



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2011/2012
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (MECHANICAL ENGINEERING)

EMM 100: ENGINEERING DRAWING 1

DATE: Tuesday 13th December 2011

TIME: 2.00p.m – 4.00p.m

INSTRUCTIONS

1. This paper contains FIVE (5) questions
2. Question ONE (1) is compulsory (30 marks)
3. Choose any other TWO from the remaining four (20 marks each)
4. Marks will be award for correct use of lines, cleanliness and tidiness
5. Make sure you have all your drawing instruments for this exam.
6. Drawing papers and answer books will be provided
7. Do not spend more than ONE hour per question.

Q.1 An isometric view of a cast iron bracket used for a vertical spindle is shown in figure Q. 1. Draw, in Third Angle Orthographic projection, the following:-

- | | |
|-------------------------|----------------|
| (a) The Front Elevation | (8 mks) |
| (b) The End Elevation | (8 mks) |
| (c) The Plan, | (8 mks) |

Fully dimension your drawing **(3 mks)**

Marks will be awarded for the Title Block **(3 mks)**

Q.2 a) A cylinder of 75mm diameter and 45mm height is surmounted by a cube whose sides are of 40mm length. On top of the cube rests a square pyramid of height 30mm with base of 25mm length.

Draw, in isometric projection, the assembly of the three solids. **(10 mks)**

b) Draw an oblique view of the vee-block given in figure Q. 2 (b) in cabinet projection. **(10 mks)**

Q.3. (a) Design and draw a cam profile to fulfill the conditions given in the following data:

Specifications

Shaft diameter 10mm

Base circle diameter 25mm

Performance: 90° uniform velocity to half maximum lift
90° S.H.M. to maximum lift at half rotation
180° Uniform Retardation to maximum fall

Rotation Clockwise

(10 mks)

b) Draw two of spring which is right-hand wound from a strip 18mm by 8mm rectangular section with a pitch of 72mm and an outer diameter of 80 mm. **(10 mks)**

Q 4. The end elevation of a cone and cylinder interpretation is shown in figure Q4. In this diagram two generators of the cone are tangential to the circle of the cylinder.

Draw (a) its three orthographic views showing clearly the lines of intersection in the plan and elevation. **(10 mks)**

(b) the developments of

(i) the cone and

(ii) the cylinder

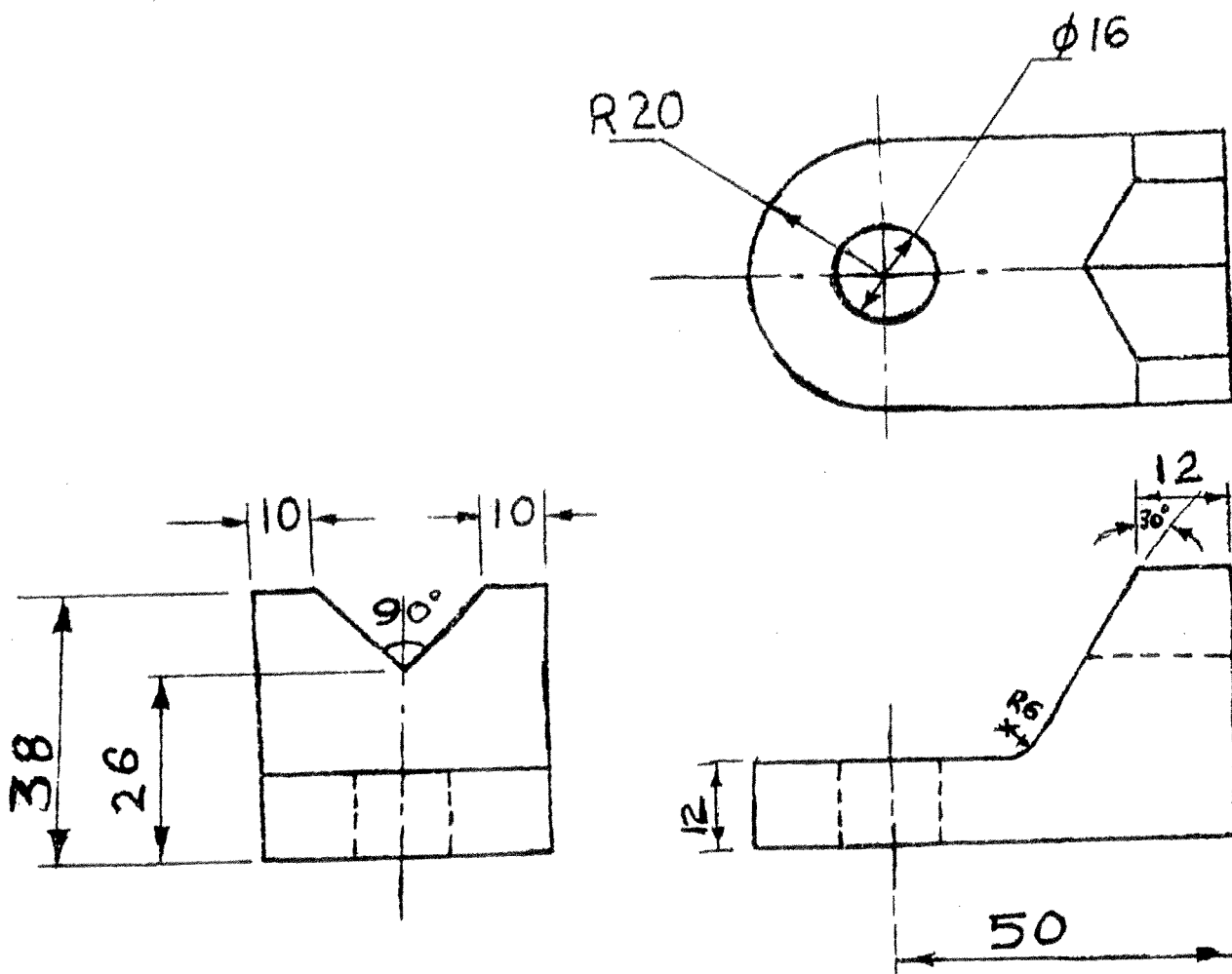
(10 marks)

