higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

TRANSPORT OPERATIONS
NQF LEVEL 4

20 November 2024

This marking guideline consists of 9 pages.

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SECTION A

QUESTION 1

1.1 C
1.2 A
1.3 A
1.4 D
1.5 C
1.6 B
1.7 D
1.8 D
1.9 A
1.10 C

(10 × 1) **[10]**

QUESTION 2

2.1 False
2.2 True
2.3 True
2.4 False
2.5 True

(5 × 1) **[5]**

QUESTION 3

3.1 B
3.2 F
3.3 A
3.4 E
3.5 D

(5 × 1) **[5]**

QUESTION 4

4.1 Activities that provide some combination of time, location, form or psychological value e.g. fast food, medical treatment, transport, education etc.

4.2 A collection of ideas which set forth general rules on how to manage a business

4.3 Low-strength large packaging for substances that present a low danger.

4.4 A duty owed to society by the individual responsible for generating waste.

4.5 A principle that assumes that a waste or an identified contaminant of a waste is both highly hazardous and toxic until proven otherwise.

(5 × 2) **[10]**

TOTAL SECTION A: 30

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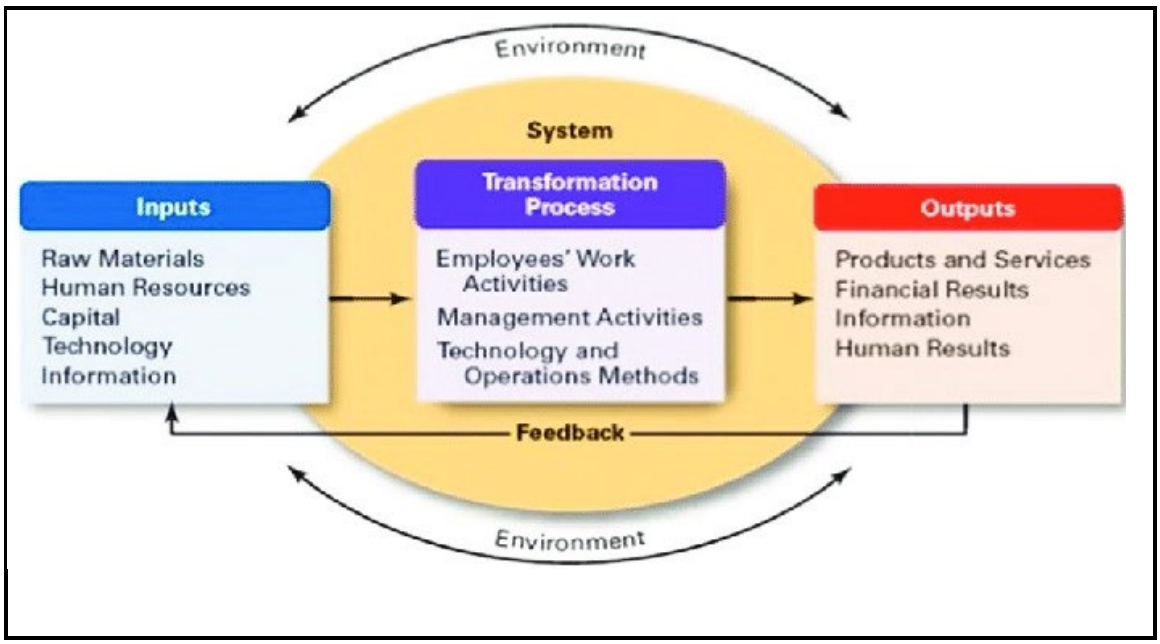
SECTION B

QUESTION 5

5.1



- Any 4 marks for the correct components/processes

e.g. Inputs✓; Transformation Process✓; Outputs✓; Feedback✓, System; Environment; etc.

- Any 4 marks for correct examples under the processes

e.g. *Inputs* – Raw Materials✓, Human Resources Capital, Technology;
Transformation Process – Employees Work Activities✓Management activities, technology and operations methods;
Outputs – Products and Services✓Financial results, information, human results
Feedback – results✓, organisational status etc.

