



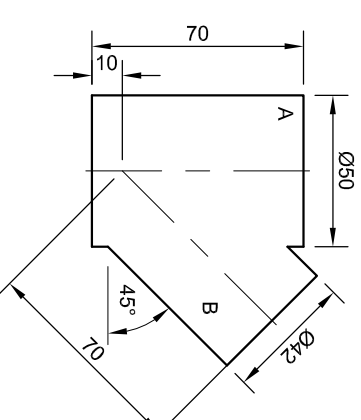
**QUESTION 2: INTERPENETRATION AND DEVELOPMENT**

A company that installs ventilation systems in buildings, designed a pipe system to fit into an office block. The system consists of a main cylindrical pipe and smaller branch pipes.

**Given:**  
The incomplete front view of a connecting piece for the ventilation system consisting of a cylindrical pipe (A) and a cylindrical branch pipe (B). The axes of both pipes lie in a common vertical plane.

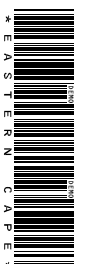
**Instructions:**

- 2.1 Draw in first-angle orthographic projection the following views of the connecting piece clearly showing the curve of interpenetration:
    - 2.1.1 The front view
    - 2.1.2 The top view
  - 2.2 Develop the surface of the branch pipe marked B.
- Show ALL necessary construction and calculations. [37]



**ASSESSMENT CRITERIA**

FRONT VIEW	10
TOP VIEW	6
CENTRE LINES (5x1/2)	2 1/2
CONSTRUCTION	6
FORMULA	2
DEVELOPMENT	10 1/2
<b>TOTAL</b>	<b>37</b>



EXAMINATION NUMBER	
EXAMINATION NUMBER	3