CMR INSTITUTE OF TECHNOLOGY

ROLL NO.

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CMR INSTITUTE OF TECHNOLOGY, BENGALURU.
ACCREDITED WITH A+ GRADE BY NAAC

Internal Assesment Test – 1

Sub: Engineering Visualization					Code: 21EV15
Date: 25/01/2022	Duration: 90 mins	Max Marks: 50	Sem: 1	Branch (sections): A, B, C, D, E, F & G	

Answer one full question from each part

PART A		Marks	OBE	
			CO	RBT
1 (a)	Draw the three principal views of a point P lying 65 mm above HP, 70 mm in front of VP and 50 mm in front of the right plane.	[10]	CO1	L2
(b)	A line AB, 65 mm long, has its end A 20 mm above HP and 25 mm in front of VP. The end B is 40 mm above HP and 65 mm in front of VP. Draw the projections of AB and show its inclinations with HP and VP.	[15]	CO1	L2
2 (a)	A point P is on HP and 30mm in front VP. Another point Q is on VP and 40 mm above Hp. The distance between their projectors parallel to XY line is 50mm. Find the distance between the front and top views of P and Q respectively.	[10]	CO1	L2
(b)	The top view pq of a straight line is 70 mm and makes an angle of 60° with the XY line. The end Q is 10 mm in front of VP and 30 mm above the HP. The difference between the distances of P and Q above the HP is 45 mm. Draw the projections. Determine the true length and true inclinations with HP and VP.	[15]	CO1	L2

PART B

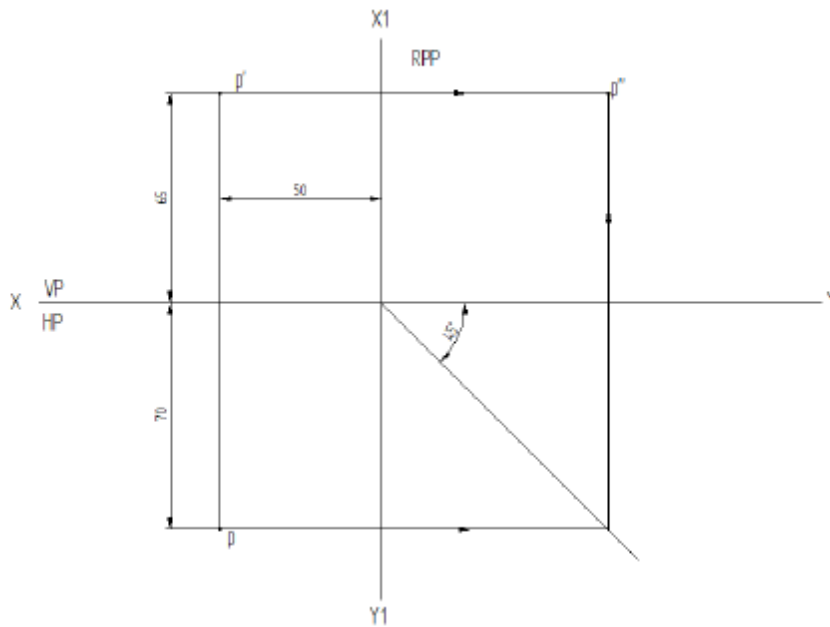|		Marks	OBE	
3	A pentagonal lamina of sides 30 mm is having a side both on HP and VP. The surface of the lamina is inclined at an angle of 60° to HP. Draw top and front views of the lamina.	[25]	CO2	L2
4	A hexagonal lamina of sides 25 mm rests on one of its sides on HP. The lamina makes 45º to HP and the side on which it rests makes 30º to VP. Draw the projections.	[25]	CO2	L2

