higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NON-NATIONAL CERTIFICATE

SPECIALISED ELECTRICAL INSTALLATION CODES

(Second paper)

(8080644)

30 July 2021 (X-paper)
09:00–12:00

This question paper consists of 5 pages.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NON-NATIONAL CERTIFICATE
SPECIALISED ELECTRICAL INSTALLATION CODES
(Second paper)
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. Only use a black or a blue pen.
6. Write neatly and legibly.

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QUESTION 1: OCCUPATIONAL HEALTH AND SAFETY ACT 85 OF 1993 – ELECTRICAL INSTALLATION REGULATIONS

Complete the following definitions by writing only the missing word or words next to the question number (1.1.1–1.1.6 and 1.2.1–1.2.4) in the ANSWER BOOK:

1.1 A certificate of compliance (CoC) is a certificate with a (1.1.1) … number obtainable from the (1.1.2) … , or a person appointed by the chief inspector, in the form of (1.1.3) … 1 and issued by a (1.1.4) … person in respect of an (1.1.5) … or part of an electrical installation; or a certificate of compliance issued under the (1.1.6) …, 1992. (6)

1.2 A point of control is defined as the point at which an electrical installation on or in any (1.2.1) …can be (1.2.2) … by a user or (1.2.3) …. from the electricity (1.2.4) … from the point of supply. (4)

[10]

QUESTION 2: SANS 60079-14: 2014 ELECTRICAL INSTALLATIONS DESIGN, SELECTION AND ERECTION

2.1 What does this standard not apply to? (4)

2.2 What is a hybrid mixture? (1)

2.3 Describe the explosion prevention technique of pressurisation p. (3)

2.4 State the necessary information that should be considered for installations in explosive atmospheres, including the dossiers or documentation required for the plant on which the installation takes place. (7)

[15]

QUESTION 3: SANS 60079-17: 2014 ELECTRICAL INSTALLATIONS INSPECTIONS AND MAINTENANCE

3.1 Name the three grades of inspection. (1)

3.2 Indicate whether the following statement is TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (3.2) in the ANSWER BOOK.

Visual and close inspections can be performed with the equipment energized. (1)

3.3 What is required of the personnel who perform regular periodic inspections in hazardous areas? (3 × 2) (6)

3.4 What should sample inspections be used for? (2)

[10]

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QUESTION 4: SANS 60079-19: 2015 EQUIPMENT REPAIR, OVERHAUL AND RECLAMATION

4.1 Describe the scope of this code. (3)

4.2 Define the term, *reclamation*. (3)

4.3 What responsibility does the repair facility have towards the user if the repairer contracts the reclamation to a specialised industry? (1)

4.4 What is required when modifying an enclosure by drilling holes? (1)

4.5 What information is required with regard to job reports of repairs/overhauls? (2)
[10]

QUESTION 5: SANS 10086-2: 2013 THE INSTALLATION, INSPECTION AND MAINTENANCE OF EQUIPMENT USED IN EXPLOSIVE ATMOSPHERES

PART 2: Electrical equipment installed underground in mines

5.1 What is an accredited test laboratory? (6)

5.2 What are the installation requirements for an approved battery-charging bay/station?

List all SEVEN requirements. (8)
[14]

QUESTION 6: SANS 10089-2: 2017 ELECTRICAL AND OTHER INSTALLATIONS IN THE DISTRIBUTION AND MARKETING SECTOR

THE PETROLEUM INDUSTRY

6.1 What is not covered by this standard? (1)

6.2 What should be avoided when making recommendations for minimising static electricity during filling or loading of flammable liquids? (9)
[10]

QUESTION 7: SANS 10142-1: 2020 THE WIRING OF PREMISES

7.1 Give NINE examples of hazardous locations. (10)

7.2 Name the FOUR applicable test reports. (5)
[15]

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QUESTION 8: GENERAL

8.1 Define an *intrinsically safe electrical system*. (4)

8.2 Indicate whether the following statement is TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (8.2) in the ANSWER BOOK.

Conductors for intrinsically safe circuits and non-intrinsically safe circuits shall not be run in the same cable. (1)

8.3 Where colour coding is used, what colour should the intrinsically safe cables be? (1)

8.4 In which zones can equipment marked Ex-ib IIB T4 Gb be used? (1)

8.5 What is the requirement with regard to IA (Inspection Authority) certificates for equipment used in hazardous areas? (3)

8.6 What is required when earthing cable screens of intrinsically safe cables used in hazardous areas? (6)

[16]

TOTAL: 100

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