

The Open University of Sri Lanka
Faculty of Engineering Technology



Study Programme : Bachelor of Science (Honours) in Engineering
Name of the Examination : Final Examination
Course Code and Title : **DMX3305 – Introduction to Engineering Design Graphics**
Academic Year : 2023/24
Date : February 28, 2025
Time : 09.30 – 12.30
Duration : 3 hours

Reg. No

General Instructions

1. Write down your registration number in the provided space
2. Read all instructions carefully before answering the questions.
3. The paper consists of two parts with a total of 10 questions. **Part-A** is based on manual drafting techniques (5 questions) and **Part-B** is based on CAD (5 questions).
4. Answer **all** questions within the space provided.
5. Drawing Instruments can be used to answer the **Part-A**.

	Part -1					Part - 2					
Question	1	2	3	4	5	6	7	8	9	10	Total
Marks											

Part-A

Q1-a.

Construct the perpendicular line from point **P** to line **AB**.

5-marks

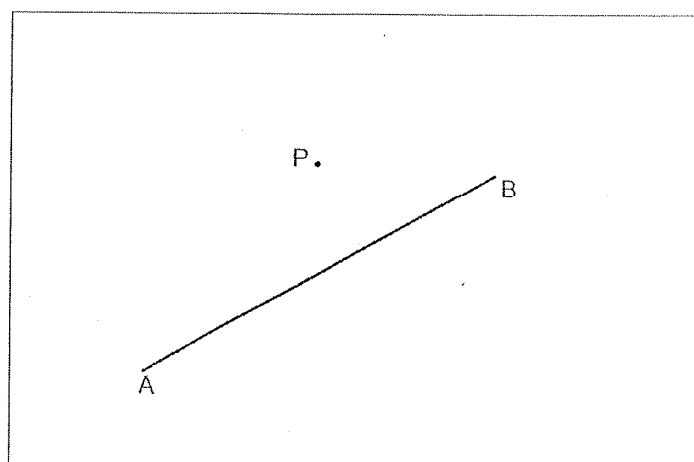


Figure Q1-a

Q1-b.

Construct the parabola enclosed within the given rectangle ABCD in **Figure-Q1-b**.

5-marks

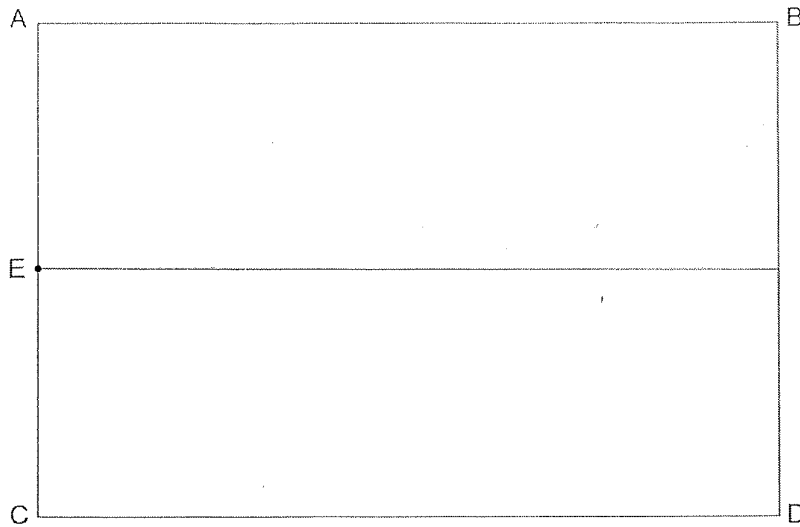


Figure-Q1-b

Q1-c.

Draw the circle with 30mm radius that is externally tangent to the given circle C and the line PQ in **Figure-Q1-c**.

