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Occupational Certificate: Road Traffic Safety Officer
SAQA ID: 101875

External Integrated Summative Assessment

Exemplar

MEMORANDUM

August 2021

EXAMINER: SD Maboeane INTERNAL MODERATOR: PH Plaatjies

EXTERNAL MODERATOR/S:

Duration: 3 hours **Total: 100**

ROAD TRAFFIC MANAGEMENT CORPORATION

OC: Road Traffic Safety Officer
External Integrated Summative Assessment

~~**SAQA ID: 101875 Exemplar August 2021**~~

Duration: 03 Hours **Total Marks: 100**

Instructions to the Learners:

- This is a **closed book** assessment and covers all the Exit Level Outcomes of the qualification with SAQA ID:101875
- This paper consists of three (3) **Compulsory** sections
- Each Section addresses a separate Exit Level Outcome
- The duration of this assessment is **three (3) hours,** and the question paper is out of **100 marks**
- Write clearly and neatly with a **black pen** only; and
- All other instructions as provided for in the approved assessment answer script apply.

Section A: Design, develop and implement a road safety plan to promote safe road usage (Exit Level Outcome 1)

Question 1

1.1 Explain what a road safety plan, and remarks on the benefits thereof. (5)

Road safety plan is a comprehensive plan for the **prevention (1) and protection (1)** of road accidents by **all road users** such as motorists, passengers, pedestrians, and cyclists. (1)
Road safety plan is necessary to establish a cohesive approach to **eradicate road traffic crashes** (1) and **to lower the rate of fatalities** encountered on our roads (1).

1.2 List and explain the main elements of a road safety plan. (15)

According to Lacombe and Arason (Lacombe, 2013) a road safety plan should have the following elements:

(a) Safe road traffic users: (1)

The road traffic users of all kinds should be featured in a plan to cater to their needs and desires. (1)

(b) Safe vehicles: (1)

The idea of safe vehicles should be basically referring to road-worthy vehicles of all kinds including motorcycles. (1)

(c) Safe roads and communities: (1)

The roads and communities should link engineering and road users a means of decreasing road traffic related crashes. (1)

(d) Research and data: (1)

The research process should yield the data based on which all implementations can be implemented (1). The data collected should assist all role players in taking decisive interventions (1), for example, the data related to Engineering (1), Education (1), Enforcement (1) and the Evaluation (1) process of all interventions.

(e) Education and awareness: (1)

The education and awareness should link will all interventions as indicated above, as these is a basic road traffic safety prerogative (1). **[Any 15]**

1.3 Design and develop a road safety plan for your province/authority indicating the intervention(s) that you will put in place for a wide range of vulnerable road users. (10)

Mark allocated for each vulnerable road user mentioned (1 x 5 = 5);

- Pedestrians (1)
- Scholars (1)
- Cyclists (1)
- Passengers (1)
- The elderly (1)
- Motorists (1)

(Any 5)

And an explanation of what intervention could be used to ensure road safety for each of the below vulnerable road users:

- Pedestrians - The speed limit to be appropriate for the pedestrian sensitive areas (1) OR similar wording.
- Scholars – Appropriate equipment are given to scholar patrollers to man the intersection/s within the school vicinity - (1) OR similar wording – the assessor to be considerate.
- Cyclists - Appropriate consideration are given to the needs of cyclists (1) - OR similar wording – the assessor to be considerate.
- Passengers – The safety belts to be worn by all passengers (1), OR similar wording – the assessor to be considerate.

- The elderly - There is adequate provision made for elderly, disabled and baby carriages (1), OR similar wording – the assessor to be considerate

- Motorists – The drivers should be aware of the presence of the intersection and the control thereof in time (1), OR similar wording – the assessor to be considerate.

(Any 5)

1.4 In November 1998, Tingvall, then working with the Monash University Accident Research Centre (MUARC) introduced his new paradigm for injury prevention, namely Vision Zero, at the Road Safety Research, Policing and Education conference in Wellington New Zealand.

However, prior to Tingvall's arrival, several researchers were already highlighting flaws and questioning the moral ethics of the road transport system. Job et al in 1989 noted that "*many fatalities occur not because of driver error but because of driver error combined with a negligent designed road system and a politically acceptable but technically substandard vehicle. Most of us would not condone a legal system which handed out the death penalty (or permanent disability) for "crimes" such as the misjudging of the camber of the road or driving when slightly drowsy, so we should not accept a politically determined traffic system which metes out such penalties*".

