

**BOWEN UNIVERSITY
(OF THE NIGERIAN BAPTIST CONVENTION)
IWO, OSUN STATE
COLLEGE OF HEALTH SCIENCES
MEDICAL LABORATORY SCIENCE PROGRAMME**

**MLS 101: Medical Laboratory Bio-risk Management
First Semester Examination 2023/2024 Academic Session**

Instruction: Choose the best answer in the options provided

Date: 2nd February, 2024

Time allowed: 45 minutes

1. The following is an example of an administrative control except
 - a) Training of personnel
 - b) Respiratory Protection
 - c) Staff Remuneration and Compensation
 - d) Standard operating procedure (SOP) Compliance

2. Which of the following is not a component of Biorisk Management
 - a) To reduce the risk of unintentional exposure to pathogens and toxins or their accidental release
 - b) To maximise the risk of unauthorized access, loss, theft, misuse, diversion or intentional release of VBM to tolerable, acceptable levels
 - c) To provide assurance (internally and externally), that suitable measures have been adopted and effectively implemented.
 - d) To provide a framework for continuous monitoring and awareness-raising for biosafety, laboratory biosecurity, ethical code of conduct, and training within the facility.

3. Adversary Assessment: the following are examples of adversarial motivations to target Valuable Biological Materials (VBM) except
 - a) To obtain financial gain
 - b) To inflict casualties
 - c) To enhance proprietary information
 - d) To spread fear or protest a specific activity

4. Laboratory biosecurity may be addressed through the coordination of the following security measures except
 - a) Biological Security
 - b) Data Security
 - c) Pathogens Security
 - d) Personnel Security

5. Pathogen security as it relates to biosecurity include the following except:
 - a) Sample storage
 - b) Control of Sample transportation
 - c) Document Sharing
 - d) Inactivation and Disposal Control

6. Biosecurity objective is to protect against the following except
 - a) Loss and theft
 - b) Diversion of dangerous pathogens
 - c) Intentional misuse
 - d) Access Control

7. The following are correct except
 - a) Biosafety protect people from dangerous pathogens
 - b) Biosafety ensure unlimited lab access while work is in progress
 - c) Biosecurity protect pathogens from dangerous people
 - d) Biosecurity ensure limited access to labs that contain certain biological agents

8. Mitigation Control Measures include the following except
 - a) Substitution of *Bacillus anthracis* with as *Bacillus thuringiensis*
 - b) Display of biohazard symbols on doors and containers
 - c) Adherence to Standard operating procedures
 - d) Unrestricted access

9. The following are examples of Personal Protective Equipment (PPE) except
 - a) Gloves
 - b) Respirators
 - c) Laminar flow hood
 - d) Laboratory coats

10. The components of the AMP model of bio-risk management include the following except
 - a) Biorisk Assessment
 - b) Mitigation
 - c) Performance
 - d) Evaluation

11. Examples of activities or events that will change the risk environment and warrant a reassessment include these except
 - a) Purchase of new PPE
 - b) Changes in personnel
 - c) Changes in manufacturer or supplier of consumable materials
 - d) A relocation or renovation

12. The process of identifying the hazards and evaluating the risks associated with biological agents and toxins, considering the adequacy of any existing controls, and deciding whether or not the risks are acceptable is called
 - a) Biorisk Management
 - b) Biorisk Assessment
 - c) Biorisk Mitigation
 - d) Biosafety

13. The following statements are true except
 - a) When experiments, processes, materials, and technology change, so does the risk.
 - b) A risk assessment should be performed and reviewed at least annually.
 - c) The decision not to work with a specific biological agent provides the highest degree of risk reduction.

