



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

UNIVERSITY EXAMINATION FOR:

BSC IN MEDICAL ENGINEERING

EME 4154: ENGINEERING DRAWING II

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: 18 May 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, Drawing Instruments, Scientific calculator, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

A machine support unit is shown in FIG 1. Construct in the **FIRST** angle orthographic projection on a scale of 1:1 to show

- i. A front sectional elevation on plane A - A
- ii. An end elevation on plane E
- iii. A plan elevation on plane P
- iv. Full dimensions

(30 Marks)

Question TWO

A disc cam of minimum diameter 30mm is designed to impart the following motions on a knife edge follower

- Rise 60 mm with UA and R motion $0^\circ - 180^\circ$
- Dwell $180^\circ - 270^\circ$
- Fall 60 mm with SHM $270^\circ - 360^\circ$

i) Construct, on an appropriate scale, the displacement graph for this cam

(20 Marks)

Question THREE

Construct to show the crank mechanism shown in FIG 2. If crank A-D makes one rotation and crank B – C reciprocates about B and link P – C is pin-jointed at B and C.

i) For one rotation of crank A – D, plot the locus of point P

(20 Marks)

Question FOUR

FIG 3 shows two views of an open ended pentagonal based pyramid, whose plan view is incomplete.

- i. Construct to show the two views on a full size scale
- ii. Construct to complete the plan view
- iii. Construct to show the economical sheet metal development of the pyramid

(20 Marks)

Question FIVE

Two open ended cylinder system assembly is shown in FIG 4

- i. Construct to show the assembled system to include a plan view
- ii. Construct to show the interpenetration curve of the assembly on the front view
- iii. Construct to show the end view for the system in the arrow direction E

(20 Marks)

