



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

**UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR**

FIRST YEAR SECOND TRIMESTER EXAMINATIONS

**FOR THE DEGREE
OF
MASTER OF SCIENCE IN OCCUPATIONAL HEALTH AND SAFETY**

COURSE CODE: NCO 121

COURSE TITLE: FOUNDATIONS OF OCCUPATIONAL HEALTH

DATE: Monday 8th April, 2023

TIME: 8.00a.m. – 11.00a.m.

INSTRUCTIONS TO CANDIDATES

Answer ALL questions in this paper.

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 5 Printed Pages. Please Turn Over.

SECTION A**MULTIPLE CHOICE QUESTIONS (20 MARKS)**

1. What is radiation?
 - A. It is ionized energy
 - B. It is charged particles that produce energy
 - C. It is energy that travels through space and comes from a specific source
 - D. It is non-energy that produces particles that are invisible
2. Examples of ionizing radiation include _____.
 - A. Cosmic rays, X-rays, and gamma rays
 - B. Radioactive material and particles
 - C. LEDs, remote control, MRI,
 - D. Light bulbs, cell phones, microwaves
3. The earliest indications of radiation damage may be detected in the:
 - A. Nerve cells.
 - B. Skin cells.
 - C. Bone cells.
 - D. Blood cells.
4. The physical effects of radiation on the body of an individual receiving the radiation are called:
 - a. Somatic effects
 - b. Latent effects.
 - c. Genetic effects.
 - d. Radiosensitive effects.
5. The radiation effects which can be passed on to the offspring or to a later generation of a person receiving radiation are called:
 - a. Future effects.
 - b. Genetic effects.
 - c. Somatic effects.
 - d. Radiosensitive effects.
6. Devices attached to the clothing of people working in radiation areas for measurement of radiation are called:
 - a. Survey instruments.
 - b. G-M counters
 - c. Personnel monitoring devices.
 - d. Portable rate meters.
7. Atoms that have excess energy and are unstable are known as:
 - a. Radioactive
 - b. Radioactivity
 - c. Balanced
 - d. Weighted
8. Electricity is a form of the following:
 - a. Radiation
 - b. Energy
 - c. Magnet
 - d. Shock
9. When the insulation on an extension cord is damaged, you should:

- a. Eliminate it
 - b. Substitute it
 - c. Use duct tape to repair it
 - d. All the above
10. Which of the following PPE should be worn when working with electricity?
- a. Metal hard hat and insulated gloves & clothing
 - b. Non-metallic hard hat and insulated gloves & clothing
 - c. Non-metallic hard hat and non-insulated gloves & clothing
 - d. Metal hard hat and non-insulated gloves & clothing
11. the BEST way to prevent workplace injury is:
- a. to undertake engineering controls
 - b. remove it from the workplace
 - c. report it to the employer
 - d. enforce health and safety policy
12. Vibration-induced white finger (VWF) is the most common condition among the operators of hand-held vibrating tools.
- a. True
 - b. False
13. Groups exposed to whole-body vibration include operators of the following except.
- a. Long distance trucks,
 - b. Buses that travel daily,
 - c. vibrating floors
 - d. operators of chain saws
14. Controls for dealing with vibration hazards include:
- a. Using anti-vibration tools and gloves
 - b. Not using faulty tools
 - c. Using vibration dampening seats
 - d. All of the above
15. The severity of hand-arm vibration syndrome depends on several other factors, such as the characteristics of vibration exposure, work practice, personal history and habits.
- a. True
 - b. False
16. A possible sign of hearing loss is:
- a. Ear wax build up
 - b. Difficulty hearing people who whisper.
 - c. The TV or radio is too loud for others
 - d. Ear wax buildup and the TV or radio is too loud for others.
17. Which of the following is a potential source of loud noise?
- a. A hand saw
 - b. A conveyer belt
 - c. Woodworking machinery
 - d. Forklifts
18. Hearing protection is required when other controls, such as engineering or administrative controls, cannot keep noise exposure below the OSHA PEL
- a. True
 - b. False
19. What type of health effects can short term exposure to air contaminants and dust cause?
- a. Chronic respiratory disease

- b. Skin rashes
 - c. Immediate irritation and breathing problems
 - d. Visual problems
20. What should you do if you encounter a fire in the workplace?
- a) assess the type of fire and use the appropriate fire extinguisher
 - b) report to the supervisor
 - c) Activate the fire alarm and evacuate
 - d) run away and assemble at the designated assembly point

SECTION B

SHORT ANSWER QUESTIONS (40 MARKS)

1. Highlight any **four** Hand-Arm Vibration Syndrome (HAVS) symptoms (4 Marks)
And four Whole-body vibration symptoms (4 Marks)
2. What is Workplace Noise? (2 Marks)
From what amount of decibels is it considered noise? (1 Mark)
3. Explain two faults on electric cables/wires that can cause fire (8 Marks)
4. Define with examples each of the radiations and explain the health effects and prevention of each of the radiations.
 - a. Ionizing (8 Marks)
 - b. Non-ionizing (8 Marks)

SECTION C

LONG ANSWER QUESTIONS (40 Marks)

1. You are a consultant from the Department of Safety and Health (DOSH) office doing safety audits. What 5 indicators will you be looking for to ensure that the workplace is safe? (20 Marks)
2. Discuss work-life balance and give examples of each (5 Marks)
What are the health effects of a worker who does not balance work and his/her personal time? (15 Marks)