INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions.
2. Answer ALL the questions.
3. ALL drawings are in first-angle orthographic projection, unless otherwise stated.
4. ALL drawings must be completed using instruments, unless otherwise stated.
5. ALL answers must be drawn accurately and neatly.
6. ALL the questions must be answered on the QUESTION PAPER as instructed.
7. ALL the pages, irrespective of whether the question was attempted or not, must be re-stapled in numerical sequence in the TOP LEFT-HAND CORNER ONLY.
8. Time management is essential in order to complete all the questions.
9. Print your examination number in the block provided on every page.
10. Any details or dimensions not given must be assumed in good proportion.

FOR OFFICIAL USE ONLY

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>MARKS OBTAINED</th>
<th>SIGN</th>
<th>MODERATED</th>
<th>SIGN</th>
<th>RE-MARKING</th>
<th>SIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>200</td>
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</table>

FINAL CONVERTED MARK

100

CHECKED BY

COMPLETE THE FOLLOWING:

CENTRE NUMBER

CENTRE NUMBER

EXAMINATION NUMBER

EXAMINATION NUMBER

MARKS: 100
TIME: 3 hours

This question paper consists of 6 pages.
QUESTION 1: ANALYTICAL (CIVIL)

Given:
The site plan of a existing house with a proposed new garage and timber deck, a title panel and a table of questions. The drawing has not been prepared to the indicated scale.

Instructions:
Complete the table below by neatly answering the questions, which refer to the accompanying drawing and title panel.

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>ANSWERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the project number?</td>
<td>1</td>
</tr>
<tr>
<td>2. How many signatures are required?</td>
<td>1</td>
</tr>
<tr>
<td>3. How many revisions have been made to the drawing?</td>
<td>1</td>
</tr>
<tr>
<td>4. Who is the client?</td>
<td>1</td>
</tr>
<tr>
<td>5. On what date was the site plan printed?</td>
<td>1</td>
</tr>
<tr>
<td>6. How many new additions are indicated on the site plan?</td>
<td>1</td>
</tr>
<tr>
<td>7. What does the abbreviation IC stand for?</td>
<td>1</td>
</tr>
<tr>
<td>8. What is indicated by the arrows on the line at 1?</td>
<td>1</td>
</tr>
<tr>
<td>9. Name the feature at 2.</td>
<td>1</td>
</tr>
<tr>
<td>10. In what colour should the feature at 3 be shown?</td>
<td>1</td>
</tr>
<tr>
<td>11. What does the line at 4 indicate?</td>
<td>1</td>
</tr>
<tr>
<td>12. What does the broken line at 5 indicate?</td>
<td>1</td>
</tr>
<tr>
<td>13. What is the length of the boundary line at 6 in metres?</td>
<td>1</td>
</tr>
<tr>
<td>14. What is the width of Freedom Street in millimetres?</td>
<td>1</td>
</tr>
<tr>
<td>15. What is the difference in ground level height between corner A and corner B of the buildings in metres?</td>
<td>1</td>
</tr>
<tr>
<td>16. On which side of the existing house is the new timber deck?</td>
<td>2</td>
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<tr>
<td>17. Which municipal service is found on the land adjacent to stand 21?</td>
<td>2</td>
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<tr>
<td>18. In the space below, determine the perimeter of the existing house in metres.</td>
<td>3</td>
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<tr>
<td>19. In the space below, determine the combined total area of the existing house and the new garage in square metres.</td>
<td>3</td>
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<tr>
<td>20. In the space provided in the title panel, draw, in neat hand, the front view and top view of the SANS 10143 graphical symbol for a BATH.</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL 30

ANSWER 18
Show ALL calculations.

ANSWER 19
Show ALL calculations.
QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:
- The incomplete front view and top view of an equilateral triangular prism that has been shaped to fit around a right regular hexagonal prism. The axes of both prisms lie in a common vertical plane.
- An auxiliary view of the triangular prism.

Instructions:
Draw, to scale 1 : 1, the following:
2.1 The given top view
2.2 The complete front view clearly showing the curve of interpenetration
2.3 The complete right view
2.4 The development of the surface of the triangular prism
Make AB the seam.

- Show ALL hidden detail.
- Show ALL necessary construction. [35]

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**ASSESSMENT CRITERIA**

<table>
<thead>
<tr>
<th></th>
<th>TOP VIEW</th>
<th>FRONT VIEW</th>
<th>RIGHT VIEW</th>
<th>DEVELOPMENT</th>
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<tbody>
<tr>
<td>1</td>
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<tr>
<td>PENALTIES (-)</td>
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</table>

**TOTAL** 35

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EXAMINATION NUMBER 2
QUESTION 3: PERSPECTIVE

Given:
Three views of a wooden deck with a hexagonal pool and the information needed to draw a two-point perspective drawing.
PP = Picture plane
HL = Horizon line
GL = Ground line
SP = Station point

Instructions:
Complete the perspective drawing,
- Align the drawing sheet with the ground line (GL);
- Determine and label the vanishing points;
- Show ALL necessary construction;
- NO hidden detail is required.

ASSESSMENT CRITERIA

<table>
<thead>
<tr>
<th></th>
<th>CONSTRUCTION + VPP</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>BASE + STAIRS</td>
<td>12½</td>
</tr>
<tr>
<td>3</td>
<td>POOL</td>
<td>13½</td>
</tr>
<tr>
<td>4</td>
<td>CIRCULAR ARC</td>
<td>7</td>
</tr>
<tr>
<td>PENALTIES (-)</td>
<td></td>
<td></td>
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<tr>
<td>TOTAL</td>
<td>39</td>
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</tbody>
</table>
QUESTION 4: CIVIL DRAWING

Given:
- The incomplete north elevation of new consulting rooms, showing the walls, the door and window openings, the roof and notes
- The incomplete floor plan showing the walls, positions of the doors, windows, fixtures and electrical layout
- The incomplete foundation and external wall detail
- Room designations and floor finishes
- The rainwater down-pipe detail
- Schematic diagrams of the TWO types of roof trusses and roof notes
- A table of roof components
- A table of electrical symbols
- A table of fixtures
- The incomplete floor plan of the new consulting rooms, drawn to scale 1 : 50, on page 6

Instructions:
Answer this question on page 6.

4.1 Using the given incomplete floor plan, draw, in first-angle orthographic projection and to scale 1 : 50, the following views of the new consulting rooms:

4.1.1 THE COMPLETE FLOOR PLAN
Add the following features to the drawing:
- ALL doors and windows
- ALL fixtures as indicated by abbreviations
- ALL electrical fittings as indicated by numbers
- ALL hatching detail

4.1.2 THE COMPLETE NORTH ELEVATION
Show the following features on the drawing:
- The outside walls, door and window detail
- The roof detail, including the fascia boards, barge boards, gutters, rainwater down-pipe and gulley
- The finished floor level

4.2 In the space provided, draw, to scale 1 : 20, a DETAILED SECTION on cutting plane A-A of the area in the ellipse shown on the incomplete floor plan.
Show the following features on the drawing:
- The complete foundation and external wall detail
- The roof detail, including the fascia board and gutter
- ALL features and fixtures to the left of the section
- ALL hatching detail. ONLY the substructure hatchings may be drawn in neat freehand.

Label the following:
- The north elevation
- The room designations and floor finishes
- Using the correct abbreviations, label the following features in the correct view: ground level, damp-proof course and the finished floor level

NOTE:
- Planning is essential.
- ALL drawings must comply with the guidelines and graphical symbols as contained in the SANS 10143. [96]