5-marks

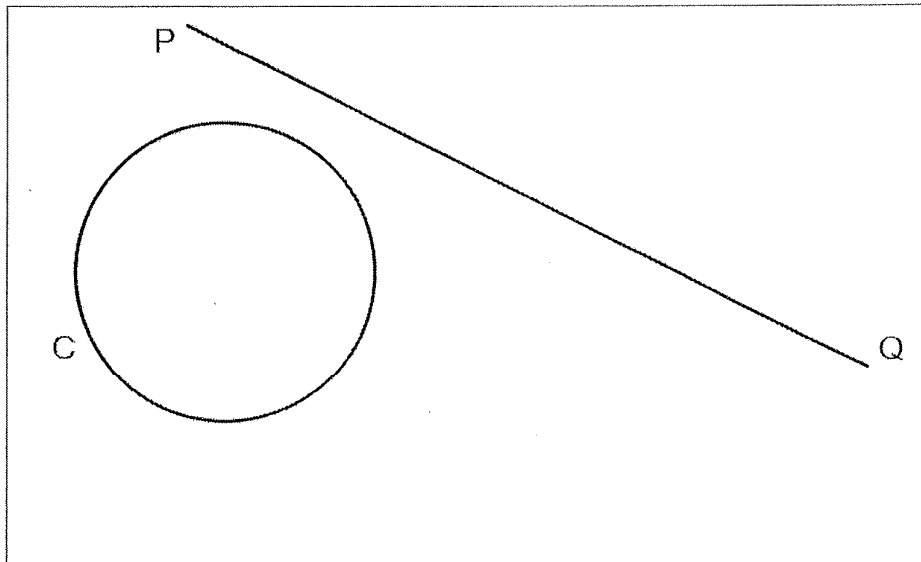


Figure-Q1-c

Q2-a.

15-marks

Figure-Q2-a, shows a pictorial view of solid object. Draw the following orthographic views to a scale of full size in the first angle projection within the space provided.

- i. Front Elevation looking in the direction of arrow "A"
- ii. End Elevation looking in the direction of arrow "B"
- iii. Plan looking in the direction of arrow "C"

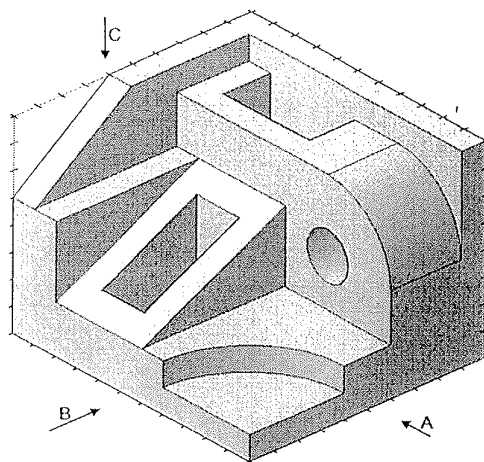
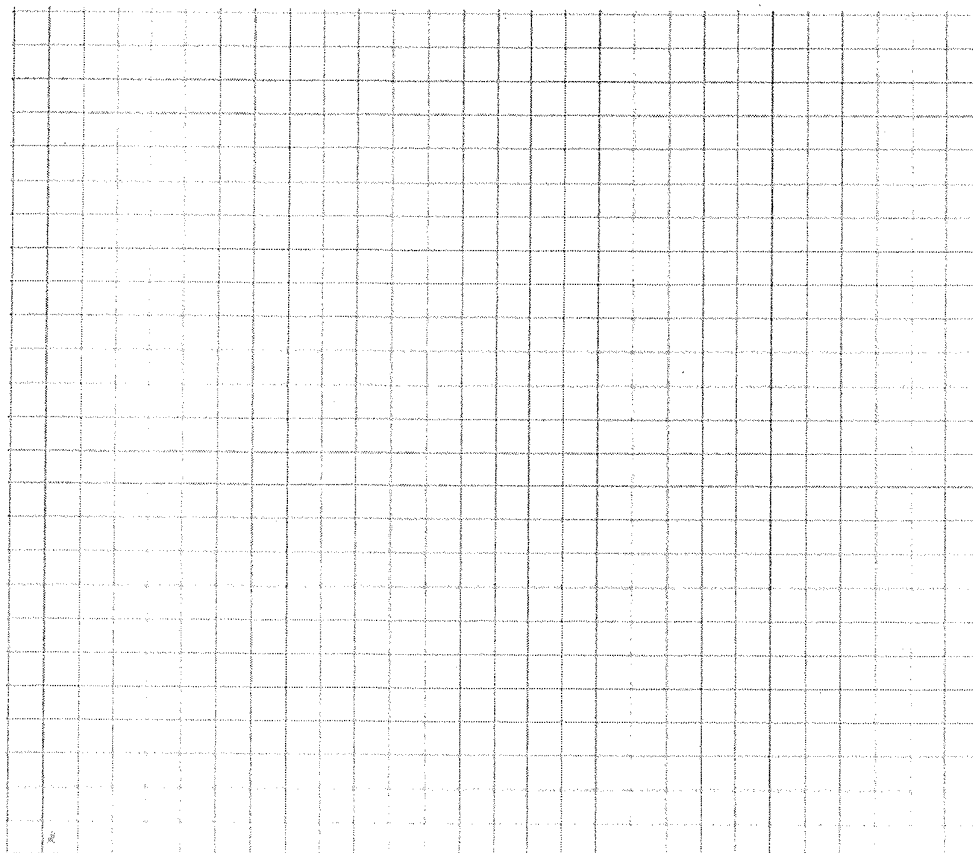


