



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 : 2022/23
Date : February 25, 2024
Time : 09.30 – 12.30
Duration : 3 hours

Reg. No

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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 15 questions. **Part-A** is based on manual drafting techniques (8 questions) and **Part-B** is based on CAD (7 questions).
4. Answer **all** questions within the space provided.
5. Drawing Instruments can be used to answer the **Part-A**.

PART-A	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	TOTAL
MARKS									

PART-B	Q1	Q2	Q3	Q4	Q5	Q6	Q7	TOTAL
MARKS								

Part-A

Q1. Divide line AB into 6 numbers of equal parts.

5-marks

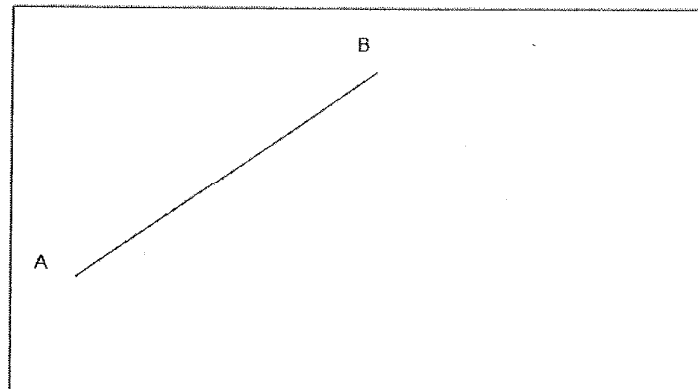


Figure Q1

Q2. Construct the Ellipse enclosed within the given PQRS rectangle in **Figure-Q2**.

5-marks

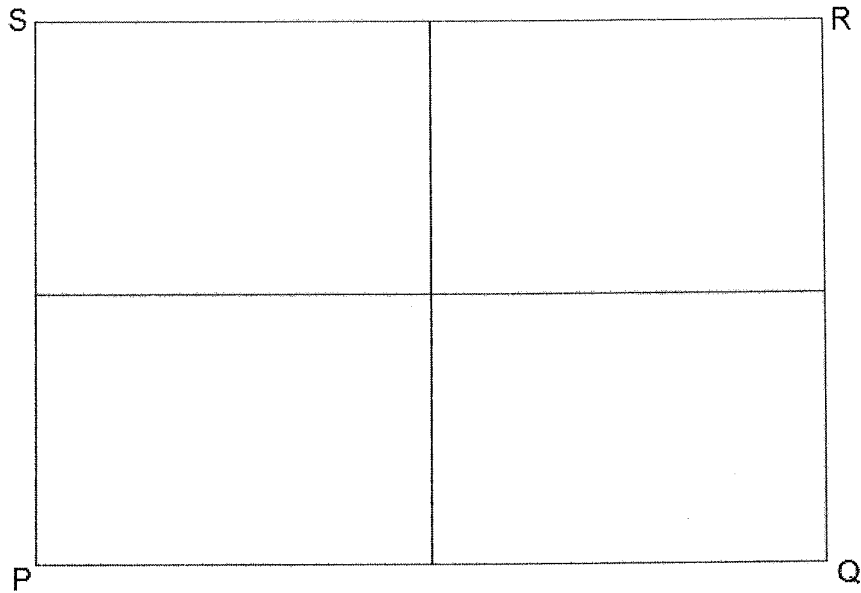


Figure-Q2

Q3. Draw the circle with **25mm** radius that is externally tangent to the given two circles C1 and C2 in **Figure-Q3**.

