

SUKELLEMO EXAMS

DRAWING AND DESIGN

PAPER ONE

449/1

Marking scheme

1(a) List **FOUR** characteristics of an entrepreneur (4mks)

- i) *He should be an innovator*
- ii) *He should be a risk taker*
- iii) *He should be a problem solver*
- iv) *He should have a strong drive towards self-employment.*
- v) *He should an independent thinker*

Award ½ mark for each correct answer 1 x 4 = 4marks

b) List **THREE** types of templates that will be found in a drawing office (3mks)

- i) *Lettering guides*
- ii) *Circle templates*
- iii) *French curves*
- iv) *Elliptical templates*

Award 1 mark for each correct answer 1 x 3 = 3marks

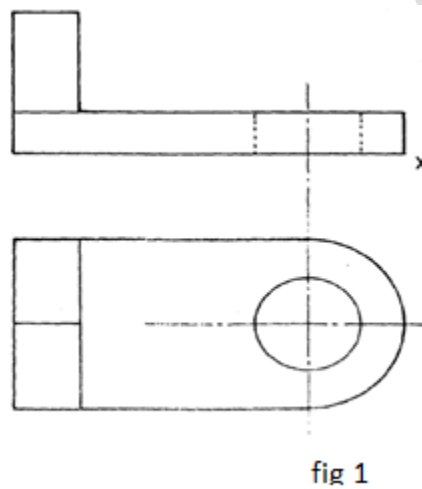
2.(a) State **TWO** advantages of using computer aided design (2mks)

- i) *Computer aided design is faster.*
- ii) *Computer aided design provide a wider range of tools to make modifications*
- iii) *Computer aided design allows the designer to have a complete view of the design.*

Award 1mark for each correct answer

1 x 2 =2marks

Q2.a) Figure 4 shows two views of a block. Sketch the isometric views of the block with X being the lowest point. (5 marks)



3views - 3marks

Angle of projection-1 mark.

Circle =1

Total – 5marks.

b) Explain the meaning of the following terms used in design (4mks)

i) Aesthetics

These are factors to do with the way the design appears to a person. ie it attractiveness

ii) Ergonomics

The relation between a design and the environment

iii) Thumbnail sketches

Are the initial sketches that the designer makes of the ideas he has of the design. From these he picks the best solution to the design problem

iv) Prototype

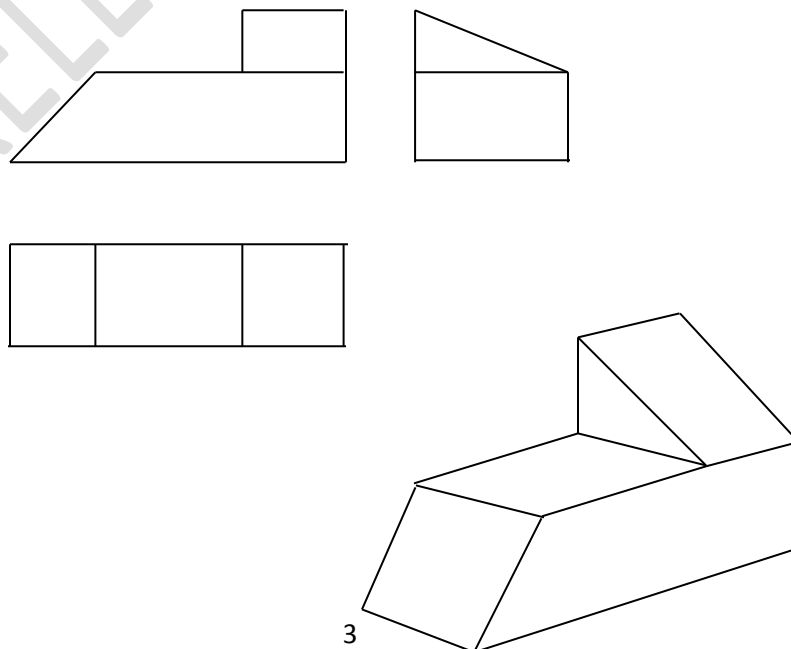
The first complete project that comes from the design process. The design can thereafter move to full production.

