TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology

DEPARTMENT OF MECHANICAL AND AUTOMOTIVE ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MARINE ENGINEERING (DMAE 1)

EMR 2105 TECHNICAL DRAWING I

END OF SEMESTER EXAMINATION

SERIES: DEC 2016 PAPER-B

TIME: 2 HOURS

DATE: 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of FIVE questions. Attempt any THREE.

Do not write on the question paper.

Question One

(a) Construct free hand sketches of the following

i. Fixed frame hacksaw

ii. Long nose pliers

iii. A chisel. (10mks)

(b) Draw an ellipse whose major and minor axis are 52 and 38mm

respectively. Use the rectangular method. (10mks)

Question Two

Fig 1 shows the profile of a machine bracket. Construct the profile to scale and

show the construction work. (20mks

Question Three

Fig 2 shows the elevation of a hexagonal based pyramid sectioned along AB.

Copy the elevation and construct;

a) The plan for X. (5mks)
b) The true shape of AB. (5mks)
c) The surface development of Y. (5mks)
d) The end elevation in the direction of arrow E. (5mks)

Question Four

(a) Construct the profile shown in fig 3 and show your working. (6mks)

(b) Construct the following;
   i. Angles 105◦, 37.5◦, 82.5◦, 285◦, 67.5◦ (6mks)
   ii. A hexagon, a nonagon and a undecagon. Use

the perpendicular bisector method. (8mks)

Question Five

(a) State the meaning of the following abbreviations
   i. CRS
   ii. CHAM
   iii. ASSY
   iv. SPEC (4mks)

(b) List the symbols for

   i. Diameter
   ii. Square
   iii. First and third angle orthographic projections. (3mks)

(c) Draw a line 21mm and divide it into;

   I. THIRTEEN equal parts
   II. The ratio 1:4:5. (8 marks)

(c) Construct a triangle whose sides are 40mm, 50mm and 60mm long respectively. Inscribe and subscribe a circle for the triangle. (5mks)

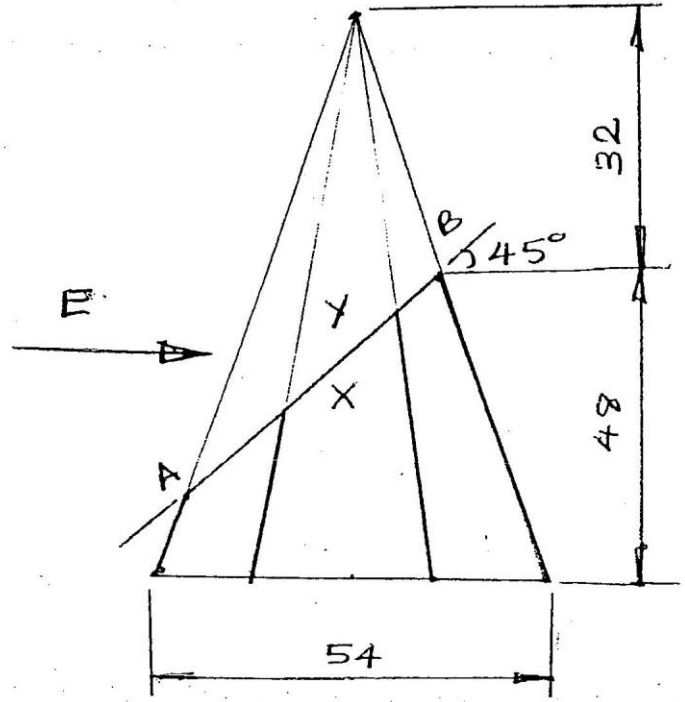
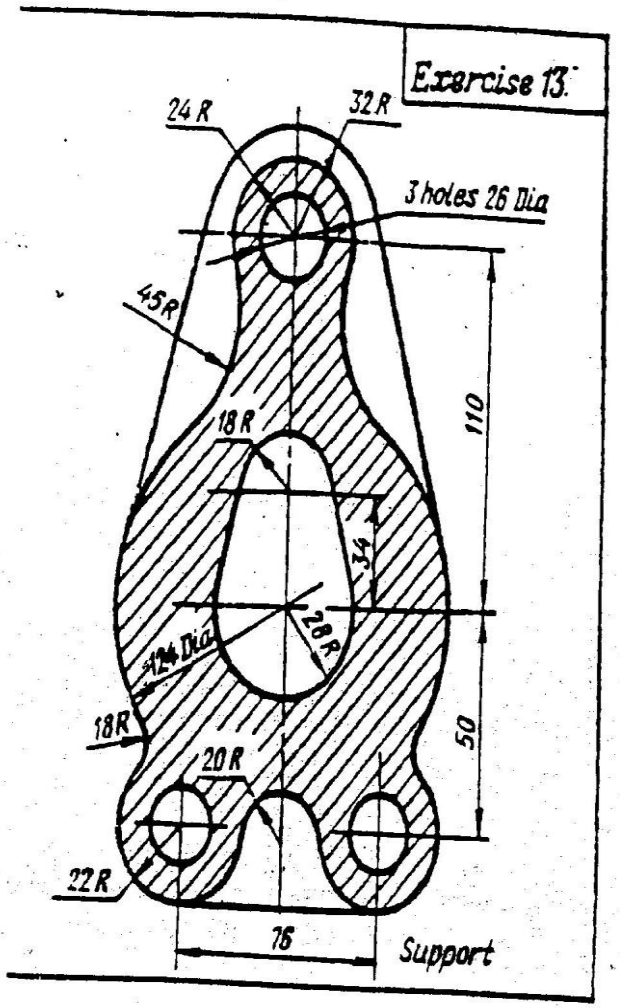