Q 5. Draw the given elevation of the square pyramid full size, Figure Q5. Project a plan and a first auxiliary plan looking in the direction of arrow S.

Use Third Angle Orthographic Projection

(20 marks)

FIG. Q. 2 (b)



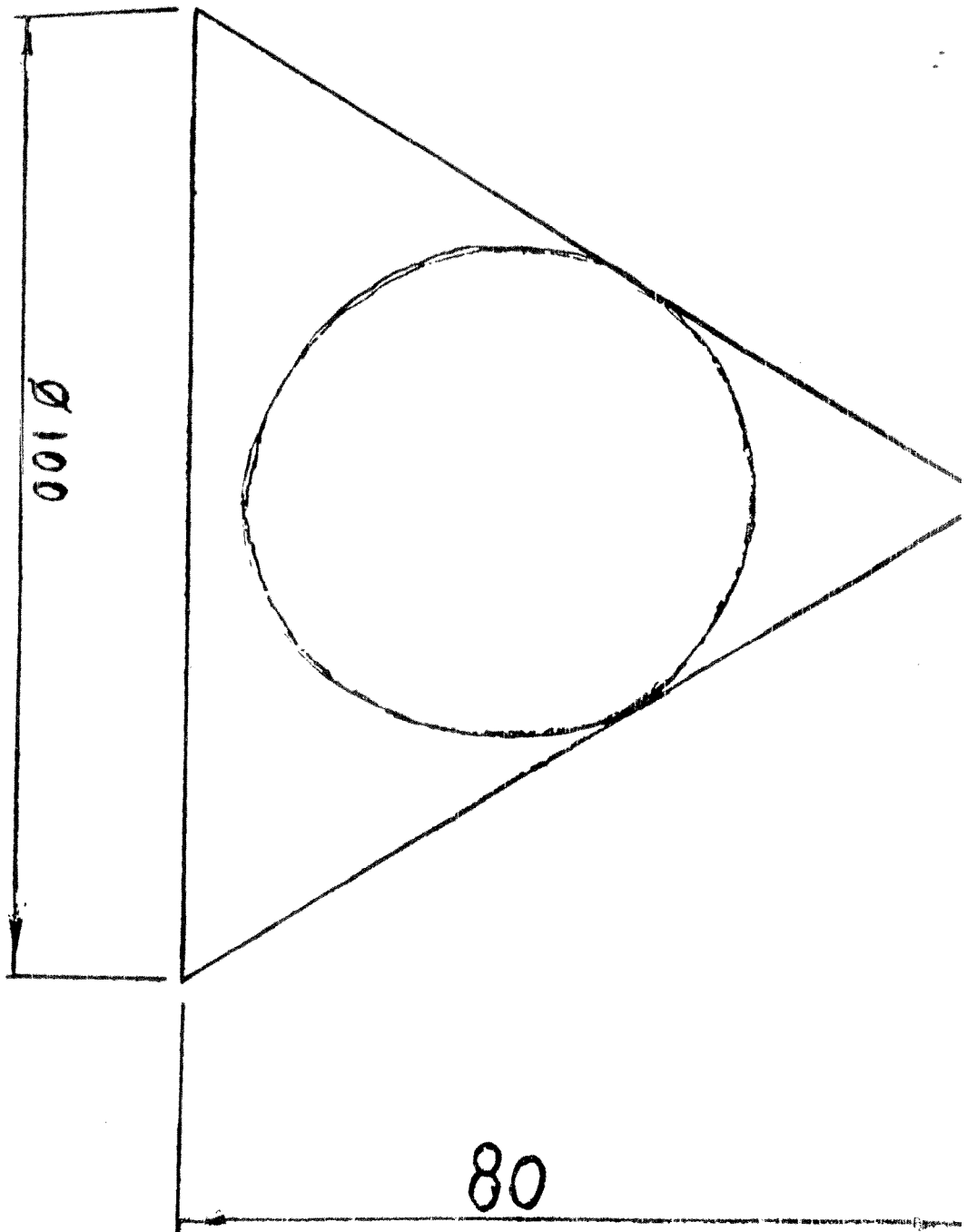


FIG Q 4

CHOOSE ANY SUITABLE SIZE FOR CIRCLE

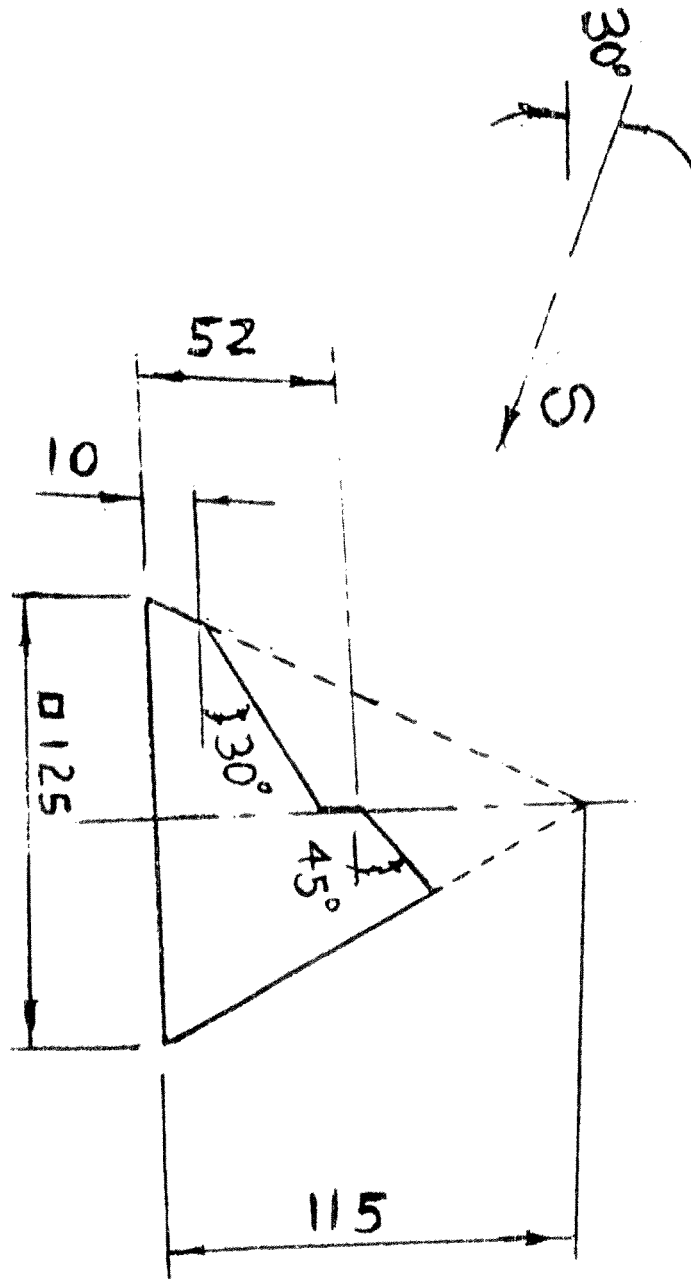


FIG Q 5