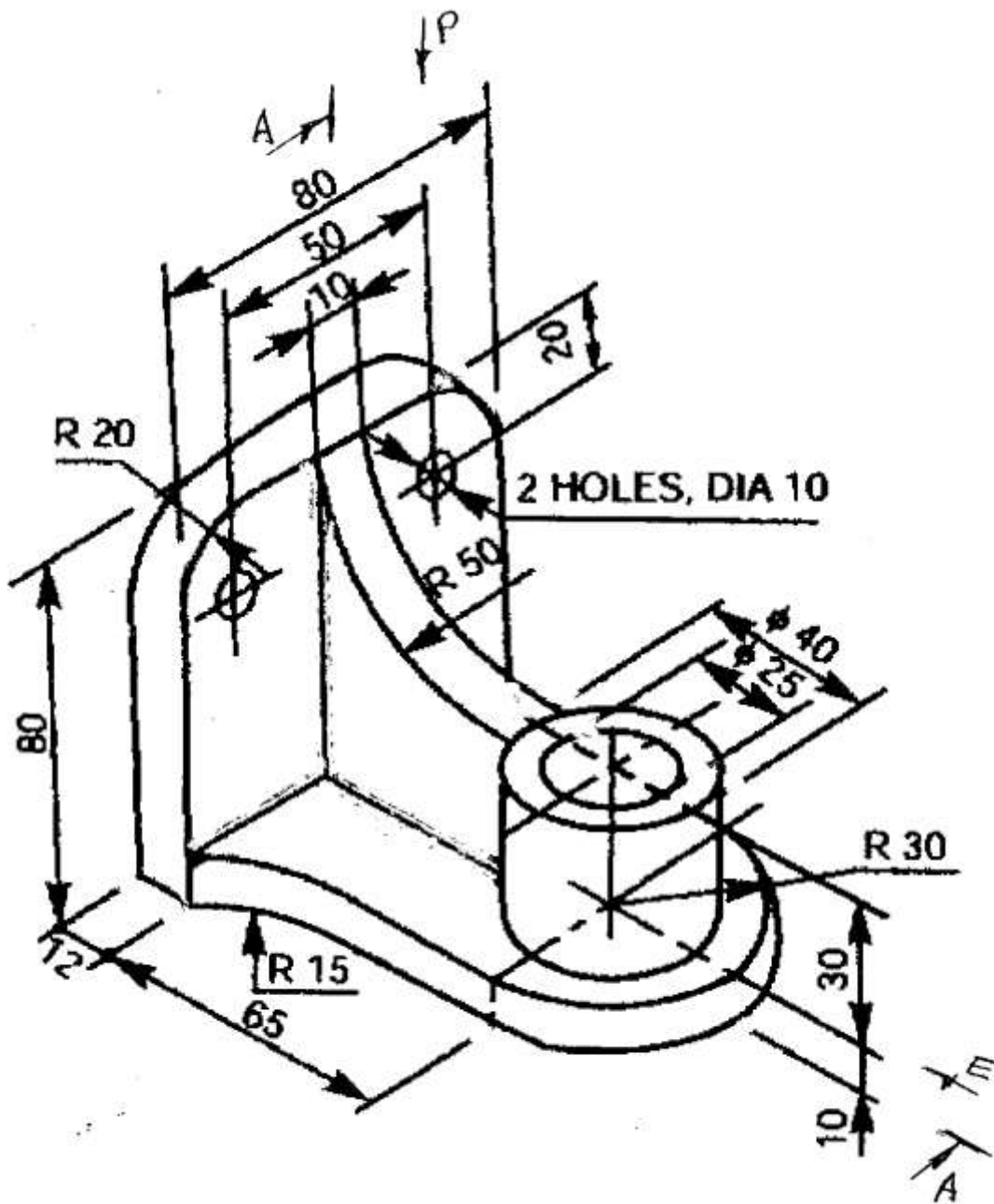


FIG 1

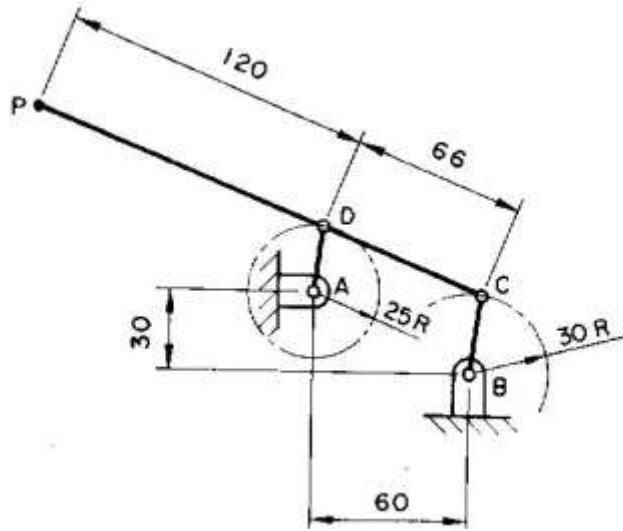


FIG 2

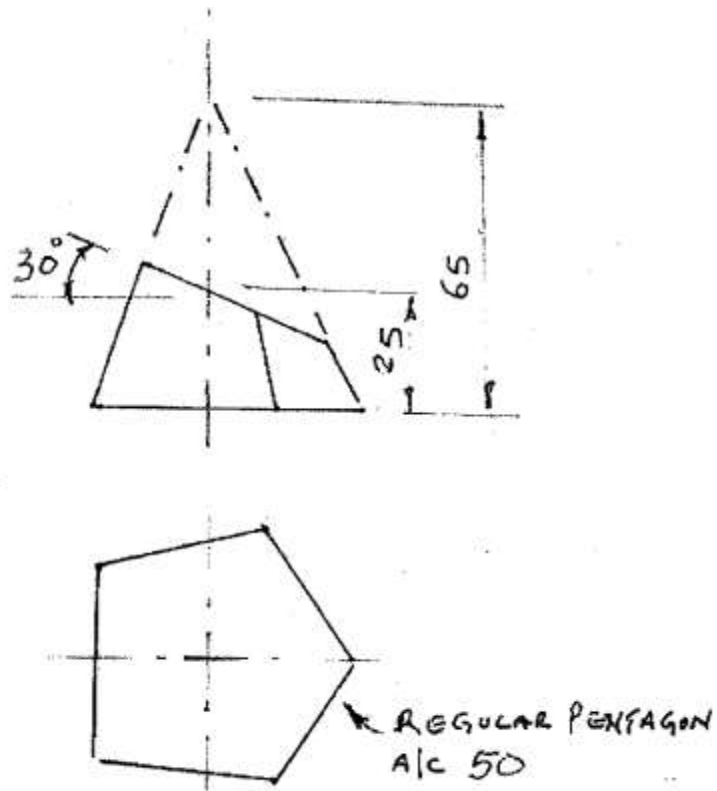


FIG 3

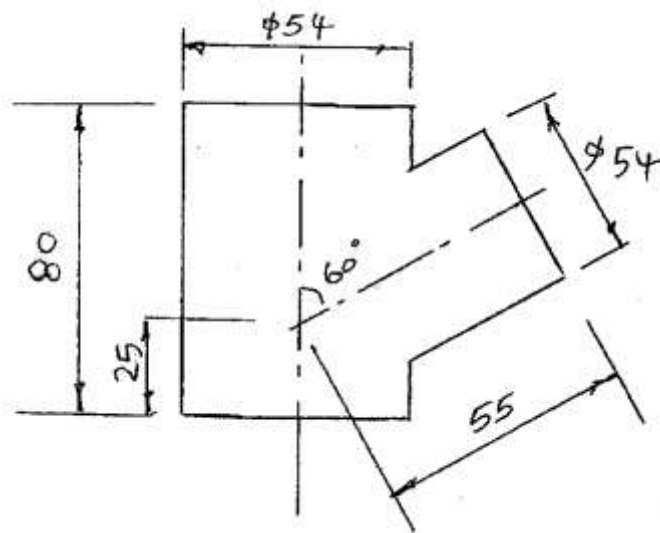


FIG 4