



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF COMMERCE, HUMAN SCIENCES AND EDUCATION

DEPARTMENT OF MARKETING, LOGISTICS AND SPORT MANAGEMENT

QUALIFICATION : BACHELOR OF TRANSPORT MANAGEMENT	
QUALIFICATION CODE: 07BTRA	LEVEL: 6
COURSE NAME: LAND TRANSPORT SAFETY AND INFRASTRUCTURE CONSIDERATIONS	COURSE CODE: LTI611S
SESSION: JUNE 2025	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINERS	MS. MARTHA POLLA (FM) MS. ELINA LUMBU (PM) MS DIINA HAIKWIYU (EF) MR. BONNY CHICKEN (DI)
MODERATOR:	MR. VETIRAIJE TJIPOMBO

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL Questions from Sections A and B, and ANY THREE (3) Questions from Section C2. Write clearly and neatly.3. Number the answers clearly.

THIS QUESTION PAPER CONSISTS OF 7 PAGES (Including this front page).

SECTION A:

ANSWER ALL QUESTIONS

Question 1:

State whether the following statements are TRUE OR FALSE, Each correct answer carries 2 marks

- 1.1 The Safe System Approach assumes that no crash is acceptable and that all road users must take sole responsibility for their safety. [2 marks]
- 1.2 Crash severity is influenced only by the speed of the vehicle involved. [2 marks]
- 1.3 Human error is considered inevitable in the Safe System philosophy. [2 marks]
- 1.4 Evaluating the effectiveness of a road safety programme is not necessary if crash numbers decline. [2 marks]
- 1.5 Transport safety data should be timely, accurate, complete, and consistent to be effective in planning. [2 marks]
- 1.6 The Domino Theory focuses primarily on system-based causes of crashes. [2 marks]
- 1.7 In developing countries, the majority of road crash fatalities involve private vehicle occupants. [2 marks]
- 1.8 A roundabout is an example of a road design feature that applies Safe System principles by reducing conflict speed. [2 marks]
- 1.9 Mixed-use development increases car dependency and crash risk in urban areas. [2 marks]
- 1.10 Effective post-crash response is not a key component of comprehensive road safety strategies. [2 marks]

Sub Total 20 marks

SECTION B:

ANSWER ALL QUESTIONS

Question 2: Select the correct answer, Each correct answer carries 2 marks

2.1 Road Safety Management Systems (RSMS) emphasize: [2 marks]

- A. Proactive risk mitigation
- B. Organizational integration
- C. Safety performance monitoring
- D. Accountability and culture
- E. All of the above

2.2 The philosophy of “forgiving infrastructure” belongs to which principle? [2 marks]

- A. Shared responsibility
- B. Safety is proactive
- C. Humans are fallible
- D. Redundancy is crucial
- E. All of the above

2.3 In Namibia, which law governs railway safety? [2 marks]

- A. Petroleum Products Act
- B. Labour Act
- C. Transport Services Act
- D. Explosives Act
- E. All of the above

2.4 The Public Health Approach includes which of the following? [2 marks]

- A. Surveillance
- B. Risk Factor Identification
- C. Implementation
- D. Intervention Evaluation
- E. All of the above

2.5 Ergonomics in road safety means: [2 marks]

- A. Adapting the system to human limitations
- B. Focusing only on driver training
- C. Designing cars with minimal visibility
- D. Limiting automation
- E. None of the above

2.6 The 2nd Decade of Action for Road Safety aims to: [2 marks]

- A. Eliminate all road crashes
- B. Prevent 50% of road traffic deaths and injuries by 2021
- C. Prevent 50% of road traffic deaths and injuries by 2030
- D. Prevent 25% of road traffic deaths and injuries by 2030
- E. All of the above

2.7 Transit-Oriented Development (TOD) encourages: [2 marks]

- A. Walkability
- B. Reduced car dependency
- C. Mixed-use planning
- D. Dense development near transit
- E. All of the above

2.8 Which Safe System principle focuses on the inevitability of human error? [2 marks]

- A. Shared responsibility
- B. Safety is proactive
- C. Humans are vulnerable
- D. Humans make mistakes
- E. All of the above

2.9 Which is a major cause of rail accidents in Namibia?

[2 marks]

- A. Human error
- B. Ageing infrastructure
- C. Poor maintenance
- D. Lack of advanced technology
- E. All of the above

2.10 What is the main difference between a road hazard and a road risk?

[2 marks]

- A. Risk is only post-crash
- B. Hazard is quantifiable; risk is not
- C. Hazard is a potential source of harm; risk is the likelihood of harm
- D. Risk is independent of hazard
- E. None of the above

Sub Total 20 marks

SECTION C:

ANSWER ANY THREE (3) QUESTIONS, EACH QUESTION CARRIES 20 MARKS

Question 3:

On Thursday evening, 5 September 2013, a tragic road crash occurred at Field's Hill, Pinetown, in the province of KwaZulu-Natal, South Africa. A heavy-duty truck descended the steep hill and failed to stop at a red traffic light. The truck collided with four minibus taxis and multiple private vehicles at a busy intersection during peak traffic hours.

The crash resulted in:

- 27 fatalities, including children
- Over 80 injuries
- National outrage and widespread media coverage

The truck driver, Sanele Goodness May, was only 23 years old and held a foreign driver's license. He claimed the brakes of the truck had failed, and despite his attempts, he was unable to stop the vehicle before reaching the intersection. Video footage showed the truck speeding uncontrollably before slamming into the vehicles.

The driver was arrested immediately. He later pleaded guilty to culpable homicide, reckless and negligent driving, and operating without a valid professional driving permit in South Africa. He was sentenced to 8 years in prison.

Using the Haddon Matrix, analyse the 2013 Pinetown truck crash by identifying contributing factors and proposing interventions to prevent similar incidents. [20 marks]

Question 4:

The City of Windhoek is planning safety improvements at the Havana Four-Way Intersection, a location known for high pedestrian activity and informal taxi operations. Two transport planning teams are debating whether to carry out a Road Safety Audit (RSA) or a Road Safety Inspection (RSI) as part of the upgrade planning.

Explain the differences between a Road Safety Audit and a Road Safety Inspection in terms of their objectives, timing, and methodology, and recommend the most suitable option for the Havana Four-Way intersection. [20 marks]

Question 5:

The Ongos urban extension, located on the outskirts of Windhoek, is currently under development. As part of its planning strategy, the project team is considering implementing a **mixed-use development model** to guide land use and transport integration.

Discuss how mixed-use development can contribute to safer and more sustainable transport systems. [20 marks]

Question 6:

Reliable transport safety data forms the foundation for effective planning and decision-making in road safety management.

Explain why transport safety data is essential in road safety management. [20 marks]

Question 7:

Rail transport systems are exposed to a variety of safety risks, many of which result in serious accidents affecting passengers, workers, and the public.

Discuss the five major types of rail accidents. [20 marks]

Sub Total 60 marks

TOTAL 100 MARKS

END OF QUESTION PAPER