E
A
B
X
Y
45°
32
48
54

Fig 2


Exercise 13.
24 R
32 R
3 holes 26 Dia
45 R
18 R
110
34
28 R
12 Dia
18 R
20 R
50
22 R
76
Support

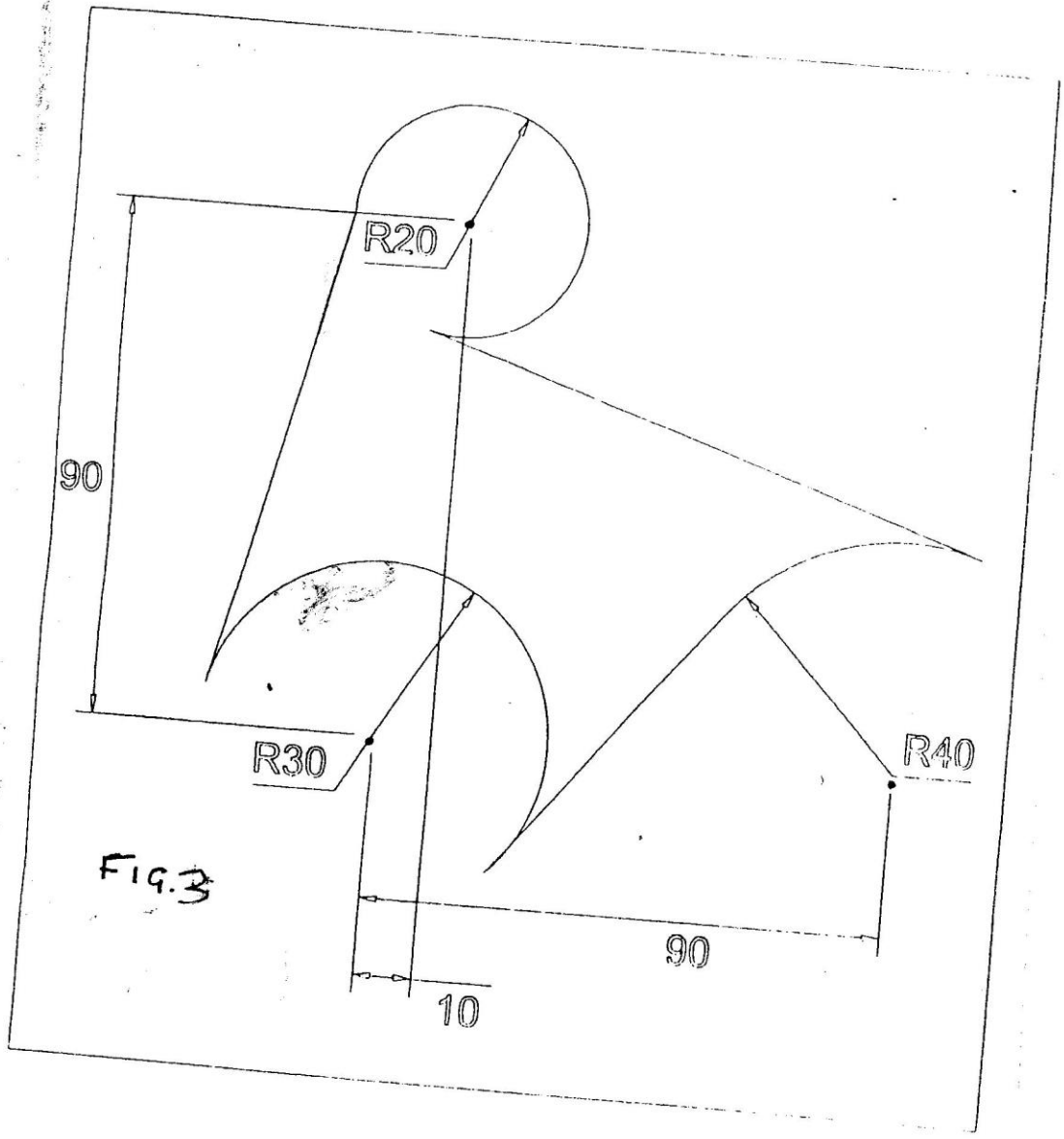


FIG.3