5-marks

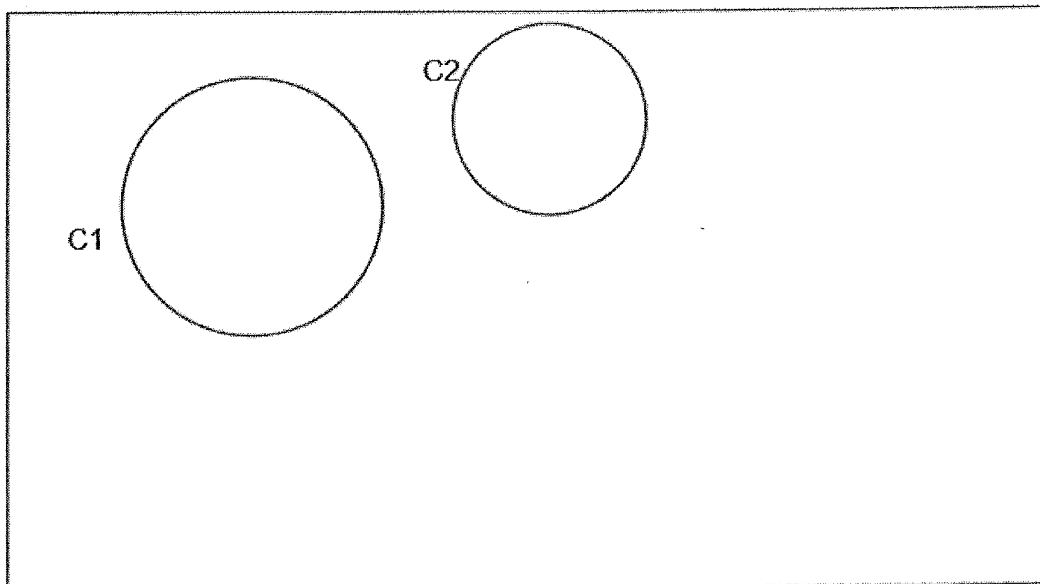


Figure-Q3

Q4. Figure-Q4, 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.

20-marks

- 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"

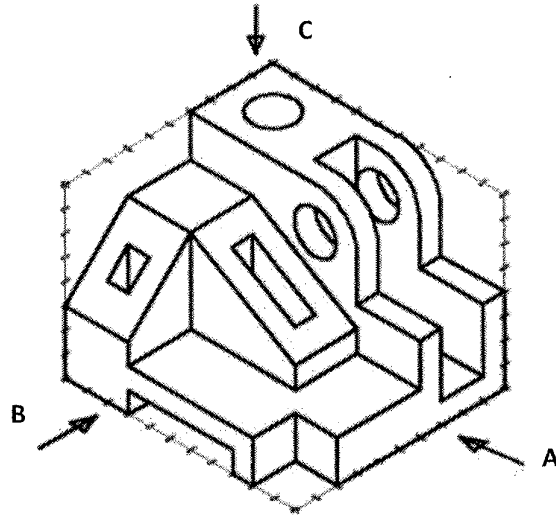
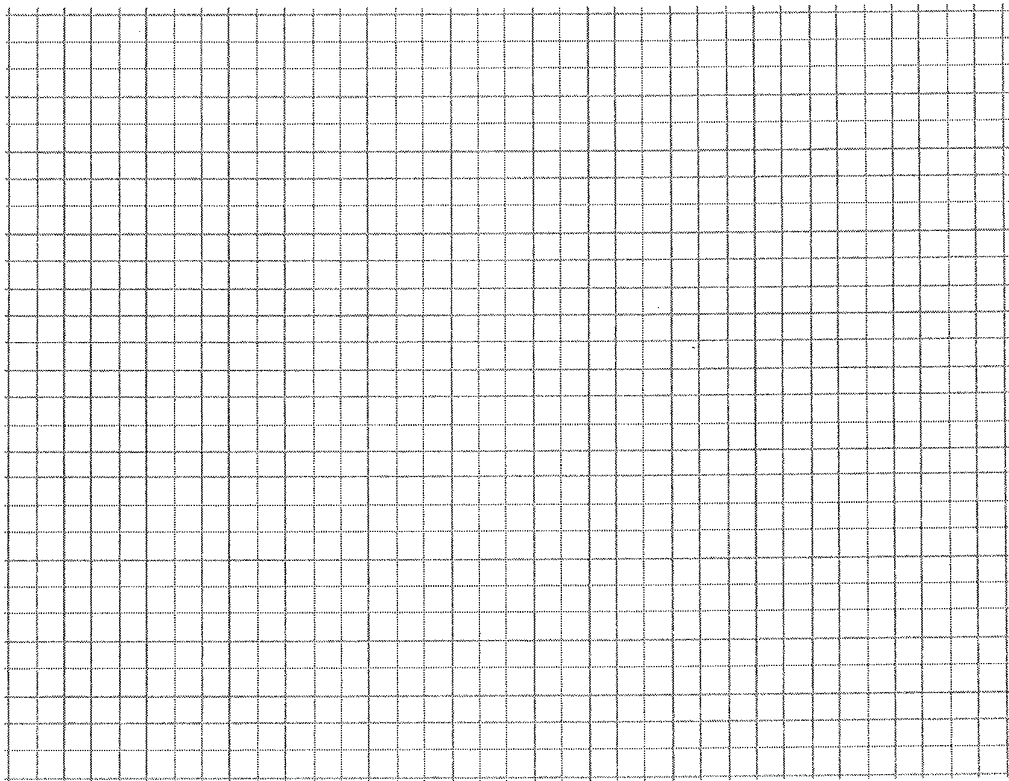


