TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF MECHANICAL AND AUTOMOTIVE ENGINEERING

DIPLOMA IN MECHANICAL ENGINEERING
(DMEN V)

EPL 2301: PLANT MAINTENANCE & WORKS DRAWING I

END OF SEMESTER EXAMINATIONS

SERIES: APRIL 2015

TIME: 2 HOURS

INSTRUCTIONS:

- This paper consists of **FIVE** questions.
- You should have the following:
  1. A2 Drawing paper
  2. Drawing instrument
  3. Colour paper has FIVE questions

  Answer question **ONE (Compulsory)** and any other **TWO** questions.

This paper consists of Three printed pages.

QUESTION 1 (Compulsory)

a) Draw the sectional views of the following boiler plant and steam distribution components:
   i) Ogden pump condensate pump
   ii) A thermodynamic type steam trap
   iii) A high pressure fuel yet boiler burner

(15 marks)

b) Draw a labeled sectioned view of:
   i) A non manipulative type of a pipe joint
   ii) A stuffing box details of gland, seal. **(9 marks)**

c) Illustrate the isometric layout of the form type-fixed installation fire extinguisher. **(6 marks)**

QUESTION 2

a) Sketch a sectional view of a lubricator for a compressed air distribution system. **(4 marks)**

b) Draw a hydraulic circuit to incorporate the following:
   - Power unit
   - Two pilot operated relief value
   - Two pressure gauges
   - One shut-off value
   - 4/3 way control valve
   - One check value
   - Accumulator

(8 marks)

c) Draw an isometric view of an expansion loop in a steam distribution system. **(3 marks)**

QUESTION 3

a) i) Draw a two line diagram of compressed air ring main layout to include supply to percussive tool
   ii) Draw a sectioned view of a pressure regulator. **(12 marks)**

b) Sketch a sectioned view of Rawl bolt used in machine installations. **(3 marks)**

QUESTION 4

a) Draw one-line hot water supply system to a multi-storey building. **(8 marks)**

b) Draw a sectioned view of the following:
   i) Croydon type ball valve
   ii) Globe stope valve **(7 marks)**

QUESTION 5

a) Draw a circuit of Auto-transformer starting of a 3-phase induction motor. **(4 marks)**

b) Draw an electrical installation circuit sequence of power supply control equipment in a private residence. **(4 marks)**

c) Draw a typical wiring of a small factory. **(7 marks)**