



TECHNICAL UNIVERSITY OF MOMBASA

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.

Question ONE

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

Question TWO

- a) Hazardous materials require extra keenness and care in handling, storing, transporting and disposing off. Discuss the various precautions to be observed while handling hazardous materials (10marks)
- b) In a big store the materials kept must be separated/segregated and put in different places/ parts. Accordingly explain any five reasons for separation of materials (10marks)

Question THREE

- a) The college of material handling education (USA) has developed a list of material handling principles which are used in laying out the procedure of handling both dangerous and non dangerous materials. Briefly describe any five such principles (10marks)
- b) Before moving out dangerous materials out of the premises for onward transportation to various destinations, it is important to consider some factors. Discuss any five such factors

Question FOUR

- a) Highlight any five safe ways of handling hazardous materials (10marks)
- b) Discuss any five characteristics of a good material handling equipment (10marks)

Question FIVE

- a) Offloading dangerous products requires some procedures to be highly observed. Critically examine any five such procedures (10marks)
- b) A dangerous goods safety adviser is legally required in all firms that transport and handle dangerous goods. Describe any five statutory responsibilities of such an officer (10marks)

Marking scheme

Question one a: The meaning of dangerous goods

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

Question one b: 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)

Class six- Poisonous substances (2marks)

Class seven- Radioactive substances (2marks)

Class eight- Corrosives (2marks)

Class nine- Miscellaneous dangerous substances (2marks)

Question one c: product features/characteristics

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

Question two a: precautions to be observed while handling hazardous 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 separation 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: materials handling principles

1. Planning (2marks)
2. Standardization (2marks)
3. Work principle (2marks)
4. Ergonomic (2marks)
5. Unit load (2marks)

Question three b: factors considered when transporting hazardous 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: safe ways of handling hazardous materials

1. Ensure that transport vessels are securely fastened and provided with security seals (2marks)
2. Ensure that transport vessels strictly follow designated routes (2marks)
3. Ensure that transport vessels only move during non busy working hours (2marks)
4. Ensure that transport vessels avoid residential and other related areas (2marks)
5. Ensure that such materials are not handled together with other types of materials (2marks)

Question four b: characteristics of good material equipment

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 five a: Procedures in offloading dangerous products

1. Ensure that transport vessels are securely fastened and provided with security seals (2marks)
2. Ensure that transport vessels strictly follow designated routes (2marks)
3. Ensure that transport vessels only move during non busy working hours (2marks)
4. Ensure that transport vessels avoid residential and other related areas (2marks)
5. Ensure that such materials are not handled together with other types of materials (2marks)

Question five b: Duties of a dangerous goods safety adviser

1. Monitoring compliance with law on the transport of dangerous goods (2marks)
2. Advising the employee on the transport of dangerous goods (2marks)
3. Preparing an annual report for their employer on the firms activities on the transport of dangerous goods (2marks)
4. Protecting the property and environment from the risk of damage resulting from the transport of dangerous goods (2marks)
5. Monitoring procedures for complying with the rules and regulations governing the identification of dangerous goods being transported (2marks)