ZIMBABWE

MINISTRY OF HIGHER AND TERTIARY EDUCATION, INNOVATION, SCIENCE AND TECHNOLOGY DEVELOPMENT

HIGHER EDUCATION EXAMINATIONS COUNCIL (HEXCO)

NATIONAL CERTIFICATE

IN

FABRICATION ENGINEERING

SUBJECT: Engineering Drawing II **PAPER NO: 324/18/S03B**

DURATION: 3 Hours

MARCH/APRIL 2025 EXAMINATION

REQUIREMENTS

1. A3 drawing paper
2. Drawing instruments
3. A3 drawing board
4. Serialised HEXCO covers

INSTRUCTIONS TO CANDIDATE

1. Section A: This section consists of two questions. Answer one (1) question only. Each question carries 30 marks.

2. Section B: This section consists of two (2) questions. Answer one (1) question only. Each question carries 30 marks.

3. Section C: This section consists of two (2) questions. Answer one (1) question only. Each question carries 40 marks.

4. Start the pattern development using the given seam on the diagram.

This paper consists of 7 printed pages.

SECTION A

QUESTION 1

Fig Q1 shows a breech piece which comprises of the main pipe, two (2) right cones and two (2) outlet pipes. Using common central sphere method to:

a) Draw the given view. (8 marks)

b) Establish the joint lines. (7 marks)

c) Develop the pattern for the right side cone. (15 marks)

