



MURANG'A UNIVERSITY COLLEGE

A Constituent college of Jomo Kenyatta University of Agriculture and Technology

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

DIPLOMA IN PRODUCTION ENGINEERING CLASS:ME/14DJ

SUPPLEMENTARY EXAMINATION YEAR II-SEM I

WORKSHOP TECHNOLOGY II . SEM1208

DATE: 30TH OCTOBER 2015

TIME:2 HOURS

INSTRUCTIONS TO CANDIDATES.

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

Question One:

- (a) State **four** safety precautions associated with arc welding. (4 marks)
- (b) Explain using a sketch, the principle of arc welding. (5 marks)
- (c) (i) Explain any **two** safety precautions to be observed during handling and storage of gas cylinders. (4 marks)
- (ii) Sketch and label, a complete gas welding equipment. (8 marks)
- (d) State **three** functions of a flux applied in soldering. (3 marks)
- (e) Explain the following terms as used in soldering
 - (i) A burnt iron
 - (ii) Tinning a bit
 - (iii) Sweating (6 marks)

Question Two:

- (a) (i) State **three** advantages of the right-ward oxy-acetylene gas welding technique over the left-ward technique.
- (ii) With the aid of sketches, describe the right-ward oxy-acetylene gas welding technique. (10 marks)
- (b) With the aid of sketches, describe the following types of gas flames.
 - (i) Neutral
 - (ii) Carburizing
 - (iii) Oxidizing (10 marks)

Question Three:

With the aid of sketches, describe the following welding processes:

- (a) (i) Spot welding
- (ii) Seam welding (12 marks)
- (b) Submerged arc welding. (8 marks)

Question Four:

- (a) (i) Name **two** alloys used in soldering and state the composition of each.
- (ii) Outline **four** requirements of soft solder (6 marks)
- (b) State **four** applications of soft soldering. (4 marks)
- (c) Outline any **six** requirements that must be observed for a good brazed joint. (6 marks)
- (d) Differentiate between brazing and braze(bronze) welding. (4 marks)