



<u>FACULTY</u>	: Education
<u>DEPARTMENT</u>	: Science and Technology Education
<u>CAMPUS</u>	: APK
<u>MODULE</u>	: TEACHING METHODOLOGY AND PRACTICUM 3A: SP TECHNOLOGY AND FET ENGINEERING GRAPHICS AND DESIGN (MFSPTA3)
<u>SEMESTER</u>	: First
<u>EXAM</u>	: May 2020

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MR W ENGELBRECHT

MODERATOR : DR CF VAN AS (UJ)

DURATION : SUBMISSION **MARKS** : 100

NUMBER OF PAGES: 4 PAGES

INSTRUCTIONS:

1. Answer ALL the questions.
 2. Number your answers clearly.
 3. You may consult the CAPS.
 4. You are allowed to complete this assignment on your own time at home, but submit the answers electronically through Blackboard on 17 June 2020 at 16:30.
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QUESTION 1

- 1.1 Briefly discuss your understanding of the concept *technology*. (4)
- 1.2 Give a brief explanation of the concept *Technology Education*. (3)
[7]

QUESTION 2

- 2.1 Conceptual and procedural knowledge are two types of technological knowledge that can be distinguished.
- 2.1.1 Briefly describe the nature of conceptual knowledge. (3)
- 2.1.2 Briefly describe the nature of procedural knowledge. (3)
- 2.2 Relate the two types of technological knowledge to the learning outcomes in the NCS and to the specific aims in the CAPS, and provide reasons for the relationship. (4)
- 2.3 Briefly explain the most important difference between teaching these two types of knowledge. (3)
- 2.4 Critique the following statement: *In Technology we apply our knowledge of science to everyday problems.* (2)
[15]

QUESTION 3

You have to plan a Technology lesson for Grade 7, Term 2 (CAPS, p. 16-17).

- 3.1 Before you can start planning the lesson you have to look at what the Mini-PAT applicable to Term 2 is all about. Briefly explain the reason for this. (2)
- 3.2 According to you, what will the main topic for Term 2 be? (2)
- 3.3 Read the project brief (scenario) on page 16 in the CAPS and formulate a lesson objective (for the project – all ten stages of the technological process). (3)
- 3.4 Analyse the CAPS (p. 16-17) and briefly discuss the content, concepts and skills that need to be investigated to enable the learners to complete the project. (7)
- 3.5 What, according to the CAPS, are the minimum prescribed criteria for making the model? (3)
[17]

QUESTION 4

- 4.1 Briefly discuss the differences between the behavioural and constructivist instructional approaches by referring to their unique features. (4)
3/...

- 4.2 It is sometimes necessary to follow the behavioural instructional approach (direct instruction) in the technology classroom. Motivate this statement and illustrate your answer with an example from Grade 7, Term 2. (4)

[8]

QUESTION 5

Grade 8 Technology learners should be able to sketch a simple electric circuit (CAPS, p.28).

- 5.1 Sketch a simple electric circuit with a battery, two switches in series, a conductor and a light bulb using the correct component symbols. (10)
- 5.2 Learners often have trouble in moving from the abstract to the concrete when, for example, they have to make a physical circuit with real components and connecting wire according to a circuit diagram. Explain how you would teach the making of such a circuit to learners, and how you will facilitate them making the circuits in groups. Refer to your instructional approach and strategies, and explain how you would convey the concepts and skills required for the task. (6)

[16]

QUESTION 6

- 6.1 Differentiate between the following two concepts:
- 6.1.1 Assessment; and (2)
- 6.1.2 Evaluation (2)
- 6.2 Discuss the following statement: *There must be a relation between a lesson outcome/objective and assessment.* (3)

[7]

QUESTION 7

You have to plan EGD lessons on **mechanical drawing** for Grade 10, Term 2 (CAPS, p. 17).

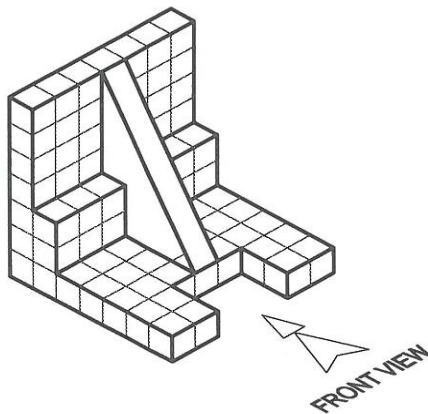
- 7.1 Analyse the content to be covered under the topic **mechanical drawing** and identify the main concepts to be taught. (8)
- 7.2 If one period is 40 minutes long, how many periods, according to the CAPS, do you have to cover all the content regarding mechanical drawing? (2)
- 7.3 What pre-knowledge is required by the learners before they can proceed with mechanical drawing? (4)

[14]

QUESTION 8

Grade 10 EGD learners should be able to make third angle orthographic drawings (CAPS, p.17).

- 8.1 Draw a freehand third angle orthographic projection of the object shown below in your examination book.



(9)

- 8.2 What is the single discernible factor which distinguishes a third angle orthographic projection from a first angle orthographic projection? (2)
- 8.3 Briefly explain how you would teach the difference between first and third angle orthographic projection to Grade 10 EGD learners. Refer to your instructional approach and strategies, and explain how you would convey the concepts around the single discernible factor mentioned in 8.2. (5)
- [16]

TOTAL: 100