Figure-Q4



Q5. Figure-Q5 describes an object in first angle projection. Complete the Sectional Front Elevation on X-X.

5-marks

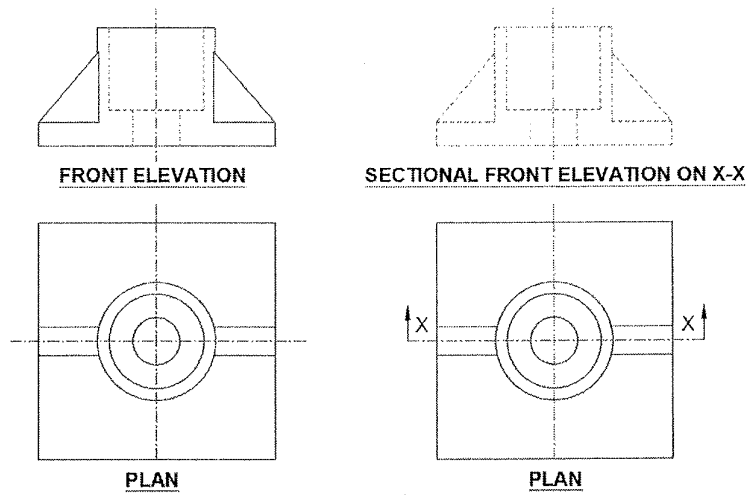


Figure-Q5

Q6. Draw the **involute** of the given hexagon starting from point A in **Figure-Q6**.