Figure-Q2-a



Q2-b.

5-marks

Figure-Q2-b describes an object in first angle projection. Complete the Sectional Front Elevation on X-X.

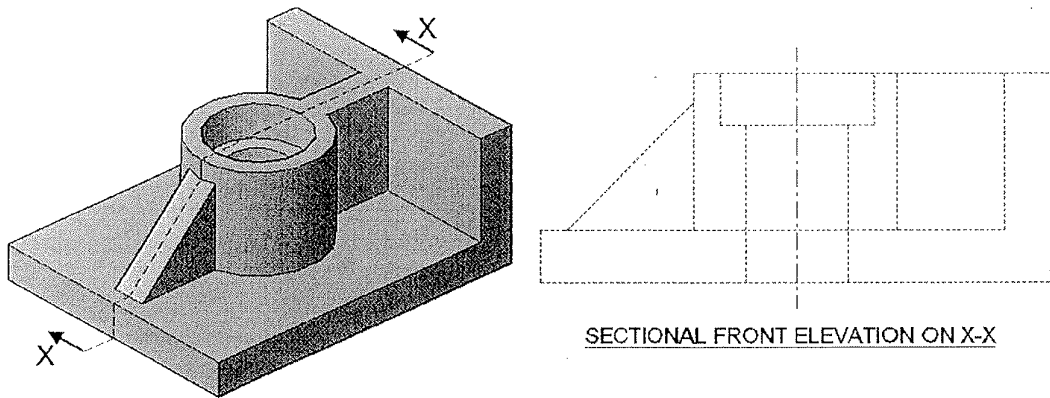


Figure-Q2-b

Q3.

5-marks

Draw the **involute** of the given hexogen starting from point A in Figure-Q3.