(Source: Mooren, *et al*., 2011:2)

Taking the above excerpt into account, how will you implement a road safety plan towards to have a maximum/desired impact? Your discussion should refer to the principles of the Safe System Approach. (10)

Note to Assessor: Consider the following key words or similar wording when marking: Description of the safe system approach (1), Sustainable safety (1), Vision zero (1), The right speed limits to be set (1), Adjustment of speed limits when necessary, proper collection of crash details so problems can be spotted and tackled (1), Better control of licensing of vehicles and drivers (1), Good laws supported by policing (1) and the courts (1), importance of road safety education (1), and good after-crash care (1), Road users need to know the laws and that if they break the laws (1) stiff penalty (1). **[Any 10]**

Sub-Total= 40

Section B: Conduct a road related infrastructure audit/assessment (Exit Level Outcome 2)

Question 2

2.1 The professional engineers plan and design the roads in consultation with all relevant stakeholders to ensure that the expected outcomes as envisaged by the project owners are achieved.

Choose the correct combination of the outcomes of the road infrastructure: (1)

A. Engage; Road design; Liveable communities; Safer roads.

B. Safer roads; Efficient and effective transport; Fair access and amenity; Environmental management.

C. Safer communities; Industry competitiveness and growth; Lovable communities; Environmental conservation.

D. Drainage design; safer communities; Liveable communities; Efficient and effective transport.

2.2 The traffic safety officer will typically act as: (1)

Select one:

A. Designer or as a road safety lead auditor

B. Client or as a road safety audit team member.

C. Observer or as a specialist advisor member

D. Consultant or as a group leader

2.3 Forgiving roads **depend on how the roadside is designed and equipped**. However, the roadside is also a component of the driver's field of view, which governs the driver's behavior. a well-designed field of view helps enhance road safety. In other words, the roadside should forgive the driver his/her error by reducing the severity of run-off-road accidents.

Single or point objects placed within the clear zone can represent a hazard for a vehicle that is out of control and leaves the carriageway. Study the above images and identify three categories of common treatment solutions and two examples for each to make roadsides safer. (9)

Removing and Relocating Obstacles. (1)

- The Clear Zone concept. (1)
- Arrester beds in lane diverge areas. (1)
- Safe plantation. (1)
- Roundabouts. (1)

(Any 2 under this category)

Modifying Roadside Elements. (1)

- Breakaway devices. (1)
- Ditch and slope treatments. (1)
- Route-Based Curve Treatments (1)
- Crashworthy masonry structures. (1)
- Shoulder modifications. (1)
- Modification of retaining walls and rock cuts. (1)

- Safety barrier terminals. (1)
- Safety barrier transitions. (1)

(Any 2 under this category)

Shielding Obstacles. (1)

- Rigid barriers. (1)
- Semi-rigid barriers. (1)
- Flexible barriers. (1)
- Temporary safety barriers. (1)
- Underriders. (1)
- Kerb-barrier combinations. (1)
- Impact attenuators. (1)

(Any 2 under this category)

[9]

2.4 The concept of Forgiving Roads has the objective of minimizing the consequences of driving errors, rather than preventing them. Identify three (3) categories of obstacles that may be found on roadsides and which may represent a risk to vehicle occupants in the event of a driver losing control of the vehicle and provide three (3) examples under each category. (9)

Continuous Hazards, (1) including:

- Embankments and slopes (1)
- Ditches (1)
- Road restraint systems (1)
- Kerbs (1)
- Permanent water bodies (1)
- Pavement edge (1)

(Any 3 under this category)

Dynamic roadside hazards, (1) including:

- Bicycles (1)
- Pedestrians (1)
- Parking (1)
- Temporary advertising signs on timber posts or trailers (1)

(Any 3 under this category)

Single Fixed Objects, (1) including:

- Trees. (1)
- Rocks and boulders (1)
- Utility poles and lighting posts (1)
- Safety barrier terminals and transitions (1)
- Headwalls (1)
- Headstones (1)
- Fencing at an angle to travel direction, within the Clear Zone (1)

(Any 3 under this category)

2.5 Compile a checklist or toolkit consisting of five items for use in conducting the road infrastructure audit. Hint, your checklist should contain an *Item, Criteria, Y/N, Remarks.* Each item should at least have one criterion as shown below. (10)

Note to the assessor: Allocate one mark per item and another for the criterion.

Item	Criteria	Yes	No
Road layout	Is the design consistent with the function of the road?		
	Can vehicles safely use this road to maneuver, pass etc?		