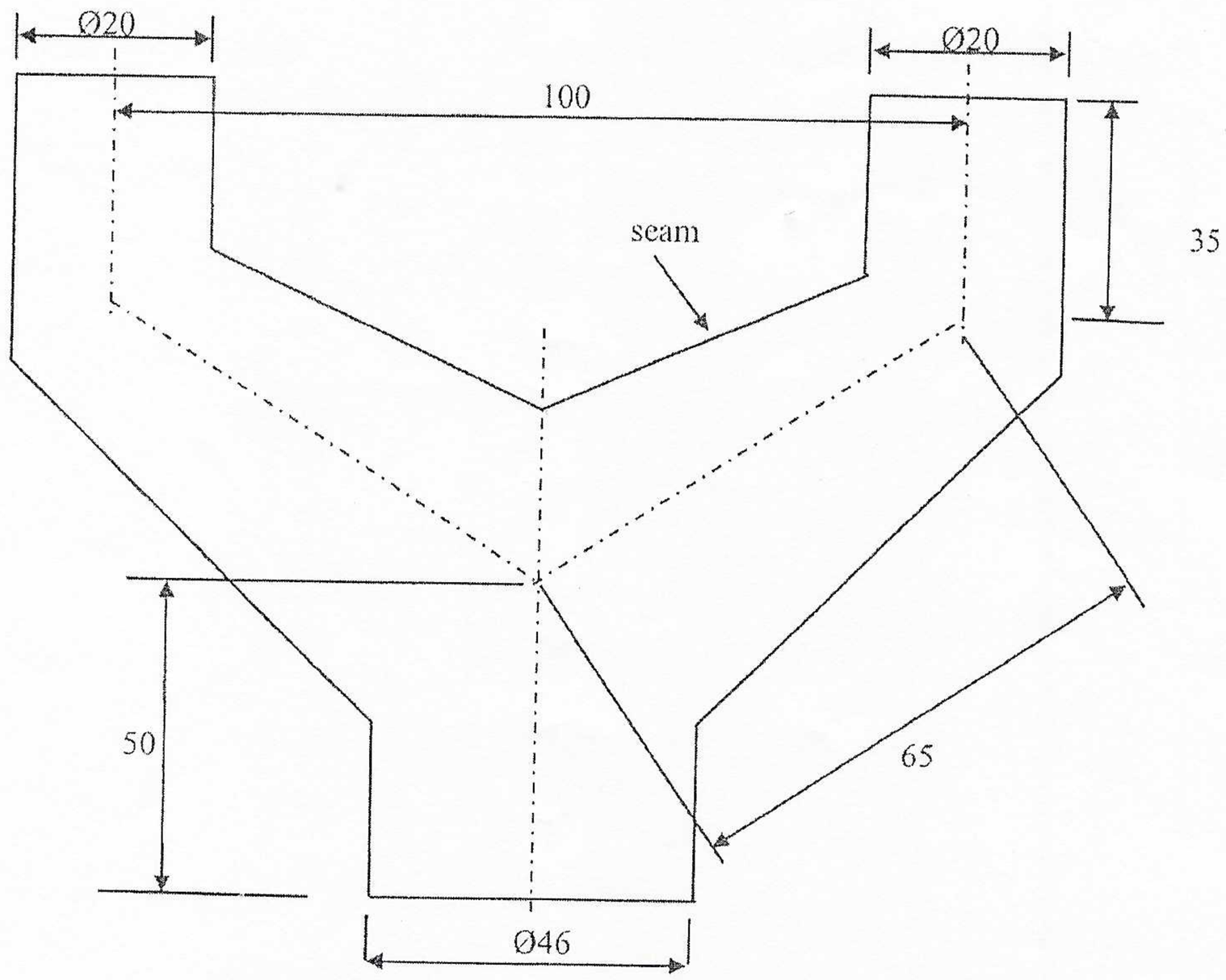

Fig Q1

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QUESTION 2

Fig Q2 shows a vertical pipe which is connected to a truncated right cone.

a) Draw the given view. (7 marks)

b) Produce the curve of penetration. (8 marks)

c) Develop the pattern for the cone. (15 marks)

