

ENGINEERING GRAPHICS AND DESIGN
GRADE 11
MARCH 2024
TOTAL: 34 marks

PRACTICAL ASSESSMENT TASK
PAPER 3.1
TIME: 2 HOURS

This question paper consists of **SIX** pages (excluding the **2024** grade 11, FS DoE, EGD, PAT guidelines (p 1 – 12)).

To be able to answer this question paper you must receive the following documents from your EGD teacher:
The **2024** grade 11, FS DoE, EGD, PAT guidelines (p 1 – 12).

Clean answer sheets: **One A4** double folio lined page.

Seven A3 drawing sheets.

Two A4 clean drawing sheets for preparing your cover page and a table of contents.

INSTRUCTIONS AND INFORMATION

1. The Practical Assessment Task, Exam Paper 3, is compulsory for the final promotion mark for all candidates and contributes 25% (100 marks) towards a learner's final year mark.
2. The PAT (P3) exam is not a clinical exam as the teacher's intervention is constantly needed for the success of the PAT. It is therefore important for teachers to be present during PAT invigilation to answer content related questions raised by the learners.
3. This question paper consists of different phases that must be answered during each term.
4. The PAT scenario is described on page 3 in the **2024** grade 11, FS DoE, EGD, PAT guidelines (p 1 – 12). Teachers or learners may not deviate from this format.
5. All civil drawings must be answered in first-angle orthographic projection.
6. ALL the presentation requirements of the selected PAT, except for the research, must be completed at school, under the guidance and supervision of your teacher.
7. ALL freehand drawings and instrument drawings must be prepared in pencil.
8. Indicate the scale at each drawing.
9. All written answers can be answered on A4 ruled papers or A3 clean papers.
10. All drawings must be answered on A3 diagram sheets.
11. Marks will be allocated for one complete SANS civil name block, ordinary name blocks and paper frames.
12. Not all prepared A3 pages will be used during this first phase of the exam, however all the pages must be stapled in numeric sequence, irrespective whether the phase was attempted or not.
13. Time management is essential to complete all the questions during this phase.
14. Print your name, surname (with a pen) as well as your grade on each page.
15. All answers must be drawn correct and accurate.
16. Plan each drawing carefully to show all the required information on the given diagram sheets.
17. The PAT will be assessed according to the assessment criteria and checklists, which are included in the PAT document.
18. Apply an extra column to the management plan. Name it "date completed" and monitor/self-assess your progress by completing this column.
19. Untidy and incomplete work, as well as the late submission of different phases, will be penalised.
20. NO drawing, research or complete PAT's mark will be accepted if your name and surname are not written in ink on the drawing.

Scenario 1:

Consult page 3 of the **2024** grade 11, FS DoE, EGD, PAT guidelines (p 1 – 12) for more information.

Phase 1
Question 1:
THE DESIGN BRIEF

Use the given A4 ruled paper and answer the following questions:

Analyse the given scenario and formulate a design brief in two different paragraphs:

- 1.1 The first paragraph must, in your own words, include a brief background of **what must be designed**. [2]
- 1.2 The second paragraph must, in your own words, give a clear overview of **your role in the project**. A short description of the technological design process of which you will follow, resulting a detailed solution can be described in more detail (see the headings on p 8 – 9 of this year’s PAT for more detail on the technological process). [2]
- 1.3 Identify and list a minimum of fifteen (civil PAT) **specifications**. [2]
- 1.4 List a minimum of **five** (civil PAT) **constraints** for what you will experience during the rollout of this project. This includes areas described in the PAT which is unknown to your EGD content knowledge (Rules and regulations in building industry, showing permanent fixtures and electrical features on the formal drawing, showing sewer lines on an elevation drawing, drawing a double door on a floor plan, working from real dimensions to a reduced scale towards an A3 page, etc.). [2]
- 1.5 Draw a table with at least four columns and about eleven rows indicating the following features of a **management plan**:

The headings in the first row for each column will be the following:

Number	The activities for completion (see below)	Expected date of completion (see below)	Date completed (Continuous self-evaluation [5] and meeting the deadlines [5])
1			
2			



Phase 1	
CIVIL PAT	
(7 March 2024)	
1	Completion of the design brief, specifications, constraints, and management plan
2	Completion of the paper preparation
(21 Marh - 2 April 2024):	
3	Completion of the research Submitting of research (after the March holidays).
4	Completion of bibliography.
(15 – 19 April 2024):	
5	Complete freehand drawings

6	Selecting the best solution
Phase 2	
(24 May 2024)	
7	Drawing the floor plan
8	Drawing the elevation views
9	Drawing the sectioned view
10	Drawing the site plan
11	Drawing the two-point perspective drawing
Phase 3	
(24 May 2024)	
12	Submit the final PAT project

[2]

Use either the civil assessment criteria and checklists shown below to ensure your compliance to all the specifications before you submit your design brief.

