



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2022/2023**

- COURSE NAME : OCCUPATIONAL SAFETY AND HEALTH
- COURSE CODE : BDA 31302
- PROGRAMME CODE : BDD
- EXAMINATION DATE : JULY/AUGUST 2023
- DURATION : 2 HOURS
- INSTRUCTION :
1. ANSWER **ONE (1)** QUESTION FROM TWO (2) QUESTIONS PROVIDED IN **SECTION A** AND ANSWER **ALL** QUESTIONS IN **SECTION B**
 2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK**.
 3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA **CLOSED BOOK**

THIS QUESTION PAPER CONSISTS OF **FIFTEEN (15)** PAGES

TERBUKA

CONFIDENTIAL

SECTION A

- Q1** (a) The philosophy and guiding principles of OSHA 1994 is “The responsibilities to ensure safety and health at the workplace lies with those who create the risk and with those who work with the risk”. Compare the general duties related to OSHA 1994 for each of the role listed below by providing **TWO (2)** detail explanations and example for each of them.
- (i) Employers and self-employed persons (4 marks)
 - (ii) Designers, manufacturers and suppliers (plant and substance) (4 marks)
 - (iii) Employees (4 marks)
- (b) “The occupational health and safety management system (OHSMS) is based on the methodology and activities of Plan-Do-Check-Act (PDCA)”. Evaluate the statement and explain how the PDCA activities are used in the OHSMS. (7 marks)
- (c) The safety officer in a company always say that the best method to conduct informal risk assessment techniques is by using “Stop-Look-Analyze-Manage (SLAM)”. However, this is not the only technique available to manage hazards in workplace. Based on your engineering knowledge, choose and explain **THREE (3)** other informal risk assessment techniques that can be used in managing hazards. (6 marks)
- Q2** (a) Mechanical works normally involve operations of machinery and its components. It is known that all of these works are surrounded with some kind of hazards that need to be very-well managed. Appraise **FOUR (4)** suitable methods for hazards preventive and control in mechanical works by writing detail explanations for each of them. (8 marks)
- (b) Using electrical safety knowledge, compare the effect of electrical hazards listed below by providing **TWO (2)** descriptive explanations and complete example for each of them.
- (i) Electrical shock (4 marks)
 - (ii) Excessive brightness (4 marks)
- (c) There are four stages of fire growth. Explain **THREE (3)** of them. (9 marks)

SECTION B

Answer all questions using the **OMR form**.

1. Choose the **CORRECT** statements. Managing OSH at workplaces is vital as accidents have

- I. Direct cost
- II. Indirect cost
- III. Investment cost
- IV. Awareness cost

- A. I & II
- B. I, II & III
- C. III & IV
- D. I, II & IV

2. The function of OSH related agency in Malaysia is

- A. Ministry of Health provide health insurance service
- B. National Institute of Safety & Health (NIOOSH) provide training service
- C. Social Security Organization (SOCSO) provide consultancy service
- D. Fire Department provide portable fire extinguishers

3. Which of the following statement is **TRUE**.

- A. OSHA 1994 covers factory, bank, port and on-board ships
- B. FMA 1967 covers factory, office works, steam boiler and electric generator
- C. OSHA 1994 does not cover on-board ships and tourism industry
- D. FMA 1967 covers steam boiler, unfired pressure vessel and goods lift

4. Choose the **CORRECT** statements related to Department of Environment (DOE) Malaysia

- I. monitoring and enforcing environmental standards
- II. administer and enforce the Environmental Quality Act, 1974
- III. draw attention to process steps that cause potential environment burden.
- IV. provide enforcement to factories that generate hazardous solid waste

- A. I & II
- B. I, II & III
- C. III & IV
- D. I, II, III & IV

TERBUKA

5. The factors that determine whether or not a substance is hazardous are

- I. Biodegradability
- II. Incompatability
- III. Corrosivity
- IV. Flamability

- A. I & II
- B. I, II & III
- C. III & IV
- D. I, III & IV

6. Which of the following statement is **TRUE** about Occupational Health and Safety Management System (OHSMS)

- A. OHSMS can improve company sales and ensure workers high income
- B. OHSMS does not cost anything and can help companies enter export markets
- C. OHSMS review and audits play important role for continual improvement
- D. OHSMS can be successful only with little commitment from top management