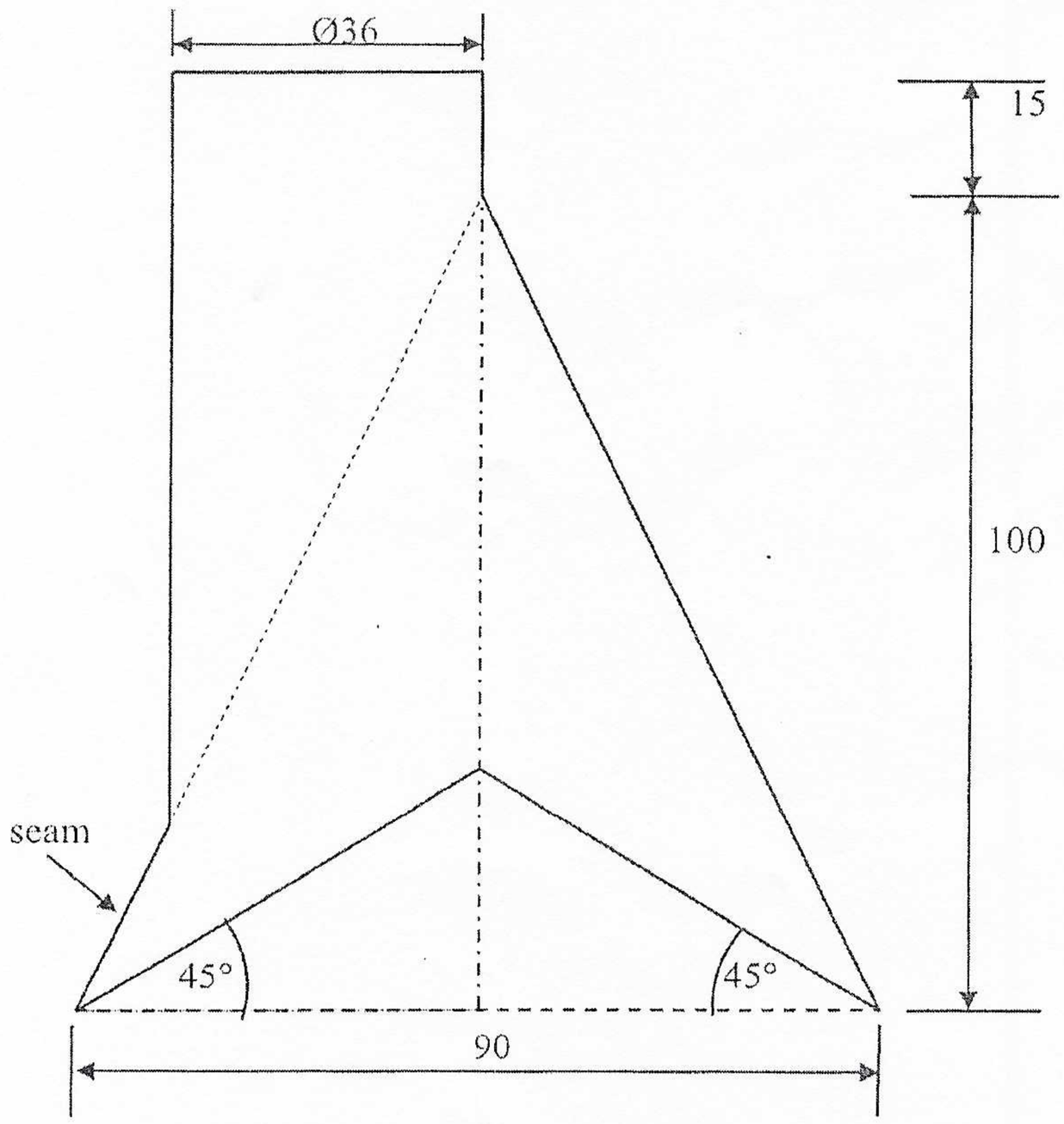


Fig Q2

SECTION B

QUESTION 3

Fig Q3 shows the front elevation and the end view of a duct (main pipe) and an inclined pipe which in off centre.

a) Draw the given views. (7 marks)

b) Produce the curve of penetration. (8 marks)

c) Develop the pattern for the duct (main pipe). (15 marks)

