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: APRIL2016

TIME: 2HOURS

DATE: 17May2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

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

Do not write on the question paper.

Question ONE

Fig 1 shows an engineering component. Draw to show the component using the FIRST angle orthographic projection on a scale of 1:1 to include:-

i. Front sectional view on plane X-X
ii. End elevation on plane E
iii. Plan elevation on plane P
iv. Full dimensions

(30 Marks)

Question TWO

Fig 2 shows a truncated hexagonal based pyramid, whose plan view is incomplete.

i. Construct to show the views on 1st angle orthographic projection
ii. Complete the plan view

iii. Include an end view as seen in arrow direction E
iv. Construct to show the auxiliary view of the top part

(20 Marks)

Question THREE

Two open ended cylinders are shown in Fig 3.

i. Construct to show the two cylinders
ii. Include a plan view of the cylinders
iii. Construct to show the interpenetration curve of the two cylinders

(20 Marks)

Question FOUR

Construct to show the link mechanism set-up shown in Fig 4.Crank OA is pin-jointed and rotates about O while point B is constrained to move along path X-X. If Crank OA = 30mm and link AB = 100mm, construct to show the locus of mid-point P of link AB for one rotation of crank OA

(20 Marks)

Question FIVE

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

- 30mm rise with UV 0^o - 180^o
- Dwell 180^o - 270^o
- Fall with SHM 270^o - 360^o

i) Construct to show the displacement graph for these motions.

(20 Marks)

