



<u>FACULTY</u>	: Engineering and Built Environment
<u>DEPARTMENT</u>	: Mechanical and Industrial Engineering Technology
<u>CAMPUS</u>	: DFC
<u>MODULE</u>	: Environmental Management B2
<u>MODULE CODE</u>	: EMVMNB2
<u>SEMESTER</u>	: Second
<u>ASSESSMENT</u>	: Main Examination

<u>DATE</u>	: 19 November 2019	<u>SESSION</u>	: 12:30-15:30
<u>ASSESSOR(S)</u>	: Ms P Nqina		
<u>MODERATOR</u>	: Mrs P Nelwamondo		
<u>DURATION</u>	: 3 HOURS	<u>MARKS</u>	: 100

NUMBER OF PAGES: 5 PAGES

INSTRUCTIONS:

1. Answer ALL THE QUESTIONS.
 2. Number your answers clearly
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QUESTION 1

- 1.1. In order to give effect the general objectives of integrated environmental management laid down in chapter 5 of the National Environmental Management Act 107 of 1998, the potential impacts on the environment, socio-economic and the cultural heritage of activities that require authorisation or permission by law and which may significantly affect the environment must be considered, investigated and assessed prior to their implementation and reported to the organ of state charged by law with authorizing, permitting, or otherwise allowing the implementation of the activity. **Briefly explain the following listing notices of activities which may not commence without an environmental authorisation from the competent authority.**

- 1.1.1. Listing Notice 1 (2)
- 1.1.2. Listing notice 2 (2)
- 1.1.3. Listing Notice 3 (2)

- 1.2. Based on the previous question, which activities requires the following (**use the Listing Notices to indicate the activities**)

- 1.2.1. Basic assessment report (2)
- 1.2.2. Scoping and Environmental Impact Report (full EIA) (2)

- 1.3. Under what circumstance will an activity that is subjected to a basic assessment be subjected to a scoping and environmental impact assessment (2)

(12)

QUESTION 2

2.1. The five major greenhouse gases in the atmosphere are **Carbon Dioxide, Methane, Water Vapour, Nitrous Oxide** and **Chlorofluorocarbons**.

2.1.1. What is a greenhouse gas? (2)

2.1.2. Methane is a far more active greenhouse gas than carbon dioxide; however, carbon dioxide is the primary greenhouse gas. Briefly explain why? (6)

2.1.3 Which greenhouse gas was not present before the beginning of the first industrial revolution (1)

2.2. Differentiate between the natural greenhouse effect and the human enhanced greenhouse effect (4)

2.3. Climate is the sum of weather conditions in a given area, averaged over a long period of time.

2.3.1. Briefly explain any three observed or expected impacts of climate change. (6)

2.3.2. A large proportion of South Africa's population is particularly vulnerable to the impacts of climate change. (5)

(24)

QUESTION 3

3.1. Pollutants are substances that causes pollution, air pollutants are classified into two namely, **primary air pollutants** and **secondary air pollutants**. Distinguish between the two classes of air pollutants and give an example of each (6)

3.2. Ozone can be good or bad for health, wellbeing and the environment depending on where it is found in the atmosphere briefly explain the following.

3.2.1. stratospheric ozone (2)

3.2.2. Ground-level ozone. (2)

- 3.3. The government has identified three air pollution hot spot or national priority areas across the country that require special attention due to the high levels of air pollution. Mention the three national priority areas (3)

(13)

QUESTION 4

- 4.1. The South African National Standard (SANS 10228) classify dangerous good into nine classes.

4.1.1. Define dangerous goods according the standard (2)

4.1.1. Mention any 5 classes of dangerous goods. (5)

- 4.2. Material Safety Data Sheet is important when handling, storing and transportation of dangerous goods or hazardous substances.

4.2.1 Briefly explain a Material Safety Data Sheet. (2)

4.2.2 Discuss its importance when handling, storing and transporting dangerous goods and hazardous waste (3)

(12)

QUESTION 5

- 5.1. The primary intention of the National Waste Management Strategy is to implement the waste management hierarchy, which is the overall approach that informs waste management in South Africa.

5.1.1. What is the overall purpose of implementing the waste management hierarchy? (2)

5.1.2. Draw the waste management hierarchy in a descending order of priority (use an arrow to indicate the order of preference) (8)

- 5.2. There is a view that landfill is widely considered as the most affordable way to manage waste. However, this view does not take into consideration of three factors. Briefly explain the three factors. (6)
- 5.3. In order to implement the Waste Act, participation by numerous role-players is required. Mention any two measures that the following role players must execute to give effect to the waste act.
- 5.3.1 Government (2)
- 5.3.2 Private sector (2)
- 5.3.3 Civil Society (2)

(22)

QUESTION 6

- 6.1. South Africa is well endowed with abundant renewable energy resources that can be converted to productive energy uses. At present, the utilization of these resources is not cost competitive in many location compared to South Africa's fossil-based energy supply industry.

- 6.1.1 Briefly explain the concept of renewable energy (2)
- 6.1.2 Mention any five renewable energy resources (5)

(7)

QUESTION 7

The PDCA model provides an iterative process used by organizations to achieve continual improvement. Demonstrate your understanding of the relationship between the PLAN-DO-CHECK-ACT (PDCA) model and the framework introduced in the ISO 14001: 2015 international standard. (10)

(10)

100 MARKS