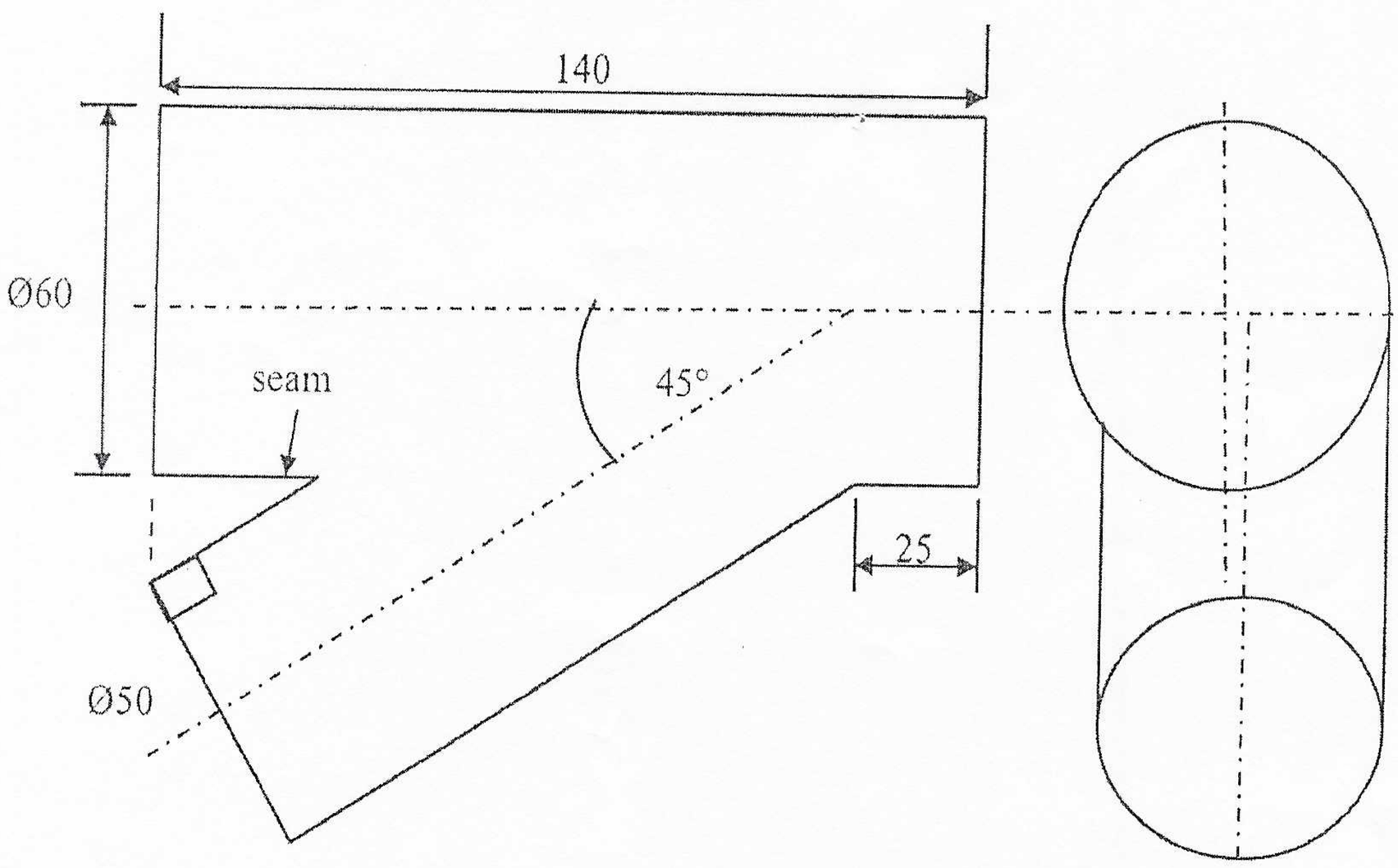


Fig Q3

QUESTION 4

Fig Q4 shows the interpenetration of a vertical pipe to a three segment lobster.

a) Draw the given view. (7 marks)

b) Establish the joint line. (8 marks)

c) Develop the pattern for segment B. (15 marks)

