



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL DIPLOMA

IN

ENVIRONMENTAL HEALTH

SUBJECT: Sanitation and Hygiene

PAPER NO: 605/21/S14

DURATION: 3 Hours

MARCH/APRIL 2023 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

- 1. Answer ANY FIVE questions.**
- 2. Each question carries 20 marks.**

This paper consists of 2 printed pages.

QUESTION 1

Define the following terms:-

- | | |
|-------------------|-----------|
| (a) waste | (2 marks) |
| (b) hygiene | (2 marks) |
| (c) sullage | (2 marks) |
| (d) sewage | (2 marks) |
| (e) pollution | (2 marks) |
| (f) biodegradable | (2 marks) |
| (g) refuse | (2 marks) |
| (h) sanitation | (2 marks) |
| (i) effluent | (2 marks) |
| (j) ash | (2 marks) |

QUESTION 2

Describe the processes that happens at a conventional Sewage Treatment Plant. (20 marks)

QUESTION 3

- (a) Discuss the sources of water pollution and describe their characteristics. (10 marks)
- (b) Explain the steps you would follow in taking a bacteriological sample from a tap. (10 marks)

QUESTION 4

- (a) With the aid of a diagram explain the hierarchy of solid waste management. (10 marks)
- (b) Discuss any four hygiene enabling facilities necessary for a rural set up. (10 marks)

QUESTION 5

- (a) With the aid of a well labelled diagram, describe the hydrological cycle. (10 marks)
- (b) Explain how human activities affect their hydrological cycle. (10 marks)

QUESTION 6

- (a) Explain the following sanitation options:-
- | | |
|--|-----------|
| (i) Wet onsite technology and give examples. | (4 marks) |
| (ii) Wet offsite technology | (3 marks) |
| (iii) Dry onsite technology | (3 marks) |
- (b) Explain how a Blair ventilated improved pit latrine works. (10 marks)
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