Award 1mark for each correct answer

1 x 4 = 4marks

4. Draw the figure 1 below in isometric marking point X nearest to you.

(5 marks)



3views - 3marks

Angle of projection-1 mark.

Circle =1

x

Total – 5marks.

5. List down the process of making a new product. (3marks)

6. Figure 2 shows two orthographic view of shaped object.

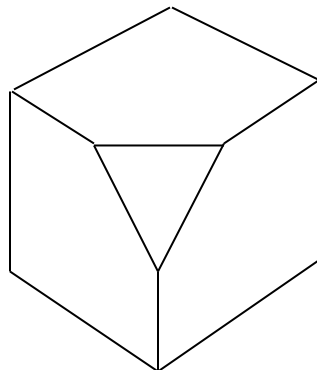


Fig2

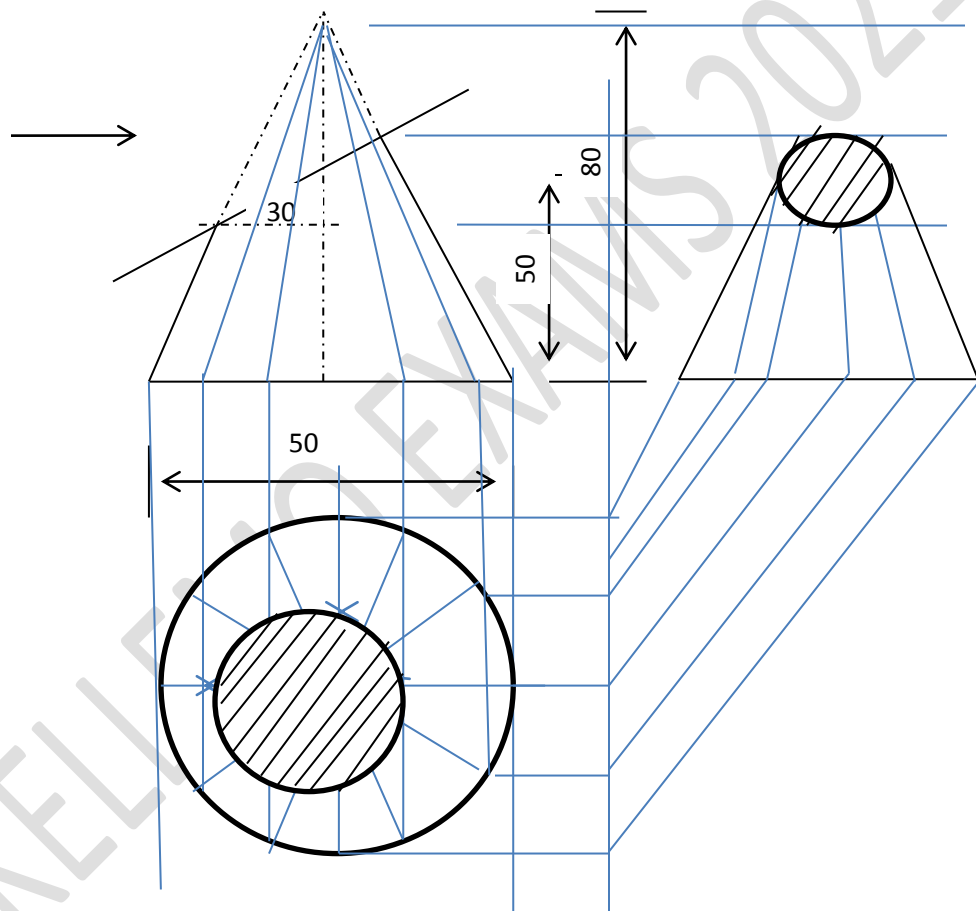
3views - 3marks

Angle of projection-1 mark.

Total – 4marks.



