



UNIVERSITI  
TEKNOLOGI  
PETRONAS

## FINAL EXAMINATION MAY 2024 SEMESTER

**COURSE : CEB1032/CFB1032 - HEALTH, SAFETY AND ENVIRONMENT**

**DATE : 2 AUGUST 2024 (FRIDAY)**

**TIME : 3.00 PM - 5.00 PM (2 HOURS)**

### INSTRUCTIONS TO CANDIDATES

1. Answer **ALL** questions in the OMR sheet given using **2B pencil**.
2. Choose either A, B, C or D to indicate the correct answer.
3. Select **ONE (1)** best answer for each question.
4. Exam ID and table number **MUST** be shaded properly in OMR sheet given.
5. **DO NOT** open this Question Booklet until instructed.
6. You are **NOT ALLOWED** to bring this booklet out from the Examination Hall.

### **Note :**

- i. There are **SIXTEEN (16)** pages in this Question Booklet including the cover page.
- ii. **DOUBLE-SIDED** question booklet.

1. Which of the following characteristics is associated with The Maya Civilization?
  - a. A system of tribute rather than a single system of government.
  - b. Influence from trade and cultural exchange in art and architecture.
  - c. Granaries and drainage systems leading to brick-lined sewers.
  - d. Construction of aqueducts, sewerage systems, and public baths.
  
2. Which civilization had well-planned towns laid out in rectangular patterns and two-storied spacious houses?
  - a. Maya Civilization.
  - b. Indus Valley Civilization.
  - c. Inca Civilization.
  - d. Aztec Civilization.
  
3. Which of the following events led to the creation of the Bureau of Mines in the United States?
  - a. Introduction of workers' compensation in 1908.
  - b. Rise of environmental organizations in the late 19th century.
  - c. Soil conservation movements in China, India, and Peru.
  - d. Over 3200 people dying in mining accidents in the early 1900s.
  
4. Which of the following is **NOT** a step involved in Laws of Prevention?
  - a. Identify and assess the environmental impact of an activity.
  - b. Report the results in an Environmental Impact Assessment (EIA).
  - c. Renew licenses for waste discharge.
  - d. Identify measures to prevent, reduce, or control the impact.

5. Which of the following are functions of a Safety and Health Committee?
- I. Review OSH measures undertaken.
  - II. Inspect the workplace.
  - III. Investigate possible hazards, accidents, and near misses.
  - IV. Formulate company policies.
- a. I, II and III.
  - b. I, II and IV.
  - c. I, III and IV.
  - d. II, III and IV.
6. What should you do if you witness someone experiencing a "freeze" effect due to electric shock?
- a. Pour water over the person to cool them down.
  - b. Use a non-conductive object to knock the person free of the contact.
  - c. Leave the person alone and wait for emergency services.
  - d. Touch the person to help them get free.
7. There are many advantages when integrating an ergonomic process deeply into all operations. Which of the following are **NOT** the advantages of ergonomics?
- I. Improve productivity.
  - II. Increase environmental protection.
  - III. Increase employee satisfaction.
  - IV. Increase insurance costs.
- a. I and II.
  - b. II and IV.
  - c. I and III.
  - d. II and III.

8. What employee should do when there is a glare on the computer screen?
- Try not to look at the glare.
  - Turn on overhead lights or any lights that are directly behind you.
  - Change the brightness of the computer.
  - Close the blinds or drop them.
9. Ergonomics is defined as \_\_\_\_\_
- the science of fitting the workplace to the worker.
  - the science of fitting the worker to the workplace.
  - the process of assigning workers to a specific job in an office.
  - social science concerned chiefly with description and analysis of the production, distribution, and consumption of goods and services.
10. Choose good examples of adjusting workplace to be more ergonomic friendly.
- Walk away from your workstation every few hours.
  - When typing, your wrists should remain bent.
  - When sitting, feet should be on the floor.
  - The mouse should be lower than the keyboard.
- I and II.
  - I and III.
  - II and IV.
  - III and IV.
11. Which of the following risk factors for back pain is **CORRECT**?
- Lack of adjustable chairs.
  - Excessive vibration from power tools.
  - Continued physical contact with work surfaces.
  - Inappropriate or inadequate tool design.

