



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

SECOND SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL ENGINEERING

BCE CD 301: WORKSHOP TECHNOLOGY (MECHANICAL)

Date:

Time:

INSTRUCTIONS

This paper consists of FIVE questions

Answer question one (compulsory) carry 30 marks and any other two questions

QUESTION ONE COMPULSORY

- a) Briefly explain five precautions considered in safety of machine tools (10 marks)
- b) Outline three fire-fighting techniques. (3 marks)
- c) Name any three classes of fire risks citing examples in each case. (7 marks)
- d) Outline the scope first aid. (8 marks)
- e) Define the term pump. (2 marks)

QUESTION TWO

- a) Describe three basic essentials required before a fire can start. (6 marks)
- b) Outline why it is necessary to give first aid to casualties. (3 marks)
- c) State four measures that are considered in the use of a hacksaw. (4 marks)
- d) Outline seven functions of a pump. (7 marks)

QUESTION THREE

- a) With the aid of a neat well labeled diagrams, explain how a four stroke cycle petrol engine operates. (20 marks)

QUESTION FOUR

- a) List down four advantages and four disadvantages of centrifugal pumps. (8 marks)
- b) List down five factors to be considered when installing a pump. (5 marks)
- c) Enumerate three important points to consider regarding pumps. (7 marks)

QUESTION FIVE

- a) A single acting reciprocating pump delivers 2623 l/hr
- | | | |
|---------------------|---|------------|
| Piston rod diameter | = | 20 mm |
| Stroke (s) | = | 110mm |
| n | = | 90 rev/min |
- Calculate the piston diameter (10 marks)
- b) A double acting reciprocating pump delivers 4154 m³/hr
- | | | |
|---------------------|---|------------|
| Piston rod diameter | = | 20mm |
| Stroke | = | 160 mm |
| n | = | 54 rev/min |
- Calculate the piston diameter. (10 marks)