

# 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	S:
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	
<ul> <li>Two pressure gauges</li> </ul>	
<ul> <li>One shut-off value</li> </ul>	
• 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	
<ul><li>a) i) Draw a two line diagram of compressed air ring main layout to include supply to percuii) Draw a sectioned view of a pressure regulator.</li></ul>	ssive tool (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)