7. Figure 3 shows a right cone truncated as shown. Draw the end elevation of the cone in the direction of arrow X. (6mks)



Coping- 1

Completing plan-1

Line of projection-2

End elev.-2

total= 6

8. List three types of templates found in a drawing office.

(3marks)

i) *Lettering guides*

ii) Circle templates

iii) French curves

iv) Elliptical templates

(award 1 marks for each correct answer)

9. Figure 4 shows a diagonal scale of 1:10 to measure length of 1.0m with the accuracy of 0.005m give the following readings.

i. A---625

ii. B---250

iii. C --750

(3 marks)

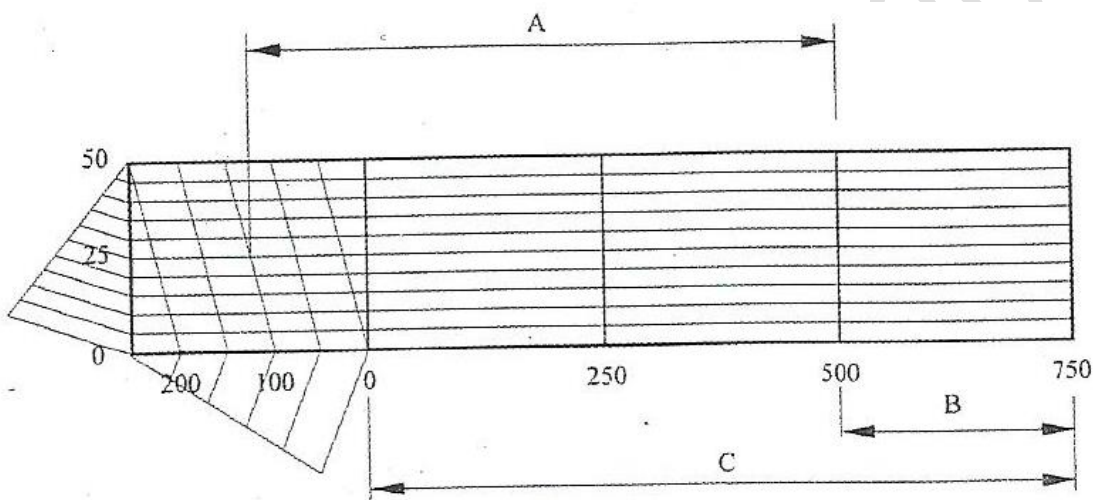
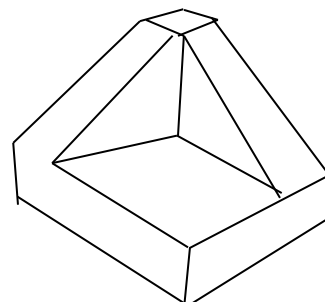
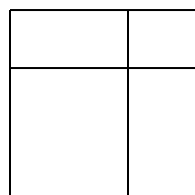
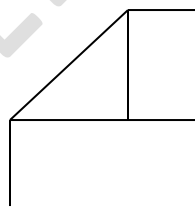


Fig4

10. Show the figure 5 below in oblique drawing.

(5 marks)

Fig5



3 views-3x1=3

Collect projection.=1

4marks

11.

Correct assembly of the parts.....2^{1/2} marks

a)sectional front elevation

Correct section in direction of B-B.....2 marks

Construction line.....1 marks

Hatching lines.....3 marks

Total-----6 marks

a) End elevation.