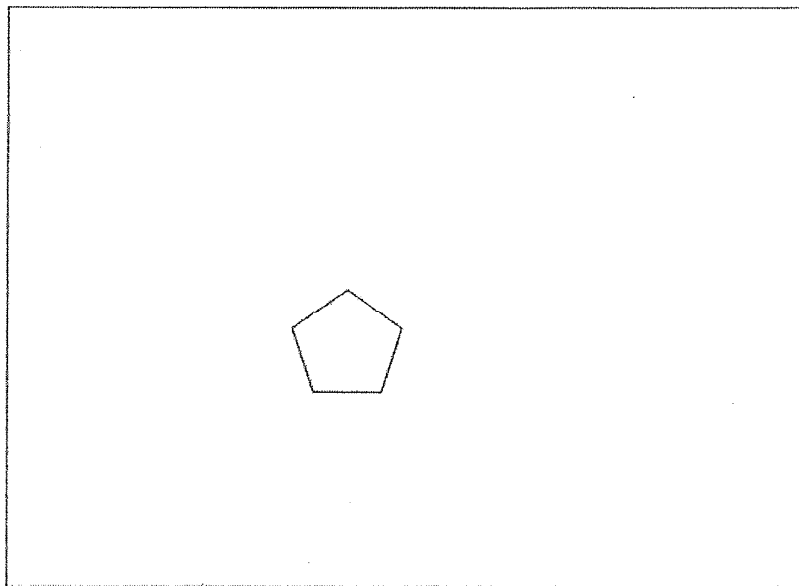


Figure-Q3

Q4.

10-marks

Construct the isometric view of the object using the given orthographic views in Figure-Q4.

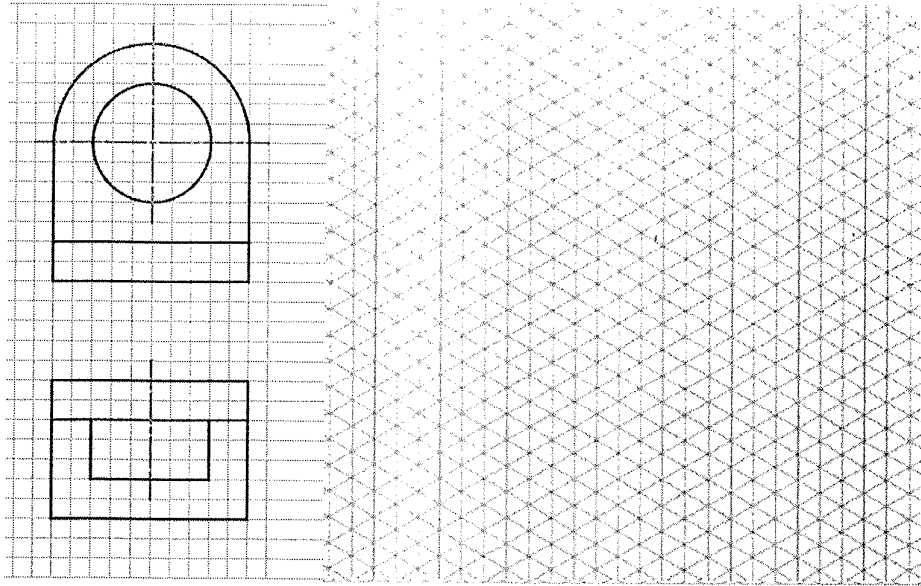


Figure-Q4

Q5.

10-marks

Complete the development of the truncated cylinder shown in the Figure Q5.

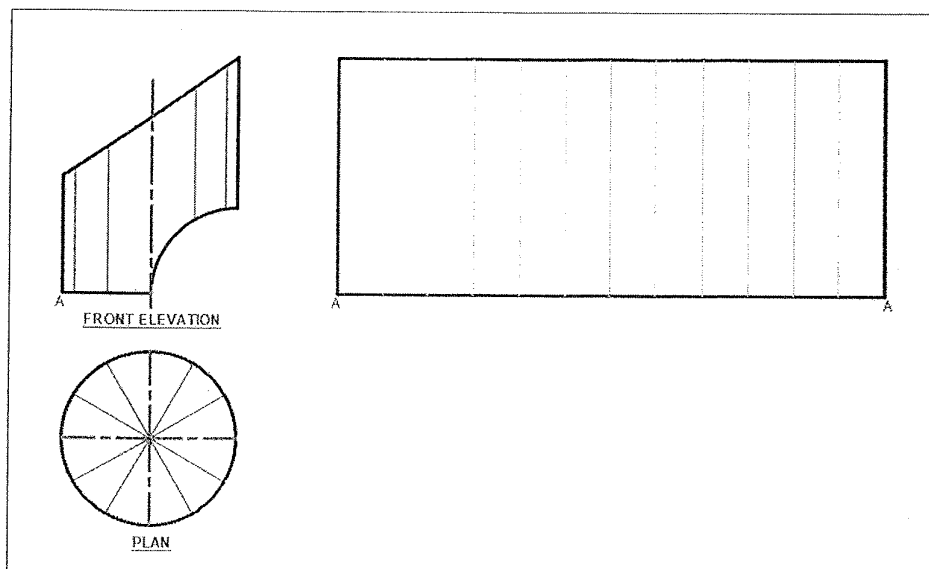
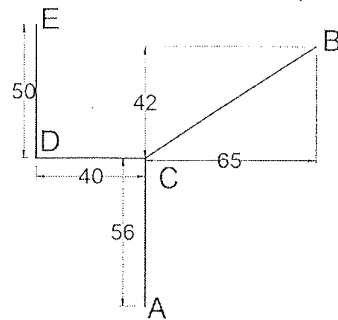