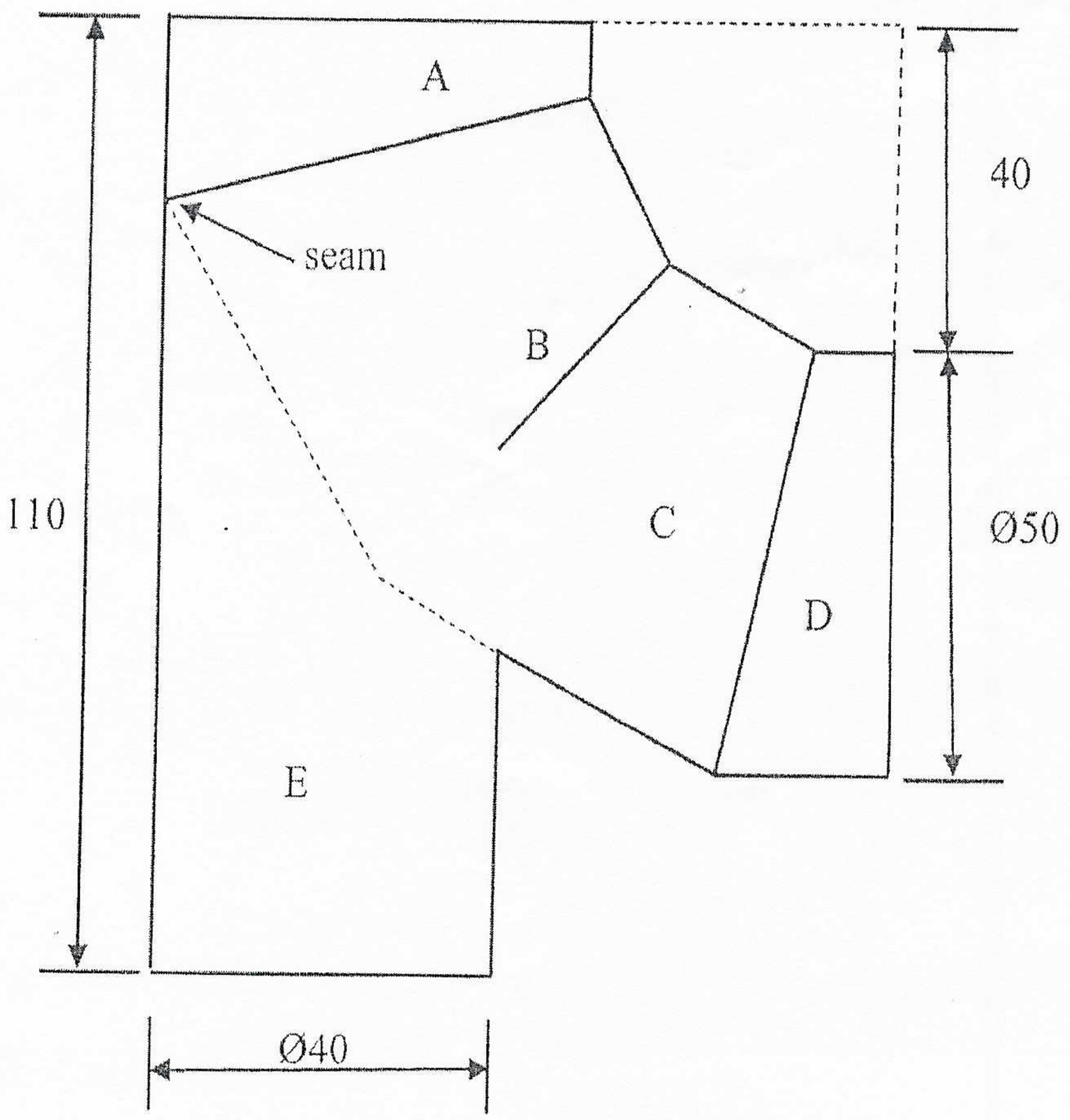


Fig Q4

SECTION C

QUESTION 5

The front and plan views of a transition piece are shown in Fig Q5.

a) Draw the given views and complete the folding lines. (15 marks)

b) Develop the pattern for the transition piece. (25 marks)