- 1 mark for any relevant drawing/model✓

(9)

5.2

- Effective and efficient management and planning of the sector ✓will significantly influence the economic development and social well-being of the country.✓
- Since the purpose and role of effective transport system is to promote the growth of the economy,✓ transport management and planning are strategic importance in bringing together supply and demand.✓
- When national and international trade is hampered by transport services that are unreliable, slow obstructed, or otherwise ineffective✓, the progress of the economy will be hampered.✓
- Another strategic factor to be considered is that although transport services form an important component in ensuring the well-being of contemporary society and the success of many businesses, it may also give rise to negative externalities. (Any 6 × 1) (6)

5.3
- Formulate human resource management strategies, policies and plans
- Advise and assist managers with employee recruitment, training and development programmes
- Maintain personnel records and various personnel-related systems
- Monitor employment costs and productivity levels
- Coordinate occupational health and safety programmes and practices
- Apply redundancy and other employee retrenchment policies when and where necessary
- Develop and implement performance management systems to plan, appraise and improve individual and team performance
- Represent the business in negotiations with labour unions
- Establish and manage effective workplace relations
- Manage change processes within the company
- Manage rehabilitation/return to work programmes (Any 4 × 2) (8)

5.4
- The sequence of customers/places to visit
- The shortest path to follow to minimise travel costs and times (2)

5.5 Road✓
- It will be good but can be improved by escorting the vehicle carrying high value products ✓

Rail✓
- It is not safe to transport high value items, except in cases where theft is not easily possible, like in transporting of cars. ✓

Sea✓
- It is relatively safe, but more often used for transporting of large containerised goods where theft is not easily possible. ✓

Air✓
- It is very convenient for high value products, and because of limited losses it is easy to track and trace. ✓

Pipeline✓
- It can be used for a very limited range of products. ✓

(Any 5 × 2) (10)
[35]

QUESTION 6

6.1 It is the process by which the activities of an organisation, particularly those regarding planning and decision-making,✓ are distributed or delegated away from a central, authoritative location or group✓ and given to smaller factions within it.✓ (3)

6.2 6.2.1 The security and safety of both passengers and goods while in transit are important factors that need careful consideration by business owners.
The level of safety and security needed is dependent on type of business, ✓ but to most businesses transport safety relates to the business' bottom line. ✓
Goods lost in transit, whether due to accidents, hijacking, pilfering or poor in-transit management, pose a serious threat to business operations.

The influence that transport safety has on industries such as travel and tourism is often highlighted when organisations, and even countries, warn their citizens to take care in travelling around the country.

Citizen from countries where they are used to safe, secure and reliable transport systems may think twice when considering a travel or business trip to a country with less reputable transport system.
(Any 2 × 1)

6.2.2 With improved transport systems, many businesses have to deal with competition from a wider range of competitors. ✓
This increased competition arises not only from local and domestic companies, but also increasingly from foreign markets. ✓

Improved transport and connectivity give South African-based businesses greater access to foreign markets, increasing competition and choice in the home market from foreign-based producers. International trade also provides local businesses with the opportunity to exploit economies of scale better, driving down their costs and prices and thereby benefiting domestic consumers in the process. (Any 2 × 1)
(2 × 2) (4)

6.3
- The in-transit care needed when transporting the goods
- The density of the goods i.e. the mass-to-volume ratio
- Size and divisibility, which can be determined by the physical dimensions of a load
- Stowage ability and ease of handling, that can be determined by the shape of the goods.
- Potential liability of goods that can be influenced and determined by their value-to mass ration, fragility, susceptibility to theft and their potentially hazardous characteristics. (4 × 2) (8)

6.4
- Mode of transport
- Type of product
- Transit capital
- Obsolescence
- Packaging
- Insurance
- Breakages
- Pilferage, hijacking, theft
- Deterioration
- Geography
- Economies of scale
- Energy
- Infrastracture
- Surcharges,fees,permits,tolls
- Regulations (Any 5 × 1) (5)

[20]

QUESTION 7

7.1 7.1.1 Truck-mounted mobile crane (1)

7.1.2
- Abnormal load in terms of dimension:✓

A vehicle/combination of vehicles is abnormal in terms of dimensions when any one of its dimensions like length, width, height, overhangs, load projections, wheelbase etc. ✓ exceeds the legal limitations:✓ (no need to have all the dimensions)

whereas✓

- Abnormal load in terms of mass:✓

When the allowable mass of the vehicle/combination of the vehicles, or one or more axle groups✓exceeds the legal limitations ✓ (7)