5-marks

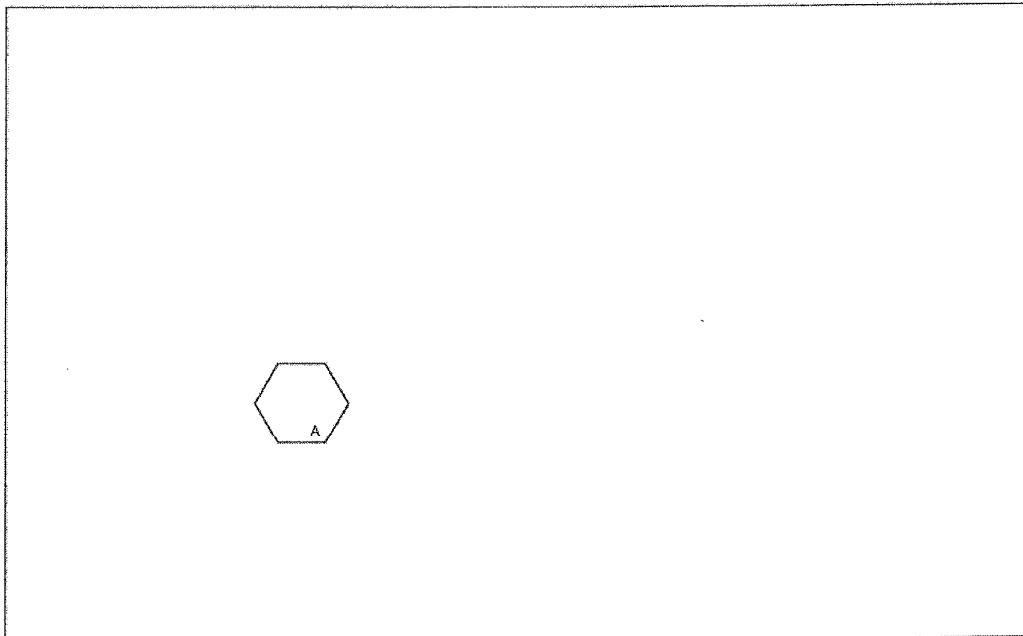


Figure-Q6

Q7. Construct the isometric view of the object using the given orthographic views.

10-marks

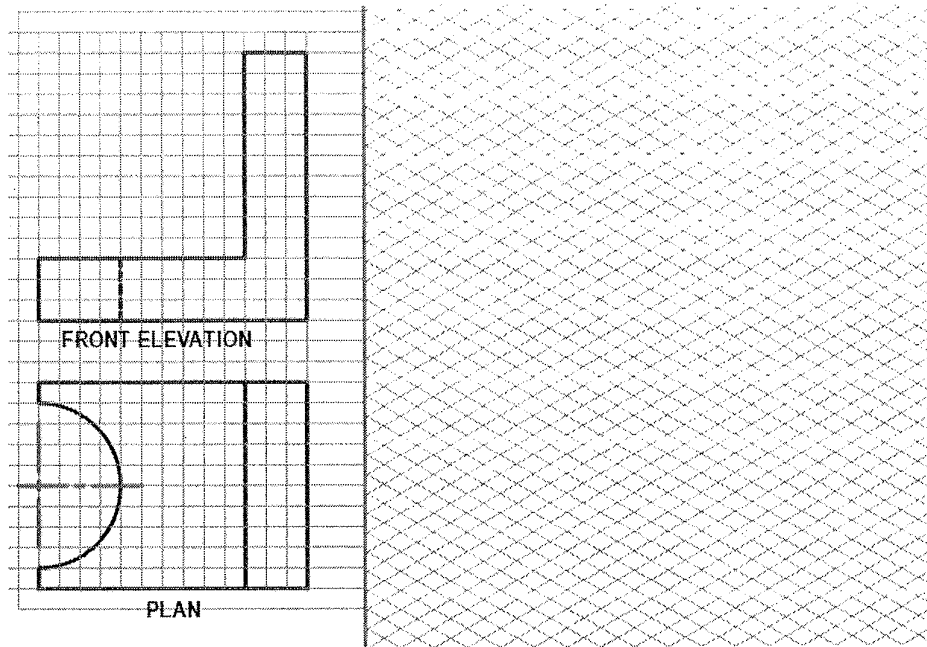


Figure-Q7

Q8. Complete the development of the truncated cylinder shown in the Figure Q8.

