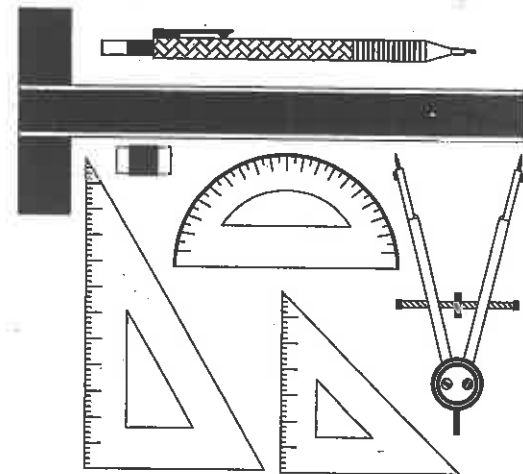


NATIONAL SENIOR CERTIFICATE EXAMINATION
2015

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			20	
2	INTERPENETRATION			39	
3	TWO-POINT PERSPECTIVE			41	
4	CIVIL DRAWING			100	
SYMBOL	TOTAL			200	
				100	

FINAL CONVERTED MARK	CHECKED BY
100	

EXAMINATION NUMBER

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QUESTION 2

INTERPENETRATION

The figure below shows the INCOMPLETE Front View and an INCOMPLETE Top View of a CIRCULAR PIPE penetrated by a SQUARE DUCT. An auxiliary view of the square duct is also given.

Draw the following:

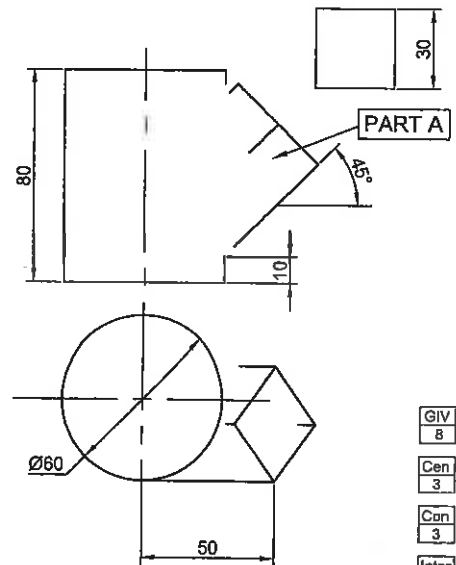
- 2.1 the complete FRONT view clearly showing the curve of interpenetration. Show all hidden detail.
- 2.2 the complete TOP view.
- 2.3 the surface development of the square duct A.

Show all construction.

ASSESSMENT CRITERIA

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

- draw the complete front view 18
- draw the complete top view 4
- show necessary centre lines and construction 6
- draw the surface development 11



GIV	8	
Cen	3	
Con	3	
Inter	14	
Dev	11	

39 MARKS

EXAMINATION NUMBER

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ANSWER SHEET 2

QUESTION 4

**CIVIL
DRAWING**

Assessment Criteria

Sectional Elevation

1	Ceiling Battens	2	
2	Wall Plate	1	
3	Ceiling Board	1	
4	Truss Plates	3	
5	Roof Truss	4	
6	Purlins	3	
7	Roof	1	
8	Walls	4	
9	Sectional Window	5	
10	Floor & Foundation	4	
11	DPC / Labels	4	
12	External Window	3	
13	Hatching	9	
14	External Walls	6	
15	Barge Board	2	
16	Finished Floor Level	2	
17	Plumbing	2	

Subtotal	56	
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Floor Plan

18	Walls	9	
19	Doors	8	
20	Windows	4	
21	Cutting Plane	2	
22	Labels	2	
23	Hatching	7	
24	Plumbing Fixtures	4	
25	External Plumbing	6	
26	Electrical	4	

Subtotal	44	
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TOTAL	100	
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100 MARKS

EXAMINATION NUMBER

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ANSWER SHEET 4