Correct end elevation.....2 marks

Projection lines from the front.....1 mark

Centre lines.....1 mark

Bolt and nut construction.....2 marks

Hidden lines.....1 mark

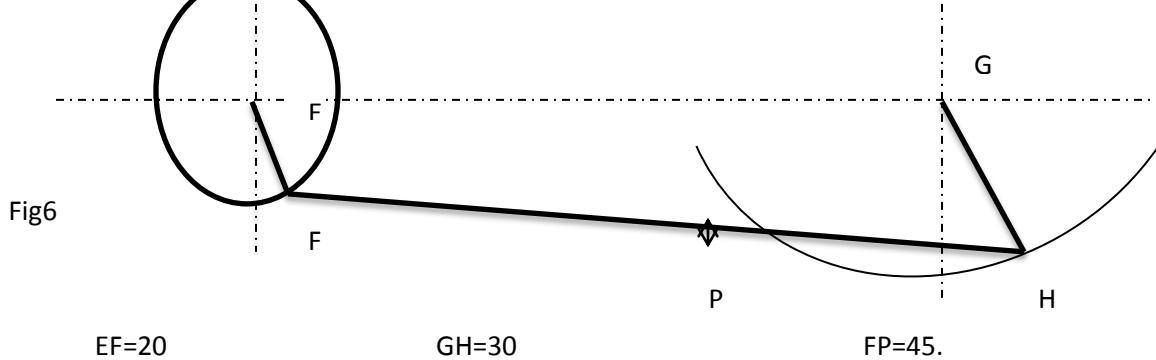
Total7marks

Leading lines.....3 marks

Neatness.....1^{1/2} marks.....total.-- 20marks

12. In the mechanism shown in figure6 , the crank EF rotates about centre E while GH oscillates about G.

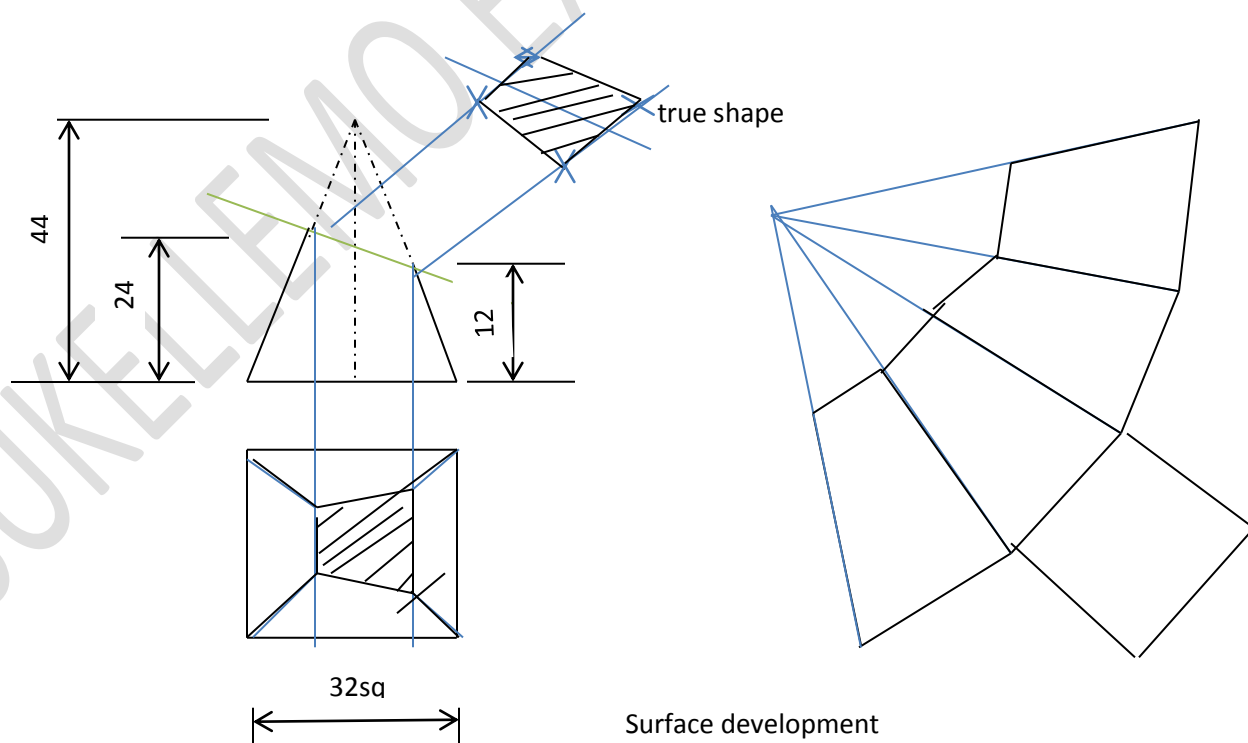
Plot the locus of P for one complete revolution of EF.



- ✓ Coping the mechanism.....5marks
- ✓ Drawing the circle.....2 marks
- ✓ Dividing the circle into number of equal parts.....2 marks
- ✓ Drawing FH projections.....3 marks
- ✓ Tracing point P in a curve.....1 mark
- ✓ Joining the points to form a curve2 marks
- ✓ Total===15marks

13. The figure7 shows front elevation and incomplete plan of a square based pyramid; (15 marks)

- a) Complete the plan,
- b) True shape of the cut surface,
- c) Development of the square pyramid