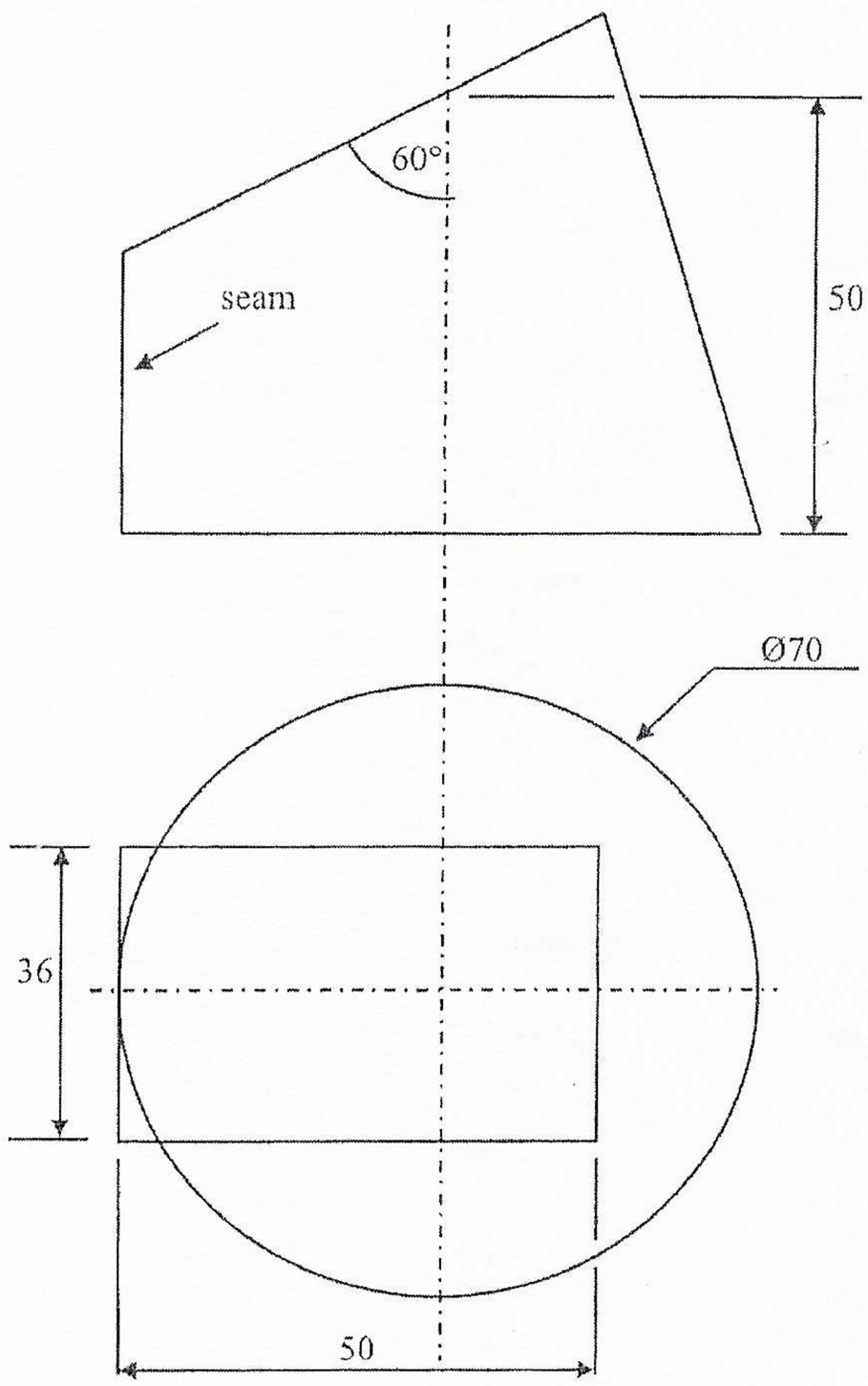


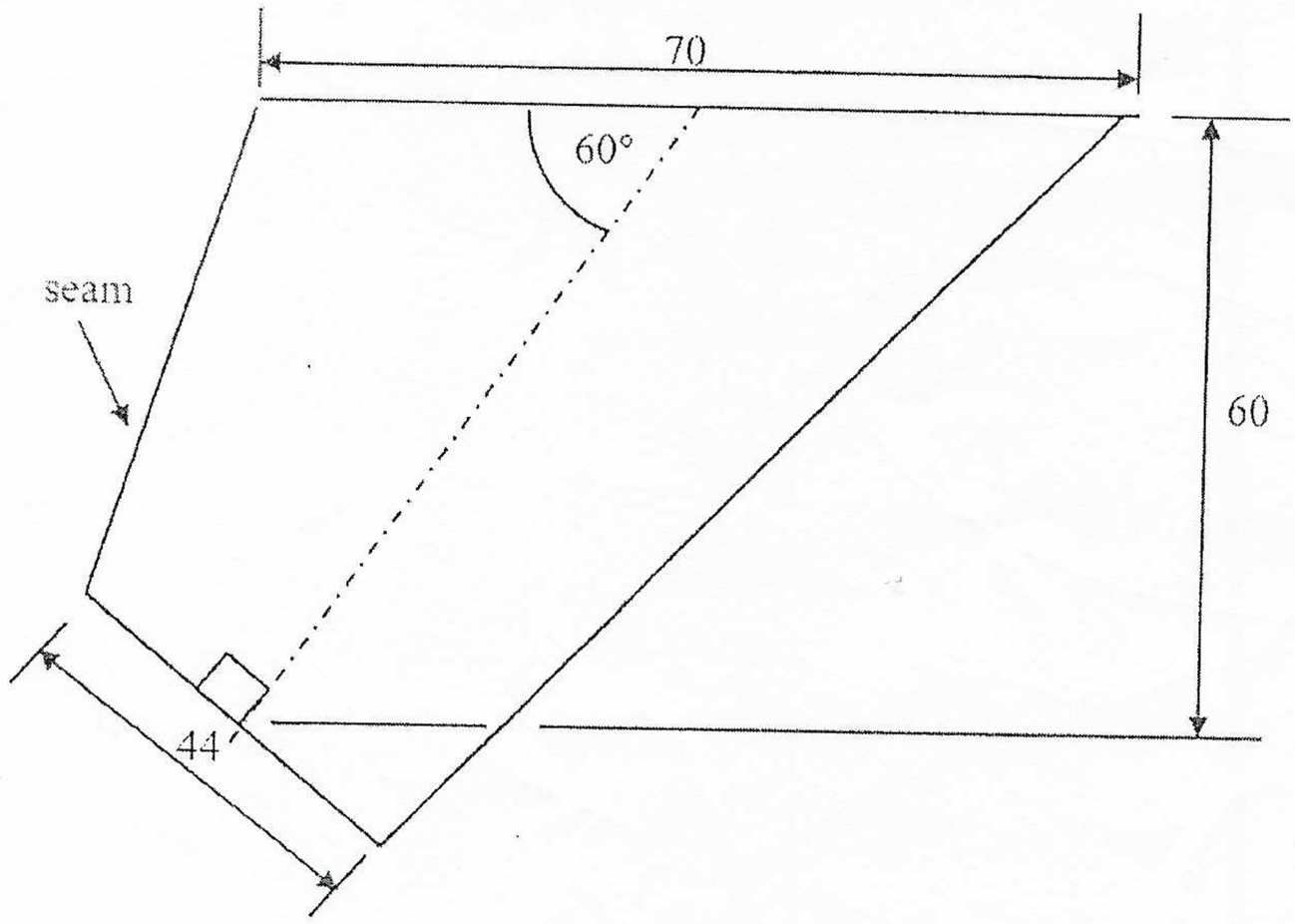
Fig Q5

QUESTION 6

Fig Q6 shows the front and end view of a chute.

a) Draw the given views and complete