



<b><u>FACULTY</u></b>	: Education
<b><u>DEPARTMENT</u></b>	: Science and Technology Education
<b><u>CAMPUS</u></b>	: APK
<b><u>MODULE</u></b>	: TEACHING METHODOLOGY AND PRACTICUM: SENIOR PHASE TECHNOLOGY (MPSTEY1)
<b><u>SEMESTER</u></b>	: Second
<b><u>EXAM</u></b>	: SSA January 2020

**ASSESSOR(S)** : MR W ENGELBRECHT

**MODERATOR** : DR N TEIS (UFS)

**DURATION** : 2 HOURS

**MARKS** : 100

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NUMBER OF PAGES: 8 PAGES

INSTRUCTIONS:

1. Answer ALL THE QUESTIONS.
  2. Number your answers clearly.
  3. You may consult the CAPS.
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**QUESTION 1**

- 1.1 Briefly discuss the phenomenon 'technology' by referring to its most important characteristics. (4)
- 1.2 Describe the rationale for Technology as a school subject. (4)
- [8]**

**QUESTION 2**

Technological knowledge consists of conceptual knowledge and procedural knowledge which cannot be separated from one another when solving technological problems. Differentiate between these two types of knowledge by referring to the role of each type when practicing technology.

**[10]**

**QUESTION 3**

- 3.1 Choose and briefly motivate the instructional approach and strategy you would use to teach learners about different forces acting on members of a frame structure. (3)
- 3.2 Choose and briefly motivate the instructional approach and strategy you would use to teach learners how to use a hot glue gun during the making stage. (3)
- 3.3 Choose and briefly motivate the instructional approach and strategy you would use when learners have to work together to generate initial ideas for solving a technological problem. (3)
- [9]**

**QUESTION 4**

- 4.1 Briefly demonstrate how you would determine whether your learners have the required pre-knowledge before you start teaching new content by referring to the type of assessment and technique/instrument involved. (3)
- 4.2 Would you regard this type of assessment as formal or informal assessment? Motivate your answer. (2)
- [5]**

**QUESTION 5**

- 5.1 Write your name and student number on the lesson plan template provided. Use this lesson plan template and design a 40 minute lesson on the following:
- Grade 7
  - Term 1

- Focus: **Mechanical systems and control**
- Content, concepts and skills: **Lever, linkages, hydraulics and pneumatics**
- Stage: **Investigation**

Note: According to the CAPS, 2 hours are allocated for teaching simple mechanisms (First-class levers). This is equal to 3 periods of 40 minutes each. (21)

- 5.2 Formulate three (3) assessment questions you would include in a worksheet for the lesson you design in 5.1. The questions must relate to the following levels of Bloom's taxonomy:

- 5.2.1 one question on the knowledge level,
- 5.2.2 one question on the application level, and
- 5.2.3 one question on the analytical level. (6)

- 5.3 In order for a teacher to constantly improve it is necessary to reflect on his/her teaching and PCK. Briefly discuss how this practice can ensure effective teaching and learning? (3)  
[30]

### **QUESTION 6**

Briefly explain how you would manage your classroom/workshop during the making stage of the technological process by referring to the following:

- 6.1 Tools and equipment; (2)
- 6.2 Materials and consumables; and (2)
- 6.3 Time management. (2)  
[6]

### **QUESTION 7**

Due to the fact that the practice of teaching is complex, it is essential that teachers, as reflective practitioners, intentionally construct a teaching philosophy. Discuss your own teaching philosophy as a technology teacher by referring to the following aspects:

- Your objectives as a teacher
- Methods to be used to achieve these objectives
- How the effectiveness of these objectives and methods can be measured
- Your view on why teaching is important

[8]

**QUESTION 8**

Read the passage below and answer the questions that follow.

**Weaponised drone reportedly used in failed assassination attempt**

From [www.dezeen.com](http://www.dezeen.com)

Venezuelan officials have claimed a thwarted assassination attempt was made against President Nicolás Maduro using explosives strapped to drones. If true, this would be the first reported drone-enabled assassination attempt of a head of state.

Interior Minister Néstor Reverol said on Venezuelan national television that two DJI M600 drones, each loaded with one kilogram of the plastic explosive C-4, were flown towards the president during a military rally in Caracas on Saturday 4 August. Footage of the event shows Maduro and top military officials reacting with shock to a loud explosion, before men in suits rush to protect the Venezuelan president with shields.

Uniformed soldiers can be seen breaking formation to scatter from the site of the apparent blast before the live broadcast was cut. Seven people have been reported as injured. "That drone was coming for me but there was a shield of love," Maduro said in a speech hours after the incident.

- 8.1 Briefly relate the case study above to at least three values presented in technology education literature by naming the value and briefly explaining how the case study relates to the specific value. (6)
- 8.2 Briefly explain why technology is said to be value laden. (3)
- 8.3 Briefly discuss the importance of a project brief that relates to the current value system of the students. (2)
- 8.4 Briefly explain how you would develop learners' values related to technology by referring to the teaching approach and strategies you would use. (2)

**[13]**

**QUESTION 9**

- 9.1 Technological development cannot take place without natural resources. Briefly illustrate the relationship between technology and the natural world by referring to the impact of technology on the environment. (4)
- 9.2 Gender inequality is a common problem in the technological world. Distinguish between the various ways in which teachers typically deal with this issue in a technology classroom. (5)

**[9]**

**TOTAL: 100**

**LESSON PLAN TEMPLATE**

NAME: \_\_\_\_\_ STUDENT NUMBER: \_\_\_\_\_

SUBJECT: \_\_\_\_\_

PHASE: \_\_\_\_\_

GRADE: \_\_\_\_\_

TITLE/TOPIC OF LESSON: \_\_\_\_\_

**1.1 SITUATION ANALYSIS** (Who? When? Where?)

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(3)

**1.2 LEARNING OUTCOMES/SPECIFIC AIMS** (What for?)

Curriculum and Assessment Policy Statement (CAPS), p. \_\_\_\_\_

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(2)

**1.3. LESSON OBJECTIVE** (For the project – all ten stages) (What for?)

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(2)

**STAGE: *Investigation*****2.1. STAGE OBJECTIVE** (What for?)

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(2)

**2.2. LEARNING CONTENT** (What?)

Procedural knowledge: (Thinking processes and skills)

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(2)

Conceptual knowledge (Factual knowledge: Definitions, concepts, rules, etc.)

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(2)

**CURRICULUM AND ASSESSMENT POLICY STATEMENT (CAPS)**

Focus/Content, concepts and skills, p. \_\_\_\_\_

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(3)

**2.3. TEACHER ACTIVITIES** (How?)**2.3.1** Setting the context (Introduction)

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(3)

**2.3.2** Instruction**a)** Instructional approach

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(2)

b) Instructional strategy(ies)

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(2)

c) Instructional skill(s)

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(2)

2.4. **LEARNER ACTIVITIES** (Types of tasks) (What for?)

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(2)

2.5. **RESOURCES**

2.5.1 Instructional media

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(2)

2.6. **QUESTIONS** (Questions to be asked: relate to Bloom's taxonomy)

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(3)

2.7 **ASSESSMENT**

National Curriculum Statement (NCS), p. \_\_\_\_\_

(1)

Assessment standard (Demonstration of learner achievement)

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(2)

2.7.1 Type (Person, time, manner)

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(3)

2.7.2 Technique

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(1)

2.7.3 Instrument

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(1)

[42 ÷ 2] = **[21]**

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