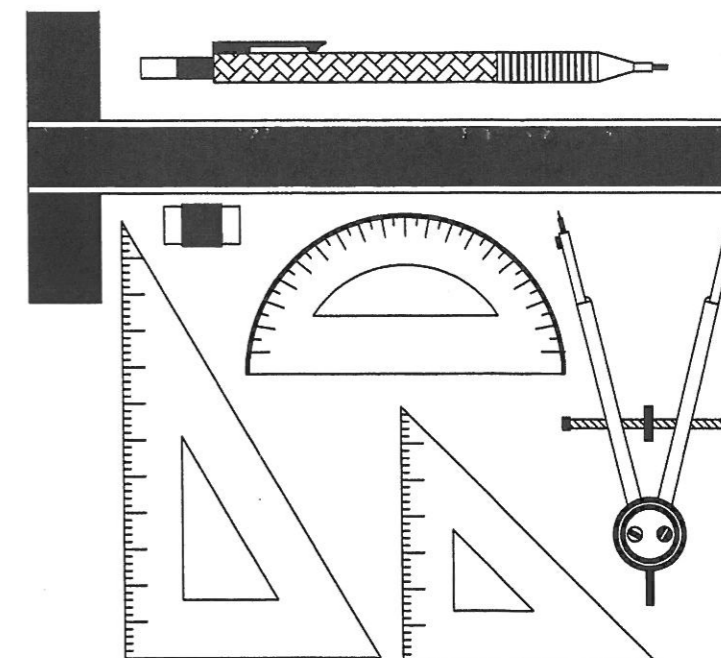


NATIONAL SENIOR CERTIFICATE EXAMINATION  
2011

ENGINEERING GRAPHICS AND DESIGN  
PAPER 1

MARKS: 200  
TIME: 3 HOURS



**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. This question paper consists of **6 pages** including the cover page and **4 questions**.
2. **All** questions must be answered.
3. Unless specified otherwise, all questions are in **First Angle Orthographic Projection**.
4. Unless specified otherwise, all questions are to be completed to a **scale of 1:1**.
5. **All** answer sheets must be re-stapled in numerical order, even questions that are not attempted/blank.
6. All **construction work** must be shown.
7. Print your **examination number** neatly on each page.
8. Use only the **drawing sheets** provided.
9. Your drawings should reflect **neatness** and **accuracy**.
10. All dimensions or detail not given may be **assumed** in **good proportion**.

| FOR OFFICIAL USE ONLY |                       |      |           |         |      |
|-----------------------|-----------------------|------|-----------|---------|------|
| QUESTION              | SECTION               | MARK | MODERATED | MAXIMUM | CODE |
| 1                     | CIVIL ANALYTICAL      |      |           | 26      |      |
| 2                     | DEVELOPMENT           |      |           | 40      |      |
| 3                     | TWO POINT PERSPECTIVE |      |           | 32      |      |
| 4                     | CIVIL DRAWING         |      |           | 102     |      |
| SYMBOL                | TOTAL                 |      |           | 200     |      |
|                       |                       |      |           | 100     |      |

|                      |            |
|----------------------|------------|
| FINAL CONVERTED MARK | CHECKED BY |
| 100                  |            |

|                    |
|--------------------|
| EXAMINATION CENTRE |
| EXAMINATION NUMBER |



**QUESTION 2**

**DEVELOPMENT**

The figure shows the front view and **incomplete** top view of a PIPING ASSEMBLY. The assembly is made up of four parts:

- A - square prismatic shell
- B - square to round transition piece
- C - truncated cylindrical pipe
- D - double truncated cylindrical pipe

**Draw the following:**

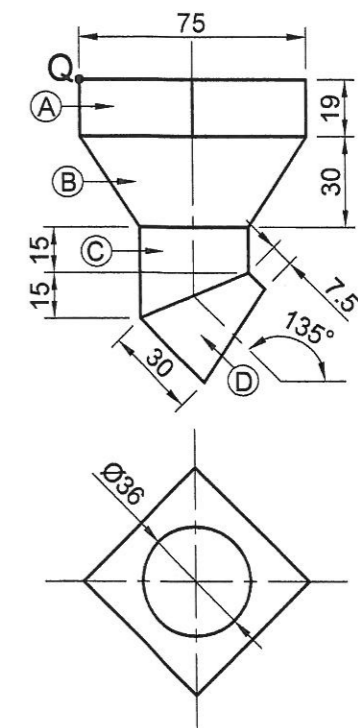
- 2.1 Draw the given front view.
  - 2.2 Draw the complete top view, clearly showing part D. Show all hidden detail.
  - 2.3 The surface development of A (square prismatic shell).
  - 2.4 The surface development of D (double truncated cylindrical pipe).
  - 2.5 Show all construction.
- Do **not** draw the development of the Transition Piece (B) and the Truncated Cylindrical Pipe (C).  
Use point Q as your starting point.

**ASSESSMENT CRITERIA**

You will be assessed on your ability to do the following:

|  |    |
|--|----|
| • draw the given front view                    | 4  |
| • draw the given top view                      | 1  |
| • draw the completed top view showing part D   | 12 |
| • show all hidden detail in completed top view | 2  |
| • develop part A                               | 4  |
| • calculate the circumference of the circle    | 1  |
| • develop part D                               | 14 |
| • draw all centre lines                        | 2  |

Q



|     |    |  |
|-----|----|--|
| FV  | 4  |  |
| TV  | 1  |  |
| D/A | 4  |  |
| D/D | 14 |  |
| CTV | 12 |  |
| H/D | 2  |  |
| CLS | 2  |  |
| CAL | 1  |  |

**40 MARKS**

EXAMINATION NUMBER

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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ANSWER SHEET 2





