the area of Ahmad's drawing in square inches.

(7 marks)

Q2 (a) Differentiate between fabrication, construction, and architectural drawings and give example of each type of drawings.

(9 marks)

(b) P&IDs, fabrication, construction, and architectural drawings can be presented using one of the several different formats. List all of them.

(4 marks)

(c) Define single line drawing and explain its advantages. Give an appropriate example.

(7 marks)

Q3 (a) Interpret the symbols used on engineering P&IDs for the following;

- (i) Globe valve
- (ii) Gate valve
- (iii) Butterfly valve
- (iv) Process line
- (v) Tanks
- (vi) Strainers

(6 marks)

(b) Based on the pictorial drawing as shown in Figure **Q3**, sketch its P&ID drawing.

(14 marks)

Q4 (a) Based on P&ID drawing shown in Figure **Q4**, identify the following components by letter or number.

- | | | | |
|-------|----------------------|-------|-----------------------|
| i. | Centrifugal pump | ix. | Throttle valve |
| ii. | Heat exchanger | x. | Conductivity cell |
| iii. | Tank | xi. | Air line |
| iv. | Venturi | xii. | Check valve |
| v. | Rupture disc | xiii. | A locked-closed valve |
| vi. | Relief valve | xiv. | A closed valve |
| vii. | Motor-operated valve | xv. | A locked-open valve |
| viii. | Air-operated valve | xvi. | A solenoid valve |

(16 marks)

(b) Draw the following valve conditions depicted on an engineering P&ID drawing.

- i. Open valve
- ii. Valve fails open
- iii. Three-way valve with one port open
- iv. Valve fail closed

(4 marks)

- END OF QUESTION -

FINAL EXAMINATION

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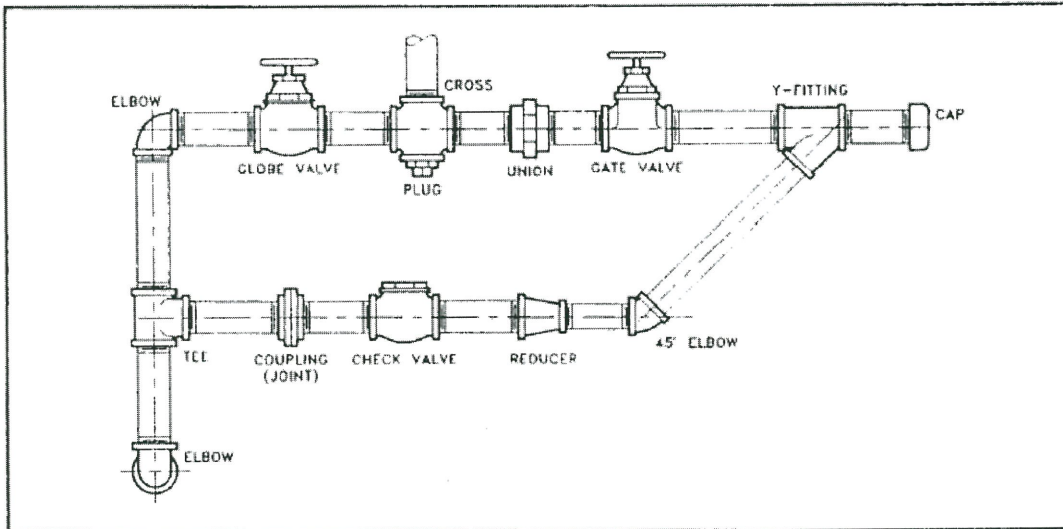


FIGURE Q3

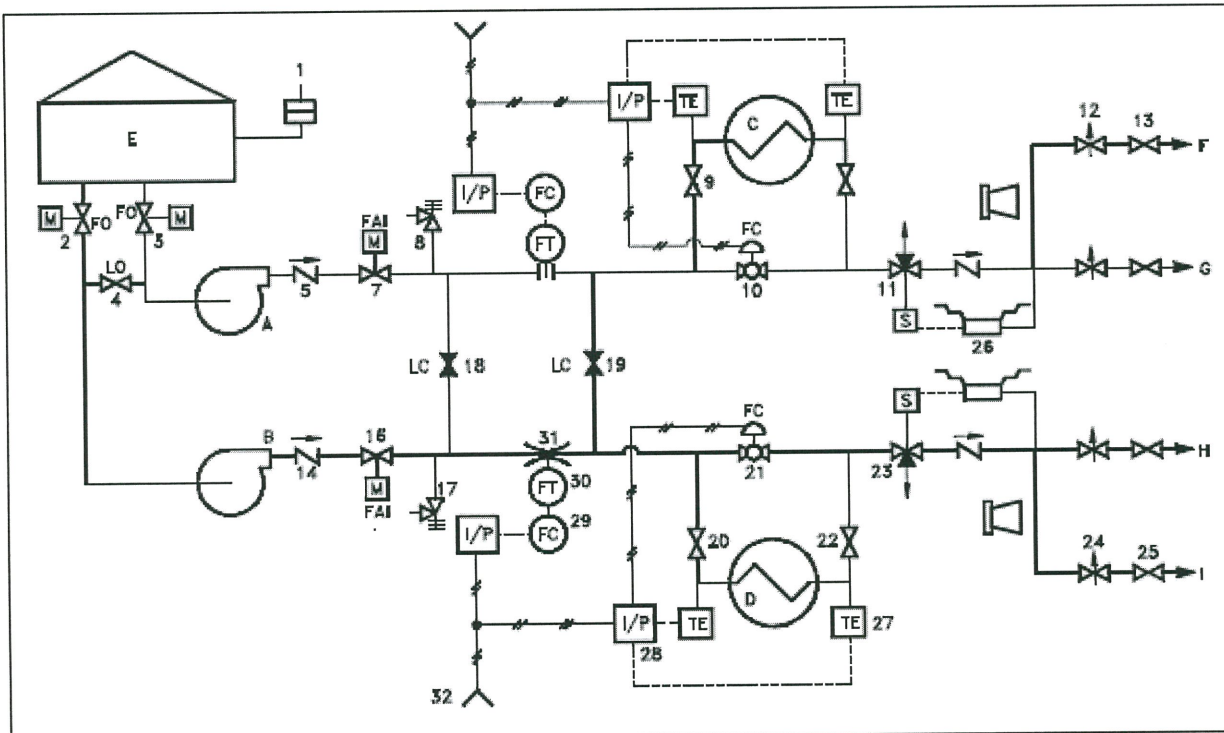


FIGURE Q4