

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
CRIMINOLOGY AND SECURITY STUDIES**

CRSS 432: FIRE SAFETY AND PROTECTION

STREAMS: CRSS Y4S1

TIME: 2 HOURS

DAY/DATE: TUESDAY 21/09/2021

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS:

Section A compulsory. Section B, answer any two questions

SECTION A (COMPULSORY)

1. A) a fire broke out in an abandoned building which was surrounded with bushes
 - i. State the possible causes of fire. (4 marks)
 - ii. According to experts the Mass of combustion (M_c) was 6300 Kg and the area of floor was 30m³ the calorific value of head of combustion (H_c) is 40. Calculate the fire load. (4 marks)
 - iii. Explain how Mass of combustion, Area and Head of combustion affect fire load. (6 marks)
- b) Describe how the following combustion processes extinguish fire: Preferably, use a table to explain
 - i. Smothering
 - ii. Cooling
 - iii. Starving
 - iv. Interruption (16 marks)

SECTION B (Answer any two questions)

2. a) Write brief notes on stages of a fire. (12 marks)
b) Define a fire Load and describe factors that influence it. (8 marks)
3. a) i) Define back draught (2 marks)
ii) Describe the warning signs of a back draught. (8 marks)
- b) i) State the tactical objectives of fire suppression. (6 marks)
ii) Outline factors that can impair the effectiveness of fire protection system. (4 marks)
4. a) State the factors for consideration when selecting a fire protection system. (4 marks)
b) Outline components of Fire safety Audit Checklist. (8 marks)
c) Outline the components of fire and state the significance. (8 marks)
5. Discuss the suitability and unsuitability of the following fire extinguishers for various fire scenarios
- i. Water mist extinguishers
 - ii. Carbon dioxide extinguishers
 - iii. Foam forming extinguishers
 - iv. Halon 1301 (20 marks)
-