7. Choose the **CORRECT** statements related to elements of OHSMS

- I. Policy: the development of the organization's OSH policy statement
- II. Organizing: establishment of OSH corrective and preventive action plan
- III. Planning & Implementing: Addresses the management review process
- IV. Evaluation: measuring the OSH management system's performance

- A. I, II & III
- B. I & IV
- C. I, III & IV
- D. I, II, III & IV

8. Qualifications to be registered as a safety and health officer

- I. Hold a bachelor degree in OSH or equivalent
- II. Successfully completed a course of training in OSH and passed any examination
- III. Has been working in the area of OSH at least for a period of ten years
- IV. Has received such training as prescribed from time to time by the Minister

- A. I, II & III
- B. I, II, III & IV
- C. II, III & IV
- D. II & III

TERBUKA

9. Which of the following statement is **NOT TRUE**?

- A. Risk is a combination of the likelihood and consequence of a specified hazardous event occurring.
- B. Risk often involves with specified circumstances over unlimited period duration.
- C. Risk covers the severity of injury or damage to the health of people, property and environment.
- D. Risk is often viewed very differently from individual to individual.

10. Which of the following statement related to risk management is **NOT TRUE**.

- A. Severity is outcome from an event such as severity of injury or health of people.
- B. Severity does not include damage to property and environment.
- C. Risk assessment means the process of evaluating the risks to safety and health.
- D. Risk management involves identifying hazards and assessing the associated risk.

11. Choose the **CORRECT** statements related to HIRARC

- I. Hazard identification should be properly documented
 - II. Review is an optional/not compulsory element in risk management process
 - III. Control measures can be started at any level of the hierarchy of control.
 - IV. HIRARC covers hazards identification, analysis and estimate risk, and apply measures
- A. I & II
 - B. I, II & III
 - C. I, II, III & IV
 - D. I & IV

12. Which of the following is classified as hazard identification?

- A. Hands caught in rotating parts if machine is accidentally started.
- B. Use heat resistant leather hand glove.
- C. Manual lifting procedure and training.
- D. Safe work practice and regular maintenance.

13. Selecting a suitable control often involves the following **EXCEPT**

- A. Implementing long term controls when reasonably practicable.
- B. Short-term controls might require workers to use hearing protection.
- C. This selection is done before considering the likelihood of an event occurring.
- D. Implementing short-term measures to protect workers until permanent controls can be put in place

14. Appraise the correct arrangement for Hierarchy of Control.

- A. Elimination – Administrative Control – Engineering Control
- B. Personal Protective Equipment – Engineering Controls – Substitution
- C. Engineering Controls – Personal Protective Equipment – Isolation
- D. Isolation – Engineering Controls – Administrative Controls

15. Ergonomic hazards include the following **EXCEPT**

- A. Poor lighting.
- B. Unfair work schedule.
- C. Awkward movements.
- D. Having to use too much force.

16. A hazard identification and assessment methodology can consider the following documents and information **EXCEPT**

- A. Operations productivity record.
- B. The record of hazardous substances.
- C. Employee complaints and comments.
- D. Any results of work place inspections.

17. To extinguish types of fire for flammable liquids such as gasoline, petroleum greases, tars, oils, oil-based paints, solvents, and alcohols is referring to the class of fire