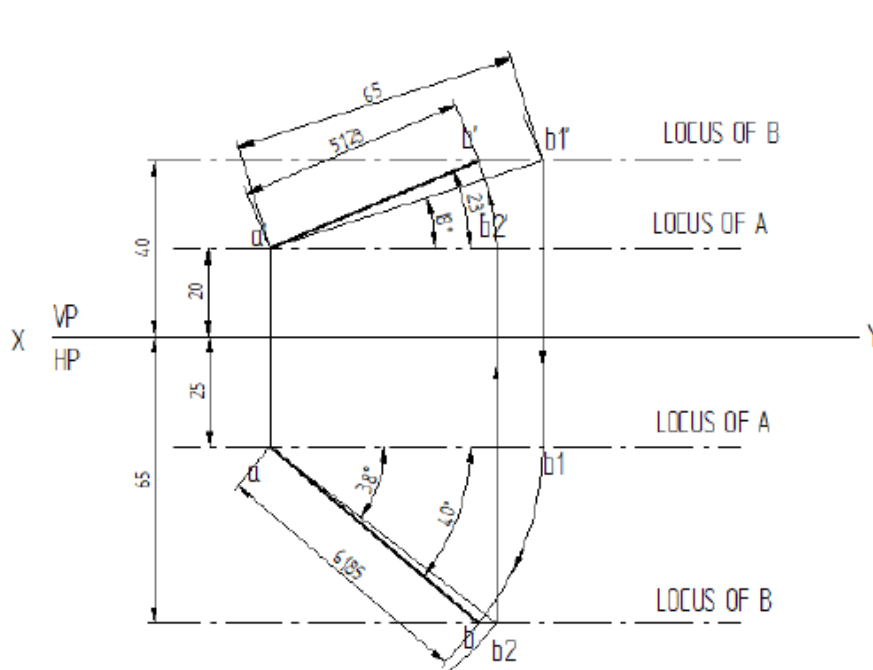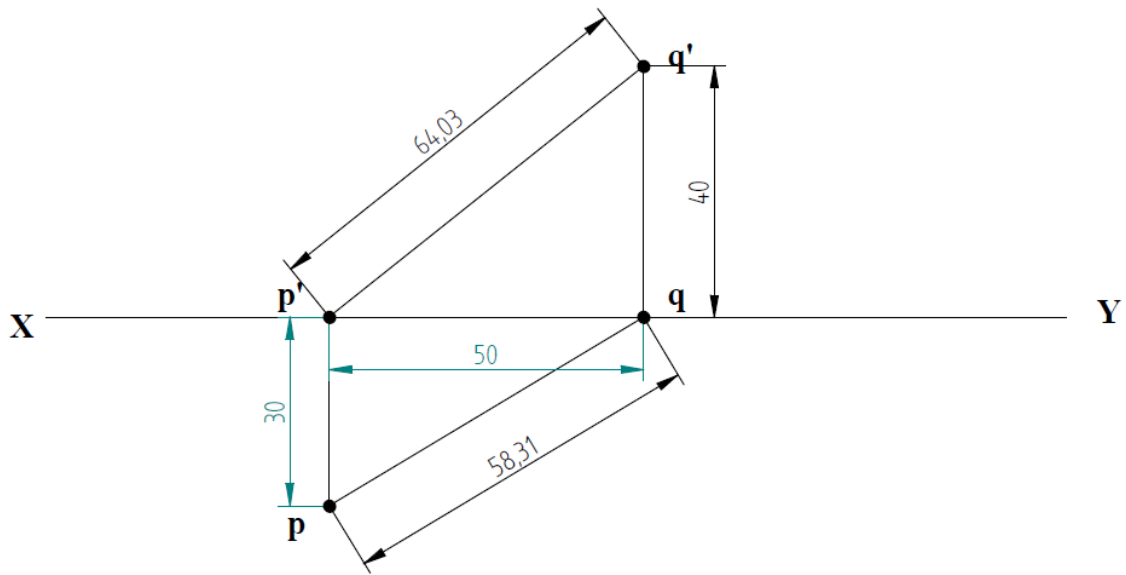CI   CCI   HOD

Solutions:

PART A

1a.

1b.

a'b' = 51.23 mm
ab = 61.85 mm
θ = 18°
ϕ = 38°
α = 23°
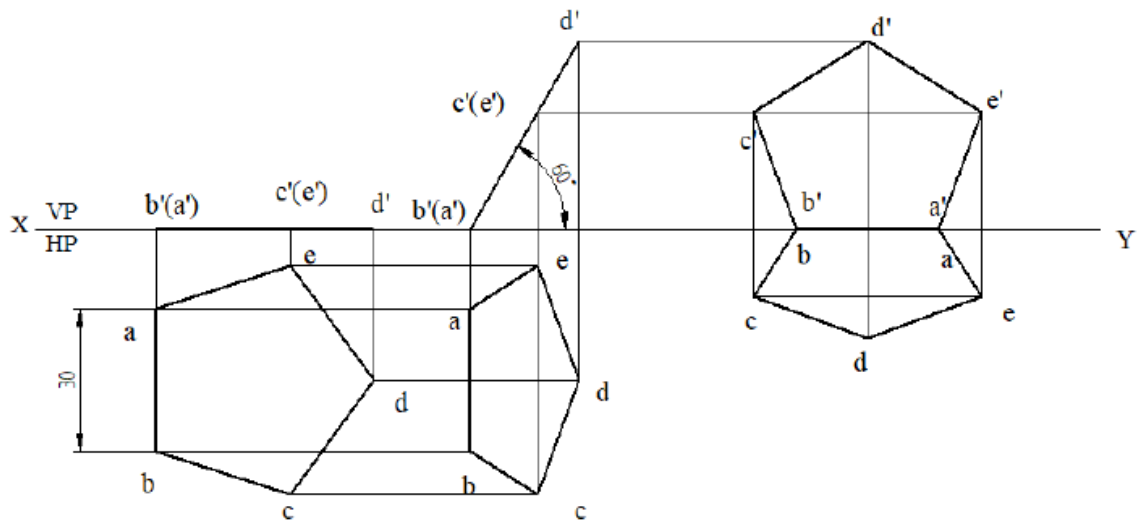β = 40°

2a

X ——————————— Y

p' q

64,03

40

50

30

58,31

p

The distance between top views of P & Q is **58.31mm**
The distance between front views of P & Q is **64.03mm**

2b

p'   p1'   Locus of p'

45

33°

Locus of q'

q'

30

VP

X ——————————— Y

HP 10

Locus of q

q

47°

60°

70

83,22

p   p1   Locus of p

PQ = 83.22

θ = 33°

φ = 47°

Locus of p

PART B

3

4