7.1.3
- The capacity of the vehicles as rated by the manufacturer
- The load which may be carried by the tyres
- The damaging effect on road pavements
- The structural capacity of bridges and culverts
- The power of the prime movers
- The load imposed on the driving axles
- The load imposed on the steering axles (Any 3 × 2) (6)

7.2
- Flags must be bright red in colour
- They must indicate the overall length and width of the vehicle or load
- Be securely attached to the load on the vehicle
- Be placed at the extreme corners of the vehicle or load
- Measure at least 600 mm × 600 mm
- Be clean and free to flutter (Any 4 × 2) (8)

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7.3
- The person responsible for monitoring the operation will perform all the intricate calculations relating to mass and dimensional abnormalities, bridge and infrastructure risks✓✓
- will also be responsible for aspects such as:
- Weight distribution methods and materials and surface load✓✓
- Cargo environmental and carbon footprint✓✓
- Vehicle structure and load-bearing capacity✓✓
- Forces on cargo, vehicle acceleration implication, rolling period
- Securing methods and material and securing calculations
- Stability calculations for high and wide loads
- Special considerations
- Official monitoring of abnormal loads is performed by the issuing authority in collaboration with the relevant traffic authority responsible for escort services.
- It may also involve departmental engineers to monitor the damage that may be caused to road surfaces, bridges and culverts.✓
- Telkom and Eskom will also have to monitor their infrastructure to ensure that it will not cause a safety risk during the transportation of loads exceeding 5,5 m and 5,8 m in height.
- They will also have to escort a vehicle in cases where the load is extremely high and the route cannot be cleared by either of them.✓ (Any 4 × 2) (8)

[30]

QUESTION 8

8.1 8.1.1 Flammable liquid.✓
is a liquid which can be easily ignited in air at ambient temperatures,✓ i.e. it has a flash point at or below nominal threshold temperatures defined by a number of national and international standards organisations.✓ (3)

8.1.2 Toxic materials ✓ and infectious substances ✓ (2 × 1) (2)

8.1.3
- Air bag inflators/modules
- Asbestos
- Lithium batteries
- Expandable polystyrene beads
- Acetaldehyde ammonia
- Ammonium nitrate-based fertilizer
- Items with anaesthetic properties
- Solid dry ice (Any 3 × 1) (3)

8.1.4 Class 1 (1)

8.2
- Steel drums:it is used for flammable liquids and poisons
- Plastic drums:it is used for caustic or corrosive substances which would corrode metal containers
- Heavy, insulated casks: it is used for highly radioactive goods
- Insulated flasks: it is used to contain extremely low temperature liquids
- Cylinders:it is used for compressed gas (5 × 2) (10)

8.3
- The interpretation and implementation of the instructions on a TREM card
- General duties of the driver before proceeding on a route, concerning specifically but not limited to, the condition of the vehicle, the documents to be kept in the vehicle, instructions regarding the route to be taken, warning signs and devices to be displayed or stored in the vehicle, the correct type and number of fire extinguishers to be fitted to the vehicle and protective clothing to be used.
- General behaviour expected of the driver on the route, such as planning for stops for deliveries or the checking of tyres and vehicle, and the procedure to be followed in the event of stops, period of driving allowed, action to be taken in the event of an incident.
- General procedures to be followed by the driver on reaching his or her destination
- General procedures to be followed when loading and offloading dangerous goods (Any 3 × 2) (6)

8.4 8.4.1 When defining the scope of the emergency plan, it is important to remember that the document aims to acquaint all occupants of facilities or vehicles with the procedures to be implemented during an emergency, and must therefore provide detail on standard operational guidelines to be followed during the various stages of an emergency.

8.4.2 Must follow a logical sequence, be easy to read and be included at the beginning of the plan.

8.4.3 A clear and simple definition of what constitutes an emergency on the company's site and on the road, and the various levels of emergencies which are possible, sholud be provided.

8.4.4 The types of emergencies should be clearly defined, e.g. fire, explosions, spills, gas leaks, civil disturbances, etc.

8.4.5 The plan needs to have appropriate evacuation procedures which cater for both visitors to the site, permanent site staff, driver. The accounting for staff and site visitors is a critical task during an emergency and needs to be given a high priority within the plan.

(5 × 2) (10)
[35]

TOTAL SECTION B: 120
GRAND TOTAL: 150

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