CIVIL PAT DESIGN BRIEF – ASSESSMENT CRITERIA		
1.1	1 st paragraph: background and comprehensive description of what has to be designed	2
1.2	2 nd paragraph: your role and description of complete design process you are going to follow	2
1.3	A list of TWENTY given specifications from the scenario	2
1.4	A list of FIVE possible constraints from the scenario	2
1.5	A management plan with possible target dates for ALL the presentation requirements	2
TOTAL		10

SUBTOTAL 10

Question 2: DRAWING PAPER PREPARATION

Use the given seven A3 drawing sheets and complete the following:

- 2.1 If your teacher did not give you a grid paper, or if you cannot recycle last year's PAT grid paper, you will have to use **one** of the **drawing sheets** and draw grid blocks of 5 mm x 5 mm over the complete A3 drawing sheet. This will indicate your method of drawing accurate freehand drawings. Write your initials, surname (written in pen), and your grade to the right bottom of the drawing grid page. {10}
- 2.2 On **three, A3** drawing sheets (**civil PAT**), draw only your initials, surname (written in pen), and grade to the right bottom of the page. No frame or name block is required on this page. Two of these drawing sheets will serve as freehand drawing sheets while the third A3 drawing sheet will be used for the two-point-perspective drawing (civil PAT). [1]
- 2.3 On **two, A3** drawing sheets (**civil PAT**), draw a frame, 10 mm from the edge of the drawing sheet. Draw on these drawing sheets a rectangular title block of 75 mm x 20 mm. Supply these drawing sheets with your initials, surname (written in pen), and grade between 4 mm guidelines. [2]
- 2.4 On the **remaining A3** drawing sheet draw besides the frame of 10 mm from the edge of the paper, a complete civil title panel. See below annexure A for a SANS 10143 civil title panel. Copy this title panel for your PAT. Write all the required information with a pencil but write your initials and surname (with a pen) on this drawing sheet. [5]
- 2.5 Use **one, A4** clean drawing sheet and complete your front page by adding the following to it:
 - the school's name,

- your initials and surname, written with a pen,
- your grade and class group,
- your teacher's initials and surname,
- a copy of **your own two-point perspective drawing (civil PAT)** must be added to this after completion of the latter views. [1]

2.6 Use the **second A4** paper and draw a table with 19 rows and 3 columns on it. Write the word "TABLE OF CONTENTS" in the top row. For each column use the heading, **number**, **topic** and **page** respectively. Write the numbers 1 – 16 vertically downwards in the number column. Use the list of topics for the PAT (see the last page of this document for civil PAT) and complete the topic column. The page numbers can only be completed after the PAT has been compiled and bound, just before the submission of the final PAT document on 24 May. (see below the first five of possible 18 rows as an example).

TABLE OF CONTENT		
Number	Topic	Page
1	Cover Page	
2	Table of content	
3	Summative Assessment Sheet	



[1]
 {10}

Annexure A: SANS 10 143 civil title panel

A civil title panel will be drawn at the right-hand side of the drawing sheet, from the bottom upwards. The title panel supply the following information:

- project title.
- subject of the drawing.
- the scale of the drawing.
- the date of drawing.
- the project number.
- the drawing number and revisions.
- the code references if appropriate.
- the name of the (architect) draughtsman (your name and surname written in pen).
- the address and telephone number.
- the firm name of the architect.
- the names or initials of the persons who drew and checked the drawing.

	Notes:			
	1. All windows should be steel. 2. Roof coverage should be lles 3. All dimensions not shown should be consulted with architect 4. Etc.			
	Copyright stamp:			
				
	Date print issued:			
	2016-02-25			
	Architect/ Engineer/ Planner			
	J Smuts			
	Project			
	Project Title:			
Rural Health Development				
Drawing Title:				
Zebra Health Clinic				
Project No:		Drawing No:		
DoH 071		5		
Code ref.				
Dep. of Health				
Scale	Date	Drawn	Checked	
1:200	2016/02/28	V Mabe	P Nomo	

Use either the civil assessment criteria and checklists shown below to ensure that your drawing sheet preparation comply to all the specifications before you submit your research.

CIVIL PAT DRAWING SHEET PREPATATION – ASSESSMENT CRITERIA	
Appropriately sized drawing sheets	1
Borders on all the drawing sheets of all the working drawings	2
Complete SANS 10143 compliant CIVIL TITLE PANEL on ONE working drawing's drawing sheet	7
TOTAL	10

SUBTOTAL 10

**Question 3:
ASSESSMENT CRITERIA AND CHECKLIST**

3.1 Depending on which PAT you have chosen, use your management plan of the civil PAT and complete all the information at the column named “Date completed”. {2 of 10 marks}

**Question 4:
SUMMATIVE ASSESSMENT SHEET**

4.1 Use the SUMMATIVE ASSESSMENT SHEET of this year’s PAT and complete the required information with a pen. [1]

DECLARATION OF AUTHENTICITY

4.2 Use the DECLARATION OF AUTHENTICITY of this year's PAT and complete the required information with a pen. [1]

Submission of this answer sheets (exam P3)

Submit your answer set in the following (temporary) order.

1. A temporary cover page (the two-point perspective drawing has yet to be added).
2. A temporary, unfinished table of contents (the page numbers still need to be added).
3. The summative assessment sheet.
4. The completed declaration of authenticity.
5. The design assignment with the management plan's "Date Completed column" not finally completed.
6. The **four, A4** or **two, A3** pages per subject, clean pages that will be used for research.
7. The bibliography of the research.
8. The **first of two**, clean **A3** pages for the freehand drawing of the possible design solutions.
9. The **second of two**, clean **A3** pages for the freehand drawing of the possible design solutions.
10. All the documents used to choose the best solution.
11. The floor plan (civil PAT) (prepared, but not yet completed).
12. The two elevation drawings (civil PAT) (prepared but not yet completed).
13. A complete civil SANS 10143 name block for the drawing of the sectioned elevation (civil PAT) (prepared, but not yet completed).
14. The two-point perspective drawing (civil PAT) (prepared but not yet completed).
15. The assessment criteria with the checklist filled in.
16. The gridded page for drawing the two freehand sketches.

TOTAL 34