



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2020/2021

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE (CONSTRUCTION MANAGEMENT)

BCM 407: CONSTRUCTION SAFETY MANAGEMENT

DATE: Tuesday, 6th April 2021

TIME: 11.00a.m-1.00p.m

INSTRUCTIONS:

You should have the following in the examination room:

Answer Booklet

Stationary

Section **ONE** is **COMPULSORY**

Answer any **TWO** questions **from** section **TWO**

Maximum marks for each part of a question are shown

SECTION One-Compulsory (30marks)

1. (a) Define the following

- (i) Acute Exposure
- (ii) Job safety Analysis
- (iii) Material Safety Data Sheet(MSDS)
- (iv) Occupational Safety
- (v) Hazard Communication
- (vi) Primary container (6marks)

(b) Distinguish between the terms Risk and Hazard as used in Occupational Health and Safety. (2marks)

(c) Citing examples, distinguish between the terms "Unsafe Conditions" and "Unsafe Acts" as used in Occupational Health and safety(OSH). (4marks)

- (d) Define 'Safety Culture' as used in Construction Safety Management System (CSMS) (3marks)
- (e) Messrs. Anindo Management is an employer with 47 workers reported 10 injuries in 2020, and workers in that industry worked 540,000 hours that year due to Covid 19 crisis. Calculate Total Case Incident Rate (TCIR) 2020 for Messrs. Anindo Management. (5 marks)
- (f) Any construction site accident or incidence of ill-health will cause both direct and indirect costs. It is important that all these costs are taken into account when the full cost of accident is calculated. State any FIVE costs probable to the Employee(worker). (5marks)
- (g) A hazardous substance splashes onto a construction quality Officer taking a sample. The worker is not seriously injured, and the ensuing investigation focuses on training, personal protective equipment and the particulars of the sampling station. But did anyone ever ask whether the worker needed to take the sample at all?

List the FIVE hierarchy of controls that should have been used in the construction site.

(5marks)

Section Two : Answer any TWO questions from this section (40 marks)

2. (a) Describe any FIVE basic types of accidents (15marks)
- (b) OSH is covered by TWO sub-divisions of the law that apply to health and safety issues. Citing relevant examples outline the main functions of:
- (i) Criminal Law
- (ii) Civil law (5marks)
3. (a) Messrs. OwuorOtieno Construction Suppliers Imports and distributes construction chemicals for road and construction works. Under the new Hazard Communication Standards (HCS) 2012, labels on containers shipped from manufacturers or distributors must be labeled, tagged or marked in a certain way. List and explain the ISX items that must appear on such label. (12marks)
- (b) List TWO types of injuries that may be caused by the incorrect manual handling of loads (2marks)

(c) Identify the key stages of a workplace risk assessment

(6marks)

4. The Occupational Safety and Health Act, 2007(OSHA,2007) 9.(1) allows for establishment of a safety and health committee at the workplace in accordance with regulations. Discuss any FIVE functions and duties of a safety committee. (20marks)
5. Many company managers , and even some experienced safety professionals still maintain the view that some workplace accidents "just happen"- that not all workplace incidents are preventable, and that we therefore shouldn't always expect to find root causes for why they occurred. The reasons behind this attitude vary, with some individuals claiming that such ambitious safety initiatives are overblown, and others maintaining that viewing all accidents as preventable actually keeps us from having realistic attitudes toward workplace risks.

With the National safety Council (NSC) observing June as "National Safety Month" it is a perfect time to take a deep dive into the philosophy behind root cause analysis, and why we should always approach workplace accidents with the expectation of finding the root causes beneath them. In doing so, I also hope to show why root cause analysis plays such an essential and central role in improving safety performance and strengthening our workplace safety culture.

You have been invited as a construction manager to present a talk during the National Safety Month launch.

- (a) Define root Cause Analysis(RCA) (2marks)
- (b) List 3 ways of undertaking Root Cause Analysis for Accident happening in a construction site. (3 marks)
- (c) Citing relevant examples take the audience through the phase of Root Cause Analysis. (15 marks)