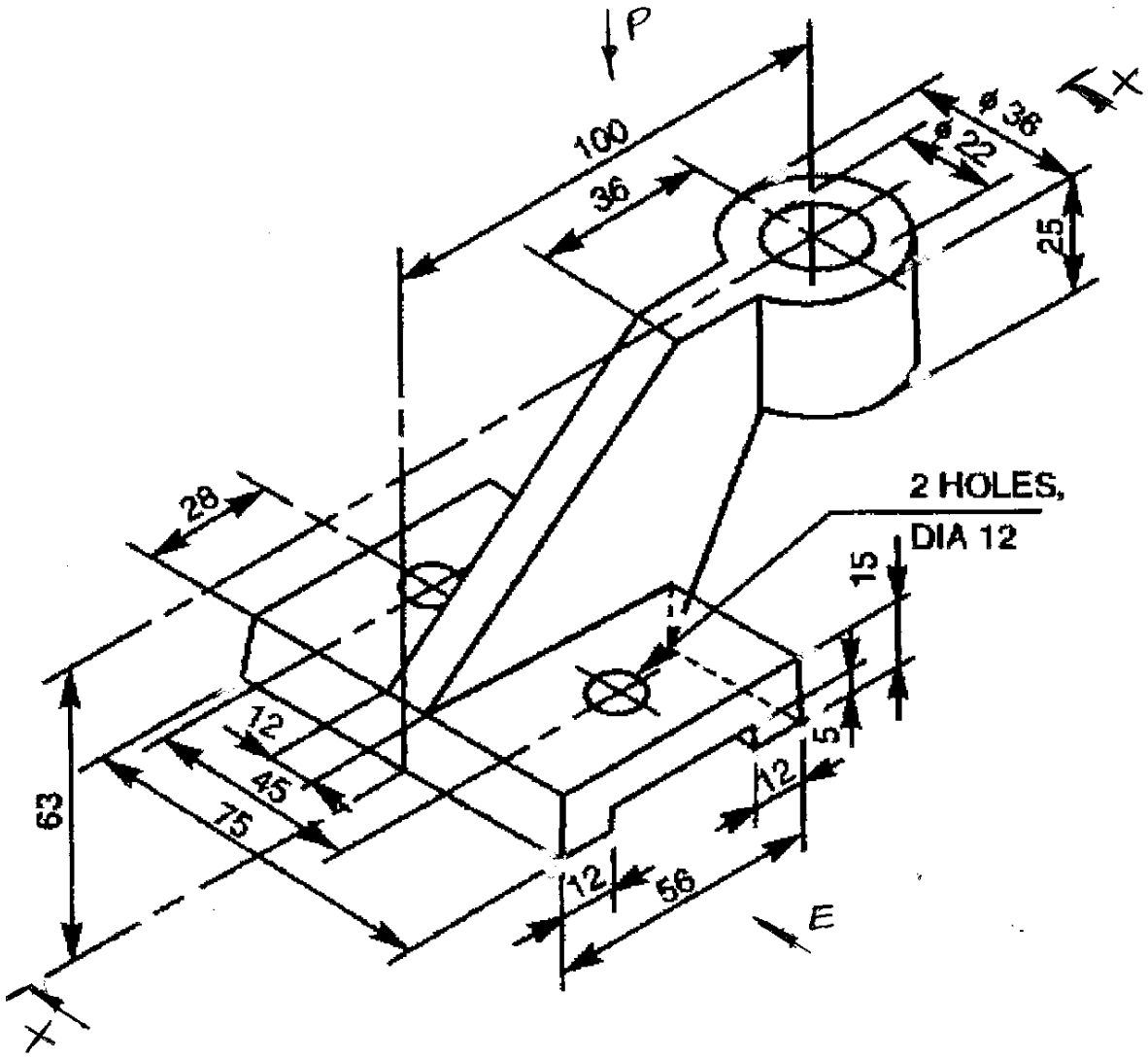

FIG 1

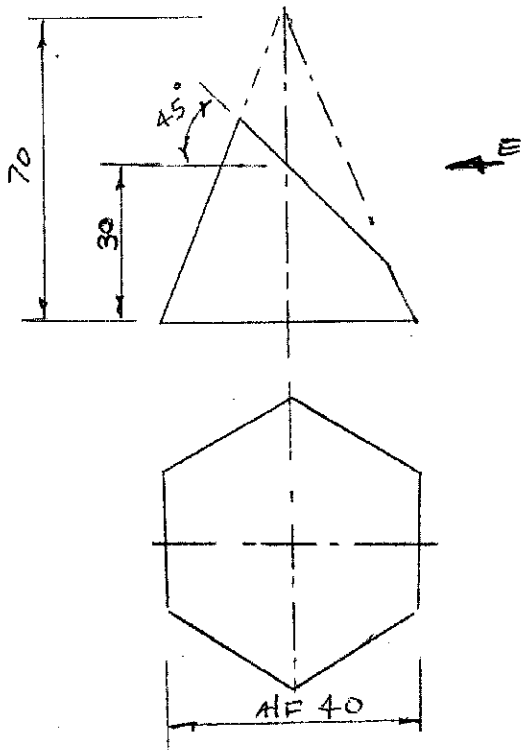

FIG 2

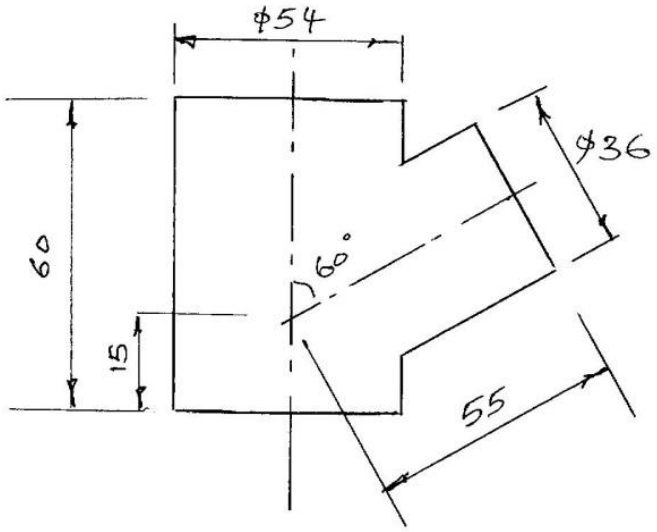

FIG 3

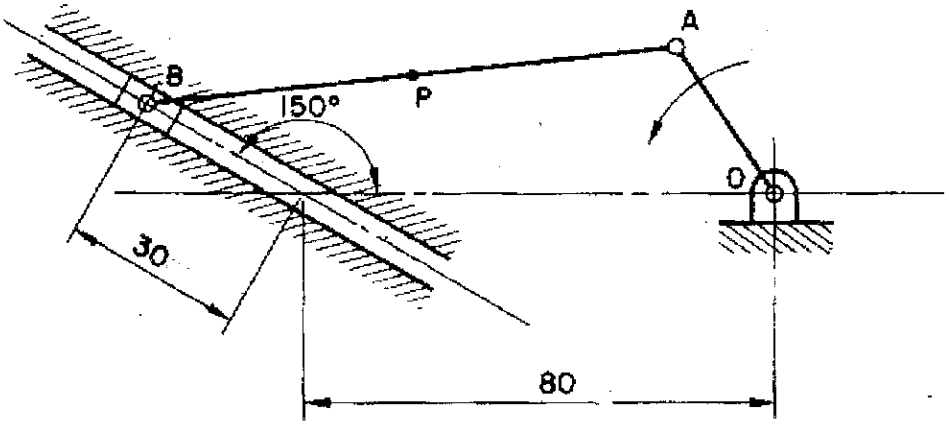

FIG 4