Figure Q5

Part BComputer Aided Drafting using AutoCAD**Figure-Q6**

Question Q6-a and Q6-b are based on the Figure-Q6

Q6-a.

3-marks

What are the absolute coordinates of point **E** and **D**? E (.....), D (.....)

Q6-b.

3-marks

What are the relative coordinates of point **B** and **E** with respect to point **C**?

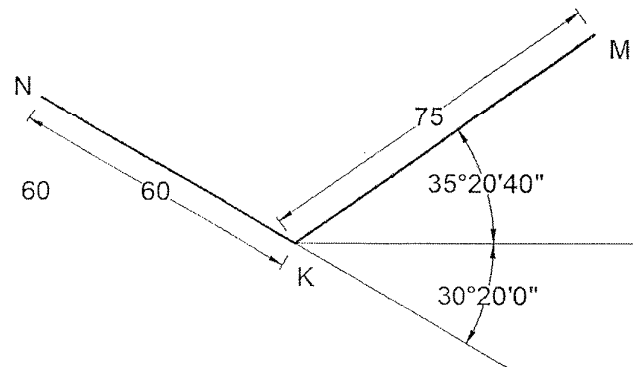
B (.....), E (.....)

Q6-c.

What are the relative-polar coordinates of point **M** and **N** with respect to point **K** in Figure Q6-c?

3-marks

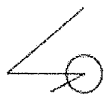
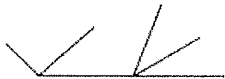
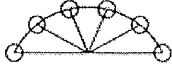
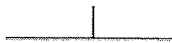
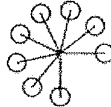
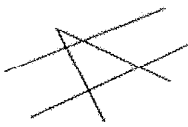
M (.....), N (.....)

**Figure Q6-c**

Q7.

Write down the AutoCAD command used to obtain the *required figure* from the *given* figure.

21-marks

Given Figure	Command	Required Figure
	-----	
	-----	
	-----	
	-----	
	-----	
	-----	
	-----	

Q8.

What is the layer control operation which allows you to make a layer **visible and not editable**?

3-marks

Q9.

What are the **object snaps** that should be used to draw the line LM as shown in **Figure-Q9**, where L is an arbitrary point on PQ line ?

2-marks

L:

M:

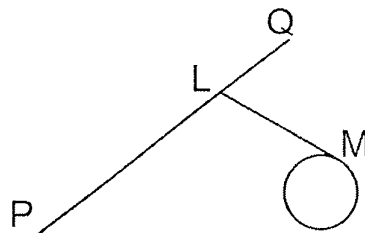


Figure-Q9

Q10.

What is the **option of the circle command** used to draw the circle C, as shown in **Figure-Q10**?

5-marks

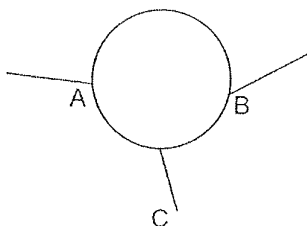


Figure-Q10

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