- d) The elimination of engineering controls, administrative controls, practices and procedures, and PPEs should decrease the likelihood of risk.
14. Risk assessment methodology is based upon the following steps except
- What is the Biorisk management level
 - Define the risks
 - Define the situation
 - What is the level of acceptability
15. Which of the following is true when defining biological risk?
- $R = f(L - C)$
 - $R = f(L + C)$
 - $R = f(L \times C)$
 - $R = f(L / C)$
16. If L = Very high, C = Very low, R = ?
- High
 - Very high
 - Moderate to low
 - Low
17. Which of the following is the least effective method of controlling Laboratory hazards?
- Elimination
 - Substitution
 - Engineering Control
 - PPE
18. Which of the following seek to isolate the medical laboratory staff from Laboratory hazards?
- Elimination
 - PPE
 - Engineering Controls
 - Administrative Controls
19. The following pairs are correct biohazard symbols that are used on the walls, doors and containers in the medical Laboratories except
- Biological Hazard & Hand wash station
 - Explosive materials & Open Toes wears
 - Corrosive & Flammable materials
 - Eye wash station & Carcinogenic
20. Air circulation in the medical laboratory should be
- Multidirectional
 - Bidirectional
 - Unidirectional
 - None of the above
21. If Intended Outcomes is equal to the Observed Outcomes (IO = OO) in a Biorisk Management System Performance. The following are true except
- No corrective action is required
 - Biosafety measures are effective

- c) It leads to revision of SOPs
 - d) Training of personnel may not be required
22. The benefits of performance measurement include the following except
- a) Helps identify areas for improvement using a consistent framework
 - b) Eliminate assurance that the risk is acceptable
 - c) Prevents accidents and incidents.
 - d) Reduces cost of operation.
23. *Mycobacterium tuberculosis* is an example of what pathogen risk group?
- a) Risk Group II
 - b) Risk Group IV
 - c) Risk Group I
 - d) Risk Group III
24. The full meaning of MLSCN is
- a) Medical Laboratory Science Council of Nigeria
 - b) Medical Laboratory Scientist Council of Nigeria
 - c) Medical Laboratory Science Council in Nigeria
 - d) Medical Laboratory Council of Scientist in Nigeria
25. The quality Management system that is concerned about validation, calibration, installation and maintenance is
- a) Inventory
 - b) Equipment
 - c) Facility and safety
 - d) Occurrence management
26. The full meaning of "PDCA" in the Biorisk Management approach for continuous improvement is called:
- a) Plan-Do-Control-Act
 - b) Plan-Do-Check-Assess
 - c) Play-Do-Control-Act
 - d) Plan-Do-Check-Act
27. A safe laboratory is the one that ensure the following except:
- a) Enables trained staff to conduct accurate and timely tests and research, without jeopardizing the health of workers, the environment, or the public.
 - b) Protect laboratory staff and the public from biological, chemical, environmental, or physical hazards.
 - c) Has strictly controlled access.
 - d) Puts the health of its workers and the public in jeopardy
28. Medical Laboratory Biosafety Practices include the following except:
- a) Appropriate gloves must be worn for all procedures that may involve direct or accidental contact with blood, body fluids and other potentially infectious materials or infected animals.
 - b) Personnel must wash their hands after handling infectious materials and animals, and before they leave the laboratory working areas.
 - c) Work surfaces must be decontaminated after any spill of potentially dangerous material and at the end of the working day.
 - d) All contaminated materials, specimens and cultures must be decontaminated before disposal.

29. The following practices are allowed in the laboratory except
- Handling contact lenses
 - Eating and drinking
 - Applying cosmetics
 - Open toes wear
30. What is the primary factor that determines the BSL classification of a laboratory?
- The laboratory's location
 - The laboratory's funding source
 - The pathogens or agents being handled
 - The size of the laboratory
31. Specimens of Ebola and Marburg virus for cell culture identification should be handled in which of the following BSL?
- BSL-1
 - BSL-2
 - BSL-3
 - BSL-4
- 8
32. The links in the Chain of Infection include each of the following except:
- Host
 - Portal of entry
 - Mode of transmission
 - Reservoir
33. How does Ebola spread from human to human?
- Spreads through inhaling infected droplets
 - Spreads through direct contact with blood and bodily fluids
 - Spreads through contaminated water
 - Spread through ingestion
34. The disease that is transmitted from animal to human is termed to as:
- Iatrogenic disease
 - Infectious disease
 - Congenital disease
 - Zoonotic disease
35. A physical situation which may cause human injury, damage to property or the environment, is called:
- Likelihood
 - Risk
 - Hazard
 - Mitigation