higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

PROCESS TECHNOLOGY
NQF LEVEL 2

(6050342)

8 November 2018 (X-Paper)
09:00–12:00

This question paper consists of 4 pages.

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TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Start each question on a NEW page.
5. Write neatly and legibly.

NC2490

QUESTION 1

Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (1.1–1.5) in the ANSWER BOOK. Correct the statement if it is FALSE.

1.1 Main process is a label used to indicate piping on PFDs.

1.2 Steel pipes have a good corrosion resistance and are extremely light.

1.3 The largest part of a valve is called a seat.

1.4 A diaphragm pump is an example of a rotary pump.

1.5 Final products are stored to be reused or for disposal at a later stage.

(5 × 2) **[10]**

QUESTION 2

2.1 What is the other name for a process flow diagram? (2)

2.2 Name TWO computer programs used to draw PFDs. (2)

2.3 Draw each of the following valve symbols:

2.3.1 Check valve

2.3.2 Three-way valve

(2 × 2) (4)

2.4 List SIX types of standard stop valves found in the industry. (6)

2.5 Name SIX separation processes used by industries. (6)

2.6 Spillages are most commonly found in vibrating screens.

2.6.1 Define *spillages.*

2.6.2 Describe the cause of spillages in screens.

(2 × 2) (4)
[24]

QUESTION 3

3.1	Define *centrifugal pump.*		(2)
3.2	Differentiate between *single-stage* and *multistage* centrifugal pumps.	(2 + 2)	(4)
3.3	List FIVE applications of vane pumps.		(5)
3.4	Write brief notes on belt conveyors.		(7)
			[18]

QUESTION 4

4.1	Name SEVEN things that can lead to the deterioration of products.		(7)
4.2	Write brief notes on each of the following:		
	4.2.1 Raw materials		(4)
	4.2.2 By-products		(3)
4.3	Give FOUR advantages of horizontal and vertical tanks.		(4)
			[18]

QUESTION 5

5.1	Define *filtration.*		(2)
5.2	Differentiate between *gravity filtration* and *absorption filtration*.	(2 + 2)	(4)
5.3	List EIGHT components of a slow sand filter.		(8)
5.4	Explain the settling process in a sedimentation tank.		(4)
5.5	Name FIVE factors that cause poor performance of a sedimentation process.		(5)
5.6	Why are discs of centrifuges conically shaped?		(2)
5.7	List FIVE applications of forward-flow cyclones.		(5)
			[30]

TOTAL: 100

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