Coping the pyramid..... 2 marks

Completing the plan.....4 marks

True shape of cut surface.....4 marks

Surface development.....4 marks

Construction lines..... 3 marks

total 15 marks

14. Figure 8 shown below is a first angle projection of an object. Draw the isometric view of the object.

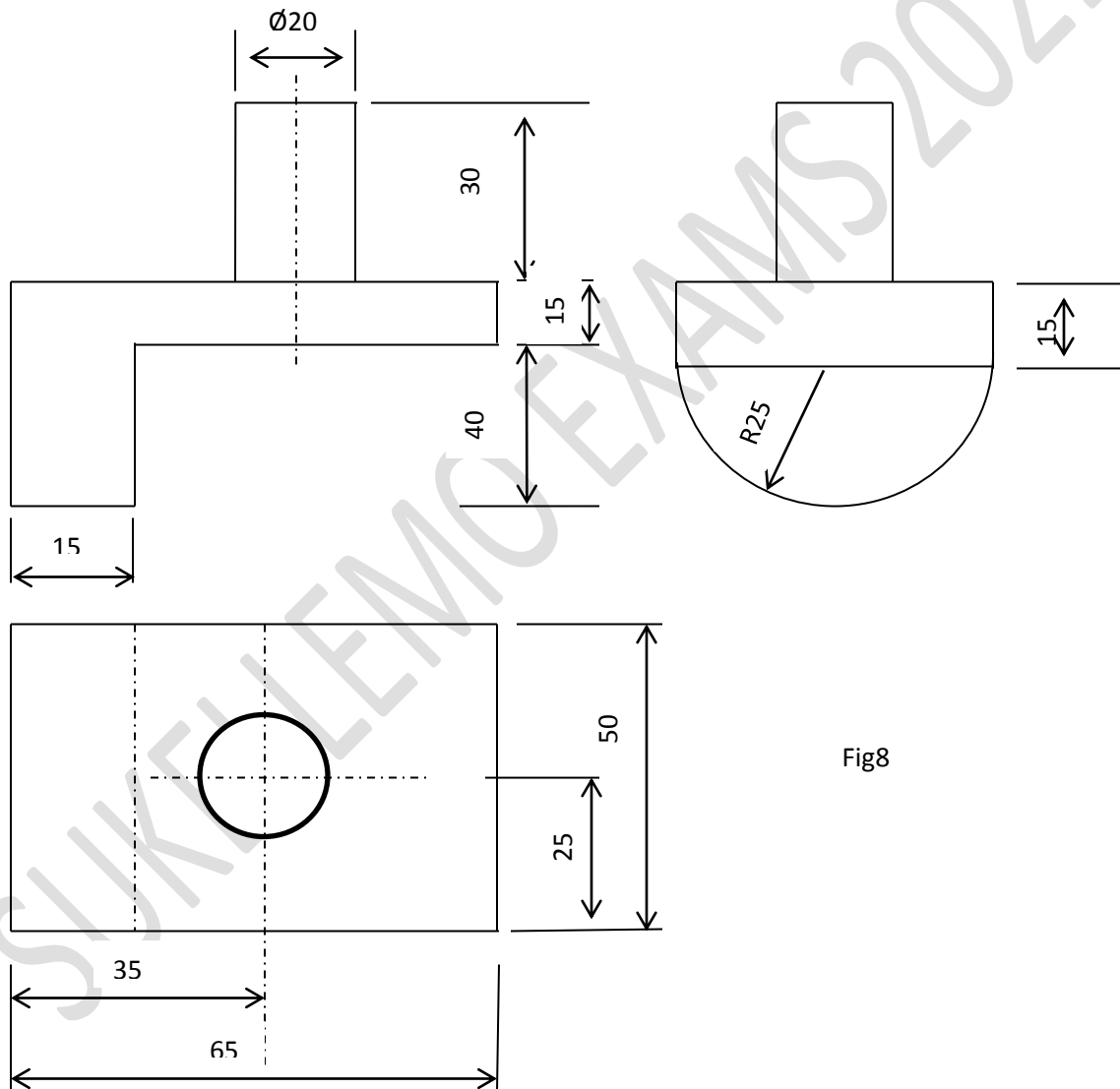


Fig8

Draw the isometric view of the object.

3views – 3x4=12marks

Angle of projection-2 marks.

Smooth curve-1

Total – 4marks.

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