the folding lines. (15 marks)

b) Develop the pattern for the chute. (25 marks)



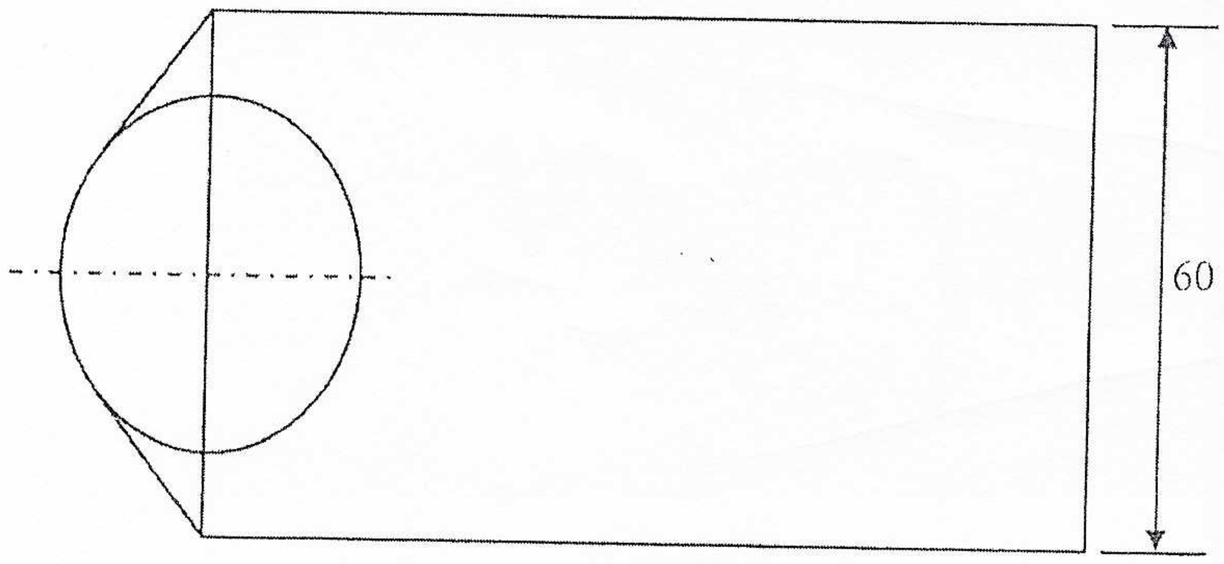


Fig Q6

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