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 pencil and 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. Proper planning 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.

MARKS: 200
TIME: 3 hours

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

Given:
The site plan of an existing warehouse with a proposed new logistics centre and guard house, a site 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. Who checked the drawing?</td>
<td>1</td>
</tr>
<tr>
<td>2. What is the number of the stand?</td>
<td>1</td>
</tr>
<tr>
<td>3. What is the number of the electrical substation?</td>
<td>1</td>
</tr>
<tr>
<td>4. How far is the refuelling point from the fuel tanks in metres?</td>
<td>1</td>
</tr>
<tr>
<td>5. How deep is the municipal sewerage connection?</td>
<td>1</td>
</tr>
<tr>
<td>6. How many gullies are shown?</td>
<td>1</td>
</tr>
<tr>
<td>7. What does the abbreviation IE stand for?</td>
<td>1</td>
</tr>
<tr>
<td>8. How many palm trees are shown?</td>
<td>1</td>
</tr>
<tr>
<td>9. What is the maximum permitted distance between the lamp posts in metres?</td>
<td>1</td>
</tr>
<tr>
<td>10. What is the combined capacity of the underground fuel tanks in cubic litres?</td>
<td>2</td>
</tr>
<tr>
<td>11. Besides the trees, what other natural feature is indicated?</td>
<td>1</td>
</tr>
<tr>
<td>12. What does the line at 1 indicate?</td>
<td>1</td>
</tr>
<tr>
<td>13. What does the line at 2 indicate?</td>
<td>1</td>
</tr>
<tr>
<td>14. Name the feature at 3.</td>
<td>1</td>
</tr>
<tr>
<td>15. In what colour must a new sewerage line be indicated on a drainage plan?</td>
<td>1</td>
</tr>
<tr>
<td>16. Which elevation of the proposed new logistics centre faces the new staff parking?</td>
<td>2</td>
</tr>
<tr>
<td>17. What is the distance between the boundary line and the building line on the north-eastern side of the stand in metres?</td>
<td>2</td>
</tr>
<tr>
<td>18. In the space below (ANSWER 18), determine the perimeter of the stand in metres.</td>
<td>3</td>
</tr>
<tr>
<td>19. In the space below (ANSWER 19), determine the total area of the proposed new logistics centre in square metres.</td>
<td>3</td>
</tr>
<tr>
<td>20. In the space in the title panel (ANSWER 20), draw, in neat freehand, the front view and top view of the SANS 10143 graphical symbol for a WASHTUB.</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL 30
QUESTION 2: SOLID GEOMETRY

Given:
- The front view and the top view of a right regular hexagonal prism with a right regular hexagonal pyramidal hole
- Cutting plane A-A

Instructions:
Draw, to scale 1 : 1, the following views of the solid:
1.1 The given front view
1.2 A sectional top view
1.3 A sectional left view
1.4 The true shape of the cut surface

- Show ALL hidden detail.
- Show ALL construction.

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QUESTION 3: PERSPECTIVE

Given:
Three views of a serving area 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 construction.
- NO hidden detail is required.

[40]
QUESTION 4: CIVIL DRAWING

Given:
- The incomplete west elevation of a new house, 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 the electrical layout
- A schematic diagram of a roof truss and roof notes
- Room designations and floor finishes
- The incomplete foundation and external wall detail
- A table of roof components
- A table of electrical symbols
- A door and window schedule
- A table of fixtures
- The incomplete floor plan of the new house, drawn to scale 1:50, and the incomplete foundation of the detailed section, drawn to scale 1:20, 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 house:

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

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

4.2 Using the incomplete foundation on page 6, 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 foundation and external wall detail
- The door detail
- The roof detail, including the fascia board and gutter
- The sink
- ALL hatching detail. ONLY the substructure hatching may be drawn in neat handrawn.

Label the following:
- The west elevation
- The room designations and floor finishes
- Ground level, finished floor level and damp-proof course (use the correct abbreviations and show it on ALL the relevant views)

NOTE:
All drawings must comply with the guidelines and graphical symbols as contained in the SANS 10143.