- A. Class A
- B. Class B
- C. Class C
- D. Class D

18. The process of extinguishing a fire by using blankets, foam, or sand is called

- A. Cooling
- B. Smothering/Cut off oxygen supply
- C. Blanketing
- D. Arching

TERBUKA

19. Which of the following are **TRUE** for the electrical hazards control at construction site?
- I. Structural barriers must be used to prevent accidental damage to electrical components.
 - II. Only trained and authorized employees may repair or service electrical equipment.
 - III. Electrical works can be done while electrical cable submerge onto water and in wet conditions.
 - IV. Water tight enclosure must be used.
- A. I & II
 - B. I, II & III
 - C. I, II & IV
 - D. I, II, III & IV
20. The statement of “an event or chain of events which has caused or could have caused injury or illness and/or damaged to assets, the environment or third parties, and includes a near miss” is referring to the meaning of
- A. Medical Treatment Case
 - B. Lost Time Injury
 - C. Accident
 - D. Incident
21. What is the first step in an accident investigation?
- A. Identify an injured employees and assess the severity of the injury
 - B. Obtain medical treatment if necessary
 - C. Observe accident scene and analyze the facts
 - D. Interview injured employee and witness
22. The accident information to be included in the notification form are
- I. A description of the injuries
 - II. The exact time and date of the occurrence
 - III. The composition of the investigation team members
 - IV. The name of any witnesses
- A. I, II, III & IV
 - B. I, II & III
 - C. I, II & IV
 - D. I & II

TERBUKA

23. Which is correct arrangement on the stages of accident causation theory introduced by Heinrich 1931?
- I. Accident and injury
 - II. Fault of person
 - III. Unsafe act and/or mechanical or physical hazard
 - IV. Ancestry and social environment
- A. IV, III, II & I
 - B. IV, II, III & I
 - C. IV, III, I & II
 - D. I, II, III & IV
24. In carrying out an investigation, the team should collect as many facts as possible which may help in understanding on the incident and the events surrounding it. It may include the following **EXCEPT**
- A. Evident review such as work permits, procedures, physical report and medical report.
 - B. Interview to injured and witnesses
 - C. To conduct site inspection
 - D. Interview victim's next of kins
25. According to the NADOPOD Regulation 2004, the notification of the accident cases occurred shall be notified to DOSH within 7 working days using three forms. For example, the purpose of using form JKKP 6 is to notify accident involved with
- I. Accident
 - II. Dangerous Occurrence
 - III. Occupational Disease
 - IV. Occupational Poisoning
- A. I
 - B. I & II
 - C. I, II & III
 - D. I, II, III & IV
26. The record keeping form used to list accidents, dangerous occurrence, occupational poisoning and occupational disease and to note the extent of each case for each year. This statement is referring to the which form used in NADOPOD Regulation 2004?
- A. Form JKKP 6
 - B. Form JKKP 7
 - C. Form JKKP 8
 - D. Form JKKP 10

TERBUKA

27. Below is the costs by organization due to workplace accident **EXCEPT**
- A. Service disruption to the customer
 - B. Damaging the image of company
 - C. Increase of employee morale
 - D. Legal prosecution by enforcement agency
28. The following definition related to incident or accident are correct **EXCEPT**
- A. Near miss did not result to injuries and therefore need not be reported
 - B. Incident is an unsafe occurrence arising out of or in the cause of work
 - C. Accident is an unexpected event that occurs through a combination of causes
 - D. Accidents may result to damage of assets and the environments
29. Safety and Health Committee Regulation 1996 under Regulation 13 states that the committee shall convene a meeting to investigate the incident case immediately after the committee has inspected the place of work. Which statement below is explaining the purposes of incident investigation;
- I. To establish the causes of the accidents and penalize the offenders
 - II. To establish proper control measures so that future accident can be prevented
 - III. To record all facts about the accident for various reasons such as compensation, claims and legal persecution
 - IV. To analyze trend and cost for long term planning.
- A. I, II & III
 - B. I, III & IV
 - C. II, III & IV
 - D. I, II, III & IV
30. Who is responsible to conduct the initial incident investigation after the incident occurred stated in the Safety & Health Committee Regulation 1996?
- A. Safety & Health Committee member
 - B. Safety & Health Officer (SHO)
 - C. Construction Safety Supervisor (CSS)
 - D. Site Safety Supervisor (SSS)
31. What is the best way to stop yourself from falling over the edge while working on flat roof?
- A. Put a large warning sign at the edge of the roof
 - B. Ask someone to watch you and shout when you get too close to the edge.
 - C. Protect the edge with guide rail and toe-board
 - D. Use the red and white tape to mark the edge.

