FACULTY	: Education
DEPARTMENT	: Science and Technology Education
CAMPUS	: APK
MODULE	: CURRENT ISSUES IN TECHNOLOGY EDUCATION (HCITE0Y)
SEMESTER	: Second
EXAM	: November 2019

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MODERATOR : DR W RAUSCHER (UP)

DURATION : 3 HOURS   **MARKS**   : 100

NUMBER OF PAGES: 3 PAGES

INSTRUCTIONS:

1.   Answer ALL THE QUESTIONS.

2.   This is an open book examination, you may consult your notes.

3.   Your answers should be authentic and not plagiarised.

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QUESTION 1

1.1   Technology is globally still a new school subject that lacks a substantive
       research base as well as a well-established classroom pedagogy. Briefly
       discuss the rationale for technology as a school subject?   (5)

1.2   Explain the relationship between technology (the "T"), science (the "S"),
       engineering (the "E") and mathematics (the "M") in STEM Education.
                                                                             (12)

1.3   Briefly discuss three (3) viable approaches to STEM Education.   (6)
                                                                            [23]

QUESTION 2

Discuss the key aspects of the modern philosophy of technology as based on
Mitcham's (1994) four modes in which technology manifests itself.
                                                                            [16]

QUESTION 3

3.1   Explain the thinking sub-processes (and their associated steps) that relate
       to the various stages of the technological process.   (10)

3.2   Explain why problem solving in technology is integral to 21st century skills.
                                                                             (5)
                                                                            [15]

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QUESTION 4

Technology Education lends itself to an interdisciplinary approach as it draws on knowledge, skills and information from other subjects. This statement makes technology education a key player in STEM education and scholars in technology education believe that the "T" can be the "integrator" of the "S", the "E" and the "M" in STEM education. Argue why the "T" can be the "integrator" of the "S", the "E" and the "M" in STEM education.

[12]

QUESTION 5

Technology is shaped by the communal beliefs, values and attitudes of individuals, organisations and society and, in turn, has a significant effect on shaping culture and the environment. Explain how and when to teach values in technology education.

[8]

QUESTION 6

Student's technological concepts and attitudes have been researched for over three decades. Briefly discuss the perceptions and attitudes of pupils toward technology under the following headings:

6.1   The rationale for ascertaining pupils' attitudes toward technology.   (5)

6.2   General research findings regarding students' attitudes toward and concepts of technology, in particular in the PATT studies.   (8)

6.3   Future opportunities for attitude studies in technology.   (4)

[17]

QUESTION 7

Briefly discuss the complementarity between indigenous technology knowledge systems and western technology knowledge systems by also referring to Mitcham's philosophy of technology.

[9]

Total: 100

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