Item	Criteria	Yes	No
Pedestrian (1)	Is the speed limit appropriate for the pedestrian sensitive areas? (1)		
	Is adequate provision made where applicable for elderly, disabled and baby carriages? (1)		
Traffic signals (1)	Are all the respective aspects visible from an appropriate distance on each approach? (1)		
Traffic control (1)	Is the traffic control provided by the road signs and markings satisfactory? (1)		
Warnings (1)	Are there adequate warnings on the approaches of intersections that have high speed approach? (1)		
Cyclists (1)	Has appropriate consideration been given to the needs of cyclists? (1)		
Clear zone and roadside hazards (1)	Is a clear zone provided next to the roadway for vehicle recovering if necessary? (1)		
Roadside hazards (1)	Are there any of the following hazards that can be dangerous to a vehicle travelling in the roadway or that leaves the roadway? (1) • Loose construction debris (1) • Construction equipment with no temporary construction barriers (1) • Sudden drops along the roadway edge (1)		

(Any 10)

2.6 By referring to the above compiled checklist, think of a public road within your vicinity and draft a road assessment report on how best it can be improved to be more 'self-forgiving'. (10)

Note to Assessor: Consider the following key words or similar wording when marking: Name/description of the road (1), Importance of road safety on social and economic sectors (2), Hazardous objects (1), What can be done to prevent fatal crash (1), At least two

programs identified to boost enforcement (2), Identify road signs and road markings that require to be replaced and repainted, etc. (2), Conclusion/recommendations (1)

Sub-Total= 40

Section C: Conduct research project and generate an abstract (Exit Level Outcome 3)

Question 3

3.1 Research projects have distinct characteristics depending on the complexity and duration of the project. List five such distinct characteristics. (5)

ANSWER:

1. Research originates with a question or problem.
2. Research requires clear articulation of a goal.
3. Research requires a specific plan for proceeding.
4. Research usually divides the principal problem into more manageable subproblems.
5. Research is guided by the specific research problem, question, or hypothesis.
6. Research accepts certain critical assumptions.
7. Research requires the collection and interpretation of data in an attempt to resolve the problem that initiated the research.
8. Research is, by its nature, cyclical or, more exactly, helical.

(Any 5)

3.2 Read the following scenario and then answer the questions that follow:

A Road Safety Officer (RSO) from RTMC started to use interactive white board lessons during the grade 12 driving license education program at the local high school. She decided to determine how the Grade 12 learners experience the interactive whiteboard lessons. She compiled a Likert-Type/Scale questionnaire and approached the principal of the school and the district director for permission to conduct this study at her selected school. Once she has done this, she wrote a letter to the learners and to their parents in which she explained the project in detail.

In addition to the letter, she verbally explained the project to the learners. She also stressed that participation is voluntarily, that learners' identities will not be revealed when she writes up findings of her study, and that learners can withdraw from the project at any time if they so wish. She asked the learners to assent to participation and she asked their parents to consent. Both learners and parents signed assent/consent forms.

Forty-nine of the learners agreed to participate and returned the necessary forms. The Road Safety Officer met with these learners at a prearranged time after school and asked them to complete the questionnaire regarding the project.

3.2.1 Identify and explain the research design used in the scenario, use evidence from the scenario to substantiate your answer **(2)**

3.2.2 Which worldview is associated with this research design? **(1)**

3.2.3 Which strategy of inquiry is used in this study? **(2)**

3.2.4 Which method of data collection is used in this study? **(1)**

3.2.5 Formulate the aim for the research in the scenario. **(2)**

3.2.6 Formulate a research question for the research in the scenario **(2)**

3.2.7 Provide five ethical considerations that the road safety officer as a researcher adhered to. **(5)**

3.2.1 Qualitative research design. (1) Key to qualitative research design lies with the idea that meaning is socially constructed through interaction (1)

N.B: The assessor to consider the following key words in the learners' substantiation of the reason why the research design is qualitative:

Socially constructed, interaction, world, interpretive, interpretations, context, time, social world

3.2.2 Interpretivism/Constructivism (1)

3.2.3 A qualitative exploratory case study (2)

3.2.4 Questionnaire (1)

3.2.5 The assessor to mark the learner's answer if it has similar wording as indicated below and provide marks accordingly:

"Exploring the interactive whiteboard lessons in grade 12 learners' within the context of road safety". (2)

3.2.6 The assessor to mark the learner's answer if it have similar wording as indicated below and provide marks accordingly:

"How do grade 12 learners experience the whiteboard lessons within the contecxt of road safety?" (2)

3.2.7

- ✓ Informed consent by the parents
- ✓ Informed assent by the learners/participants
- ✓ Anonymity of participants
- ✓ Privacy of the participant/learners
- ✓ Confidentiality of the participant/learners
- ✓ Avoidance of harm
- ✓ Transcriptions of the interview
- ✓ Recording of the interviews

(Any 5)

Sub-Total = 20

PAPER TOTAL = 100 Marks