higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

PROFESSIONAL ENGINEERING PRACTICE
NQF LEVEL 4

2 March 2020

This marking guideline consists of 5 pages.

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QUESTION 1

1.1 1.1.1 True
1.1.2 False
1.1.3 False
1.1.4 True
1.1.5 True

(5 × 1) (5)

1.2 1.2.1
- Recognising a person's good performance, shows that one has respect and admiration for that person.
- One shows acknowledgement for the person's abilities and skills.
- This in turn motivates the person to perform even more and should have a positive effect on other staff members as well.

1.2.2
- Absence from work leads to work not being completed and other workers have to do their own work and the work of the regularly absent person
- while they may not be able to meet their own deadlines.
- This creates a negative environment which could cause conflict amongst workers.

1.2.3
- Incompetence results in incorrect actions and decisions
- which might have negative consequences for other workers and the company.
- This creates a lot of friction amongst workers which mostly leads to confrontations and mistrust. (3 × 3) (9)

1.3 1.3.1
- The habitat of different types of wildlife could be destroyed
- Pollution of rivers
- Pollution of groundwater
- Erosion of soil may take place
- The fertility of the soil could be compromised
- Vegetation could be destroyed (Any 4 × 1) (4)

1.3.2
- Vegetation should be replanted.
- Reshaping of land should be done to blend with surrounding areas.
- Wildlife habitats should be repaired. (3)

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1.4 1.4.1 Engineering Council of South Africa (1)

1.4.2
- Act in a way that protects the environment
- Act in a way that protects the interests of people
- Uphold the good name and reputation of their profession
- Act responsibly towards their clients and employers
- Do their work honestly/responsibly (Any 3 × 1) (3)

[25]

QUESTION 2

2.1 2.1.1
- A design brief is a statement of intent from the customer to the designer
- that will state the problem
- but will not contain enough information to start designing.

2.1.2
- A design proposal is a document that the designer will hand to the customer.
- It will contain all the information necessary to start with the designing process.
- It must include proposed overall contract costs, delivery dates, etc.

(2 × 3) (6)

2.2 2.2.1 F
2.2.2 L
2.2.3 A
2.2.4 N
2.2.5 K
2.2.6 M
2.2.7 E
2.2.8 D
2.2.9 I
2.2.10 C

(10 × 1) (10)

2.3 2.3.1 Cost✓ and maintenance✓ (2)

2.3.2 Their weighting factors are exactly the same (1)

2.3.3 3 (1)

2.3.4 (5 × 5) + (8 × 6) + (7 × 7) + (5 × 3)✓
= 25 + 48 + 49 + 15✓
= 137✓ (3)

2.3.5 Concept 1 (1)

2.3.6 Concept 1 has the higher concept total of Concepts 1 and 2. (1)

[25]

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QUESTION 3

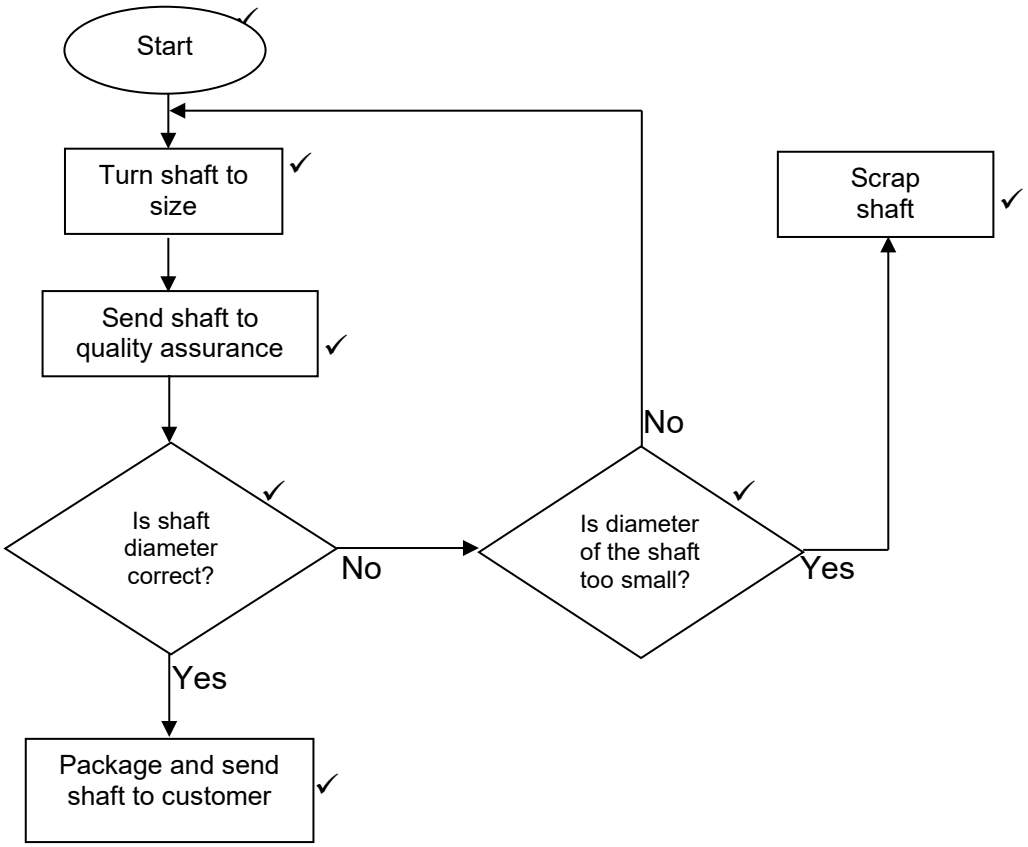
3.1
3.1.1 CRS
3.1.2 CSK
3.1.3 PCD
3.1.4 R
3.1.5 Ø

(5 × 1) (5)

3.2
3.2.1 C
3.2.2 C
3.2.3 D
3.2.4 D
3.2.5 B

(5 × 1) (5)

3.3



(ONE mark for correct use of arrows✓)
(ONE mark for correct use of 'Yes' and 'No'✓)
(If symbols (diamond, rectangular and oval shapes) are used incorrectly, no mark allocated to that specific block) (9)

3.4
3.4.1 3D✓ Clustered✓ Column chart✓ (3)
3.4.2 4 months (1)
3.4.3 January (1)
3.4.4 3 months (1)

[25]

QUESTION 4

4.1 4.1.1 Data processing is the process that changes data✓ into meaningful information.✓

4.1.2 The microprocessor performs the instructions and tasks✓ involved in computer processing.✓

4.1.3 Programs that are loaded into a computer✓ to do specific jobs. It cannot be touched.✓

4.1.4 Hardware are physical components✓ of the computer that can be touched.✓

(4 × 2) (8)

4.2
- Monitor/Screen
- Speakers/Headphones
- Printers
- Plotters
- Projectors (Any 4 × 1) (4)

4.3
- Addition
- Subtraction
- Division
- Multiplication (Any 2 × 1) (2)

4.4 4.4.1 High-level
4.4.2 Java
4.4.3 Low-level
4.4.4 For
4.4.5 While

(5 × 1) (5)

4.5 4.5.1 Multimeters (1)

4.5.2 =AVERAGE ✓ (C4:C7) ✓ (2)

4.5.3
- E8
- E9
- F6

(3)
[25]

TOTAL: 100

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