32. Below are hazards of working at height **EXCEPT**

- A. Tools or equipment falling
- B. Slip, trip and fall
- C. Adverse weather conditions
- D. Working alone at height

33. Work related musculoskeletal disorder (WMSDs) are a group of painful disorders of muscles, tendons and nerves due to poor ergonomic practices at site. The examples of WMSDs diseases are;

- I. Carpal tunnel syndrome
- II. Tendinitis
- III. Silicosis
- IV. Epicondylitis

- A. I, II, III & IV
- B. I, II & III
- C. I, II & IV
- D. I, III & IV

34. A safety data sheet (SDS) is the primary source of chemical information required to enable the safe handling, storage and emergency response of hazardous chemical used at work. A SDS must contain 16 sections, which are;

- I. Firefighting measures
- II. Disposal information
- III. First aid measures
- IV. Hazard identification

- A. I & II
- B. I, II & III
- C. II, III & IV
- D. I, II, III & IV

35. Which regulation below stated in OSHA 1994 specifically mentioned the requirement on chemicals handling, storage, labelling, procurement and health surveillance.

- I. Control of Industrial Major Accident Hazard Regulation 1996
- II. Classification, Labelling and Safety Data Sheet of Hazardous Chemicals Regulation 2013
- III. Use and Standards Exposures of Chemical hazardous to Health Regulation 2000
- IV. Safety and Health Committee 1996

- A. I, II, III & IV
- B. I, II & III
- C. II & III
- D. I & II

TERBUKA

36. A label of chemical containers shall contain the following information **EXCEPT**
- A. Hazard and precautionary statement
 - B. Signal word either danger or warning
 - C. Manufacturer information
 - D. Product identifier
37. Vibration controls can be done by ensuring equipment frames are rigid and equipment is firmly seat on a solid floor and is not in contact with other equipment or with walls. This practice is an example of implementation hierarchy of control under
- A. Substitution
 - B. Elimination
 - C. Administrative control
 - D. Engineering control
38. The are two types of hearing protective device (HPD) commonly used to control the noise exposure which are ear plug and earmuff. The following statements are true about advantages of using the earmuff **EXCEPT**;
- A. Some are designed to be worn with hard hats.
 - B. Can be put on and remove easily
 - C. Easily used with other safety equipment
 - D. Easy for your employer to supervise the wearing of this device
39. The harmful effects from exposure to hazardous noise at work are;
- I. Loss of hearing
 - II. Reduce quality of life due to annoyance and stress
 - III. Disruption in communication
 - IV. Tinnitus
- A. I, II, III & IV
 - B. I, II & III
 - C. II, III & IV
 - D. I & II
40. The incident cost iceberg mentioned that it is estimated that for every \$1 in direct incident costs, there are anywhere from \$4 to \$11 in indirect or hidden costs. Below are examples of hidden costs scenario **EXCEPT**
- A. Legal cost
 - B. Fines
 - C. Medical treatment cost
 - D. Loss of expertise

TERBUKA

41. The purpose of a locking facility when it is 'off' position such as lockout and tagout (LOTO) procedure is to
- A. Improve productivity on the job
 - B. Secure harmful energy sources to prevent injury
 - C. Slow down work so technicians are less stressed
 - D. Safeguard equipment from fire incident
42. The very first thing you should do if you are the first to witness or discover an accident on the job site is to
- A. Go find at least one co-worker to help you so you can work as a team
 - B. Go to the scene and help the person injured
 - C. Contact your supervisor to report the incident
 - D. Activate the emergency response alarm/system
43. Which of the following is the **CORRECT** combinations of information available in Material Safety Data Sheet
- A. Identity of chemical, physical hazards and emergency procedures
 - B. Chemical hazards, control measures and safety officer requirement
 - C. Primary routes of entry, maximum working hours and physical characteristics
 - D. Name of manufacturer, transporter and sales agent
44. General duties of employer involved with construction sites includes developer, main contractor, contractor and sub-contractors stated in OSHA 1994 are;
- I. Have a written statement of his general policy with respect to the safety and health at work.
 - II. Develop a safety and health manual guarding in safety and health of the public and his employee
 - III. Provide and maintain safe working environment and welfare facilities
 - IV. To maintain access and egress from work place for employees and public
- A. I, II, III & IV
 - B. I, II & III
 - C. I, III & IV
 - D. II, III & IV
45. Which of the statements below is **NOT TRUE**
- A. A construction work worth RM 40 million must have a safety and health officer.
 - B. FMA 1967 classified structural alteration as part of "building operations".
 - C. FMA 1967 does not cover material hoist since it does not carry human passengers.
 - D. Tower crane at construction site requires certification from DOSH.