5-marks

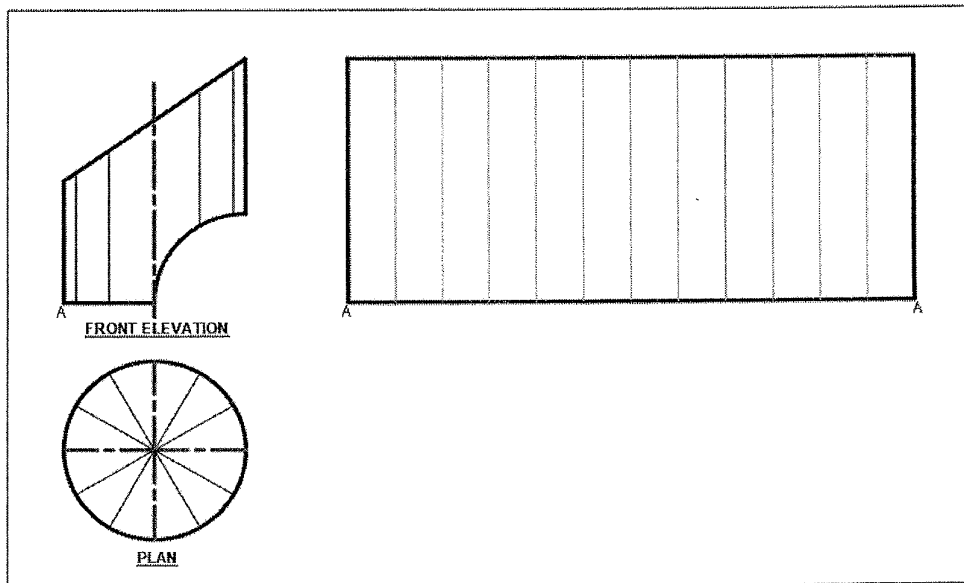


Figure Q8

Part B

Computer Aided Drafting using AutoCAD

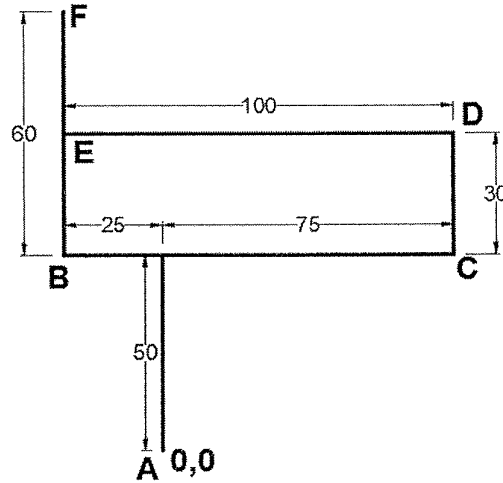


Figure-Q9

Question Q9 & Q10 are based on the Figure-Q9

Q9. What are the absolute coordinates of point **E** and **D**? E (.....) , D (.....)

4-marks

Q10. What are the relative coordinates of point **F** and **B** with respect to point **D**?

4-marks

F (.....) , B (.....)

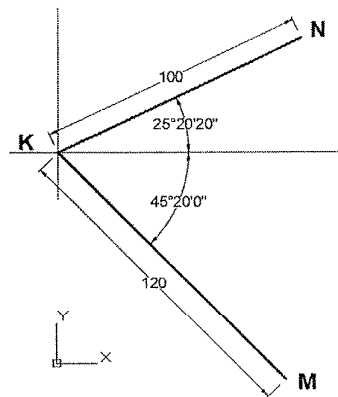


Figure-Q11

Q11. What are the relative-polar coordinates of point **M** and **N** with respect to point **K**?

4-marks

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

Q12. Write down the AutoCAD command used to obtain the *required figure* from the *given figure*.

18-marks

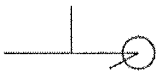
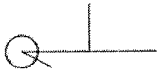
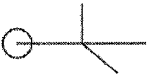
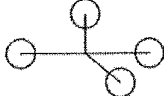
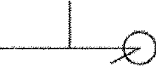
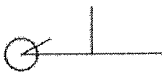
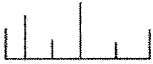
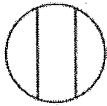
Given Figure	Command	Required Figure
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Figure-Q12

Q13. What is the layer control operation which allows you to make a layer **visible but not editable**?

3-marks

Q14. What are the **object snaps** that should be used to draw the line AB, in **Figure-Q14**?

3-marks

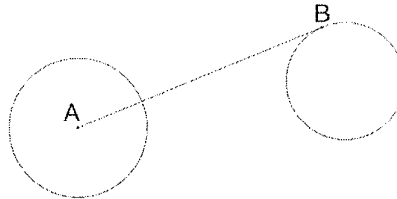


Figure-Q14

Q15. What is the **option of the circle command** used to draw the circle (C3) tangent to the given two circles (C1 and C2) as shown in **Figure-Q15**?

4-marks

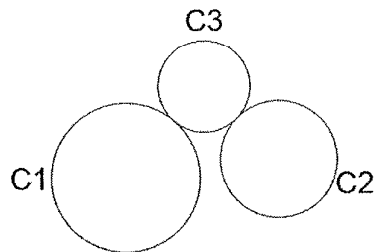


Figure-Q15

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