



# TECHNICAL UNIVERSITY OF MOMBASA

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SCHOOL OF BUSINESS

DEPARTMENT OF MANAGEMENT SCIENCE

**UNIVERSITY EXAMINATION FOR:**

**BACHELOR OF COMMERCE**

**TRANSPORT AND LOGISTICS**

**BTL4400: HANDLING DANGEROUS GOODS**

**END OF SEMESTER EXAMINATION**

**SERIES: DECEMBER 2016**

**TIME: 2 HOURS**

**DATE: 21 Oct 2016**

## **Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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## **Question ONE**

- a) Explain what is meant by hazardous goods (2marks)
- b) All the materials or substances classified as dangerous or hazardous may be categorized into nine classes. Orderly describe the first five classes (18 marks)
- c) Discuss the various product natures influencing their packaging for safe custody and handling considerations (10marks)

## **Question TWO**

- a) Dangerous materials require extra keenness and care in handling. Explain any five precautions to be observed while handling dangerous goods (10marks)
- b) Explain any five reasons for segregation of materials (10marks)

### **Question THREE**

- a) Briefly describe any five factors that determine the type of handling equipment for dangerous goods (10marks)
- b) Legislature or government control and regulations is one of the factors to be considered when transporting dangerous goods. Discuss any other five factors taken into consideration when freighting dangerous goods (10marks)

### **Question FOUR**

- a) Discuss any five characteristics of a good containerized vehicle used in freighting hazardous goods (10marks)
- b) Discuss any five features of a good transport mode used in freighting dangerous goods (10marks)

### **Question FIVE**

- a). Critically examine any five carriage requirements in the certification of vehicles carrying dangerous goods (10marks)
- b) Describe any five areas of certification of vehicles carrying dangerous goods (10marks)

### **Marking scheme**

#### **Question one a: The meaning of hazardous goods**

Hazardous goods are those that pose health and security hazards to human race, animals and environment in general (2marks)

#### **Question one b: First five Classification of hazardous cargo**

Class one- Explosives (2marks)

Class two- Gasses (2marks)

Class three- Inflammable liquids (2marks)

Class four- Inflammable solids (2marks)

Class five- Oxidizing substances (2marks)

**Question one c: product nature**

1. forms (2marks)
2. Deterioration (2marks)
3. Product density (2marks)
4. Perish ability (2marks)

**Question two a: precautions to be observed while handling dangerous materials**

1. Operative staff must be thoroughly trained in safety and health administration (2marks)
2. The hazardous materials transportation uniform safety Act must be strictly adhered to (2marks)
3. Only properly designed and certified transport vessels should be used in freighting such materials (2marks)
4. Operative staff must wear full safety and healthy gear (2marks)
5. Avoid staking hazardous materials on top of other materials (2marks)

**Question two b: reasons for segregation of materials**

1. Avoid mixing (2marks)
2. Ensuring proper storage (2marks)
3. Easy identification (2marks)
4. Central fire outbreak/damage (2marks)
5. Concentrating saving efforts (2marks)

**Question three a: factors that determine the type of handling equipment for dangerous goods**

1. Storehouse design and layout (2marks)
2. Distance between source and destination (2marks)
3. Qualifications and experience of staff (2marks)
4. Nature of the materials to be handled (2marks)
5. Availability of funds to buy and maintain the type of equipment chosen (2marks)

**Question three b: factors considered when transporting dangerous goods**

1. Legislature or government regulations and controls (2marks)
2. Mode of transport to be used in transporting such materials (2marks)
3. Safety and security measures required (2marks)
4. Staff skills and competencies (2marks)
5. The prevailing weather conditions (2marks)

**Question four a: features of a good transport mode to be used in freighting hazardous goods**

1. Sufficiently strong to withstand the weight (2marks)
2. Sufficiently durable to withstand wear and tear (2marks)
3. Easy to operate (2marks)
4. Able to contain planned capacity (2marks)
5. Able to fit the storage space (2marks)

**Question four b: characteristics of a good containerized vehicle used in freighting dangerous goods**

1. Cost effective (2marks)
2. Safer and more secure (2marks)
3. Speedy (2marks)
4. User friendly (2marks)
5. Reliability (2marks)

**Question five a: Five carriage requirements in the certification of vehicles carrying dangerous goods**

1. Dangerous goods must not be carried unless a consignor's declaration has been received and the operator has ensured that the goods are fit for carriage (2marks)
2. Drivers must not carry any unauthorized passengers on vehicles carrying dangerous goods (2marks)
3. Drivers must not open any packages containing the dangerous goods unless authorized to do so (2marks)
4. No matches, lighters or anything else capable of producing a flame or sparks must be carried on the vehicle carrying dangerous goods. (2marks)
5. Foodstuff must not be carried in the vehicle (2marks)

**Question five b: Five areas of certification of vehicles carrying dangerous goods**

1. Packaging (2marks)
2. Marking of packages (2marks)
3. Carriage requirements (2marks)
4. Driver training (2marks)
5. Loading and unloading (2marks)