



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

FIRST YEAR SECOND SEMESTER EXAMINATIONS

**FOR THE DIPLOMA
IN
MECHANICAL ENGINEERING**

COURSE CODE: DME 068

COURSE TITLE: ENGINEERING DRAWING AND DESIGN II

DATE: 28/04/2022 TIME: 8:00-10:00 AM

INSTRUCTIONS TO CANDIDATES

Answer question ONE and any other two questions

TIME: 3 Hours

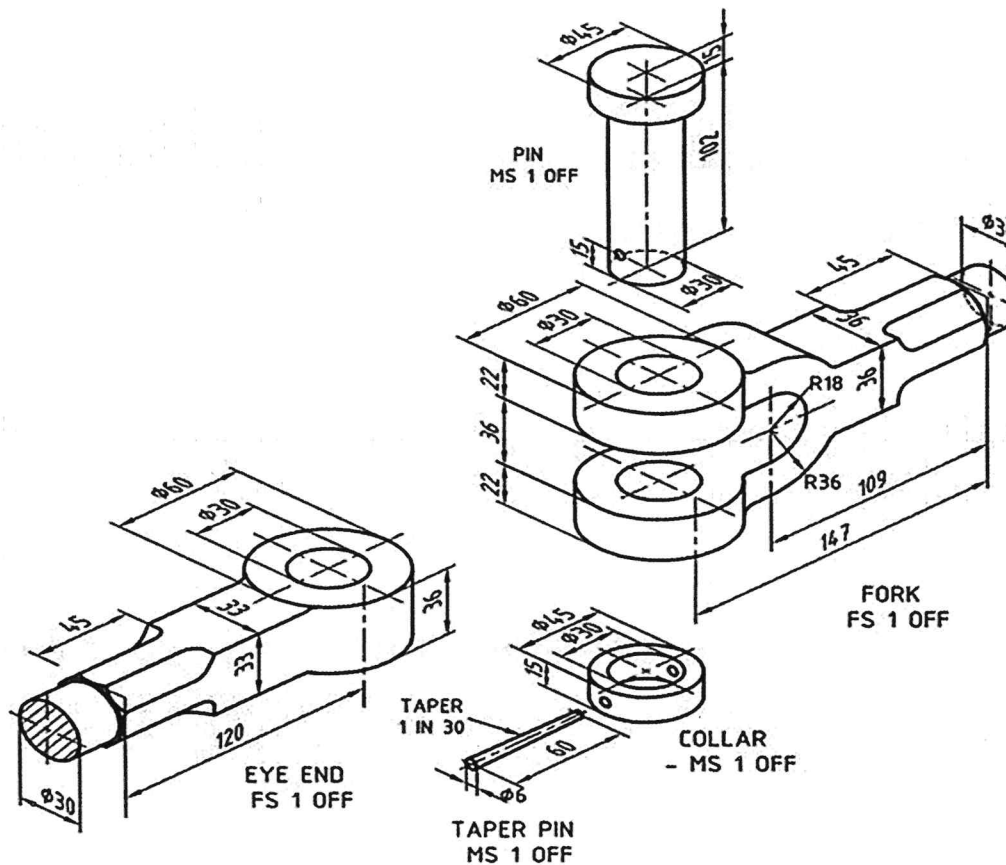
MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

QUESTION ONE

(30 marks)

- a) The figure below shows a knuckle joint. Draw in first angle orthographic projection, the following views of the assembled knuckle joint.
- A sectioned elevation; the cutting plane being vertical
 - A plan and include itemized partlist.



QUESTION TWO

(20 marks)

- a) An oil company has a piping channel used to convey oil. One line comprises of a square prism completely interpenetrated through the corners by a horizontal cylinder of diameter 30mm and horizontal length 90mm. The length of the diagonals of the square base are 50mm. Draw;
- The plan
 - The front and the end
 - Locate the line of intersection of the two pipes

b) Describe TWO types of lubrication system used in an industry (4 marks)

QUESTION THREE (20 marks)

a) Draw an involute of a circle of diameter 60 mm. (10 marks)

b) With the aid of a sketch discuss the following types of keys (6 marks)

- i. Sunken gib-head keys
- ii. Sunken rectangular keys
- iii. Hollow saddle keys

c) Give FOUR functions of shaft coupling. (4 marks)

QUESTION FOUR (20 marks)

a) Draw a profile of a spur gear showing SIX teeth with the following data. (12 marks)

- i. Number of the teeth = 24
- ii. Pressure angle = 20°
- iii. Module = 6

b) Discuss the function of gaskets in a machine component and list THREE types of gaskets used and area of application (5 marks)

c) List THREE types of gears used in an industry (3 marks)