46. The following are the legal references regarding accident investigation **EXCEPT**
- A. Control of Industrial Major Accident Hazards Regulations 1996
 - B. Safety and Health Committee Regulations 1996
 - C. Safety and Health Officer 1997
 - D. Classification, Labelling and Safety Data Sheet of Hazardous Chemical Regulation 2013.
47. _____ is anything which has the potential to cause harm, including ill health and injury, damage to property, products, the environment, production losses or increased liabilities.
- A. Risk
 - B. Hazard
 - C. Danger
 - D. Consequences
48. For all incidents, the report should be containing the following information
- I. Background of the incident
 - II. Description of the incident
 - III. Information on persons injured/equipment damaged
 - IV. Recommendations
- A. I, II, III & IV
 - B. I, II & III
 - C. II, III & IV
 - D. I & II
49. What should you emphasize to improve the chances of getting your incident recommendations for corrective actions and system improvements approved by management?
- A. Reduced hospital bills
 - B. Increased employee morale and discipline
 - C. Improvement in processes and procedures
 - D. Avoid visits by DOSH officers
50. The direct cause of injury or illness is always _____.
- A. The harmful transfer of energy
 - B. The result of a general lack of common sense
 - C. An unsafe behavior
 - D. A hazardous condition

TERBUKA

51. Each event in the sequence of events leading up to an accident will contain _____.
- A. Actors and related events
 - B. Actors, actions and consequences
 - C. A combination of actors and events
 - D. One actor and one action
52. What must be completed before the accident investigator can analyze events to determine surface and root causes?
- A. Accumulate all relevant events
 - B. Arrange events into their proper sequence
 - C. Determine the total number of events
 - D. Only keep those events that establish liability
53. What is one of the most common reasons accident reports fail to achieve their intended purpose?
- A. More than one recommendations
 - B. Recommendations are not reasonable/feasible
 - C. Recommendations are not frequently communicated
 - D. Managers take too long time to review the recommendations
54. Implementing corrective and preventive action towards managing the system weaknesses contributed to the accident shall be based on
- A. Injury cause analysis
 - B. Surface cause analysis
 - C. Root cause analysis
 - D. Stem cause analysis
55. Each of the following activities is part of documenting the accident scene **EXCEPT**
- A. Placing warning tape around the accident scene
 - B. Making personal observations
 - C. Taking photographs and video
 - D. Taking initial written statement
56. An affective incident corrective and preventive action will be reviewed through _____ to ensure that the correction will not introduce a new hazard.
- A. Follow up process
 - B. Risk assessment process
 - C. Implementation time table
 - D. Consultant discussions

TERBUKA

57. Drown at construction site is normally associated with

- I. Confined working area (tank or sewerage pipe)
- II. Insufficient air ventilation
- III. Presence of too much water
- IV. No exhaust air suction system

- A. I, II, III & IV
- B. I, II & III
- C. II, III & IV
- D. I & III

58. Which of the following statements are **TRUE**

- I. Chemical hazards are only from human made origin.
- II. Chemical hazards are substances that can cause harm to property and environment.
- III. Human can expose to asbestos through ingestion.
- IV. A method of mineral dust exposure is through inhalation process.

- A. I, II, III & IV
- B. I, II & III
- C. II, III & IV
- D. I & III

59. Which of the following statements are **TRUE**

- I. Keeping separate heat sources and materials through proper zoning is a good fire avoidance approach.
- II. Building contents such as furniture make up the majority the fire load.
- III. Providing small glass window as peephole on doors can act as visual fire detection.
- IV. Fire extinguisher Class A should be used on fires involving petrol.

- A. I, II, III & IV
- B. I, II & III
- C. II, III & IV
- D. I & III

60. Which of the following statements are **TRUE**

- I. A near-miss is incident where no injury or illness occurs.
- II. Preventing incidents at work place is part of legal and human rights obligations.
- III. Company incident prevention program must be led by the section supervisor.
- IV. Ancestry or social environment is the main cause of workplace accident.

- A. I & II
- B. I, II & III
- C. I, II, III & IV
- D. I & III

TERBUKA

- END OF QUESTIONS