UNIVERSITY OF JOHANNESBURG

FACULTY	: Education
DEPARTMENT	: Science and Technology Education
CAMPUS	: APK
MODULE	: CURRENT ISSUES IN TECHNOLOGY EDUCATION (HCITE0Y)
SEMESTER	: Second
EXAM	: SSA January 2021

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MODERATOR : DR W RAUSCHER (UP)

DURATION : 3 HOURS **MARKS** : 100

NUMBER OF PAGES: 4 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.

QUESTION 1

1.1 Discuss the difference between STEM literacy and S.T.E.M literacies. (4)

1.2 Briefly discuss three (3) viable approaches of teaching STEM Education. (8)

[12]

QUESTION 2

2.1 Briefly discuss the tenets/nature of technology and technology education by linking it to Mitcham's (1994) four modes in which technology manifests itself. (16)

2.2 The CAPS states that: 'The Design Process (Investigate, Design, Make, Evaluate, Communicate – IDMEC) forms the backbone of the subject and should be used to structure the delivery of all learning aims. Learners should be exposed to a problem, need or opportunity as a starting point. They should then engage in a systematic process that allows them to develop solutions that solve problems, rectify design issues and satisfy needs' (DoBE, 2011, p.11).

The annual teaching plan for Grades 7 – 9, as set out in the CAPS, does not fully live up to this statement.

If you were given the opportunity to make a proposal in order to bring the annual teaching plan in line with the above statement, what would you suggest? Use Grade 7, Term 1 as an example. (4)

2.3 According to the CAPS for SP Technology (Grades 7-9) each term has a specific focus with a specific project (MiniPAT) in mind. Lesson planning will therefore have to be done for the project as a whole. Briefly discuss the most important components/aspects that need to be considered when doing lesson planning for such a project. (10)

[30]

QUESTION 3

3.1 Technological capability involves the learner's capacity to engage in technological activities such as thinking, decision-making, problem-solving and design. Briefly discuss your understanding of these processes. (12)

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

[17]

QUESTION 4

Scholars in technology education believe that the "T" can be the "integrator" of the "S", the "E" and the "M" in STEM education. Write a narrative on your understanding of this statement by referring to an example.

[16]

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.

6.1 Briefly argue why formational and consistent theories of attitudes as well as Mitcham's (1994) philosophical framework can be juxtapose/superimpose. (9)

6.2 Learners' attitudes towards technology may be attributed to various determinants/predictive characteristics. Briefly discuss those determinants/predictive characteristics that do not relate specifically to the learners. (8)

[12]

QUESTION 7

Briefly discuss the complementarity between indigenous technology knowledge systems and western technology knowledge systems.

[5]

Total: 100

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