12. Which of the following is **NOT** related to ergonomics at the workplace?
- Putting people first, taking account of their capabilities and limitations.
  - Be mindful of posture.
  - Reducing workload and work duration.
  - Take breaks and stretch frequently.
13. When must the employer institute a hearing conservation program?
- Whenever employee noise exposures are determined to be more than 85 decibels during any work shift.
  - Whenever the employer determines, employees are exposed to 80 decibels or more during any part of the work shift.
  - Whenever employee noise exposures are at or above an 8-hour TWA of 85 decibels or a dose of 50 percent.
  - Whenever employees are exposed to noise at or above 90 decibels or more.
14. Noise is the common causes of hearing illnesses in workplace. Which of the following statement is **FALSE**?
- Hearing loss can be restored by medical surgery.
  - A single shot from a shotgun, if experienced at close range, may permanently damage your hearing in an instant.
  - Repeated exposures to loud machinery over an extended period may present serious risks to human hearing.
  - Exposure to noise that is too loud and for too long may damage our ears and our heart.

15. Which of the following strategies for reducing workplace noise are **CORRECT**?
- I. Altering acoustical design at the noise source.
  - II. Altering acoustical design of the noise path.
  - III. Substituting equipment.
  - IV. Avoid noise sources before they are introduced into a work or other environment.
- a. I, II and III.
  - b. I, II and IV.
  - c. II, III and IV.
  - d. I, II, III and IV.
16. Noise exposure is expressed as a percentage of the allowable daily exposure. For OSHA, a 100% dose equals an eight-hour exposure to a continuous 90-dBA noise and a 50% dose equals an eight-hour exposure to an 85-dBA noise. If 85-dBA is the maximum permissible level,
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- a. a four-hour exposure to a continuous 85-dBA noise equals a 100% dose.
  - b. a four-hour exposure to a continuous 90-dBA noise equals a 100% dose.
  - c. an eight-hour exposure to a continuous 85-dBA noise equals a 100% dose.
  - d. an eight-hour exposure to a continuous 90-dBA noise equals a 50% dose.
17. Orchestras and concerts regularly play above 90-dBA. Which of the following precautions are advised?
- a. All spectators are required to always put on earplugs.
  - b. All musicians and workers are required to put on suitable earplugs while working in the sound environment.
  - c. Engineering control to lower the noise level.
  - d. Limit the orchestra duration to less than 8 hours.

18. Which of the following tools is most likely to cause vibration of white finger?
- Handsaw.
  - Hammer drill.
  - Hammer and chisel.
  - Battery-powered screwdriver.
19. Which of the following is the hand-arm vibration (HAVS) syndrome?
- Skin cancer.
  - Dermatitis.
  - Blisters on hands and arms.
  - Damaged blood vessels and nerves in your fingers and hands.
20. If you must work at height in a cherry picker over or near to deep water, which one is the required item of personal protective equipment (PPE) must you be wearing?
- Wellington boots.
  - Life jacket.
  - Full body harness.
  - Full face respirator.
21. Which type of accident kills most construction workers?
- Falling from height.
  - Contact with electricity.
  - Being run over by site transport.
  - Being hit by a falling object.
22. Which of the following is required when you climb a ladder?
- Always have three points of contact with the ladder.
  - Always have two points of contact with the ladder.
  - Always have one person to hold the ladder.
  - Use a safety harness.

23. The primary causes of falls are as follows **EXCEPT**
- a. a foreign object on the walking surface.
  - b. a design flaw of the shoes.
  - c. slippery surfaces.
  - d. an individual's impaired physical condition.
24. Since slip and fall accidents account for approximately 1 million workplace injuries every year, organizations obviously need to have a strong fall prevention program in place. As a safety manager in your company, recommend an effective fall prevention policy to avoid accidents.
- a. Provide fall protection training for employers.
  - b. Organizations should buy fall protection devices on a regular schedule.
  - c. Employees require to use the fall protection equipment every time employees work higher than 6 feet.
  - d. The fall protection plan should contain a statement of commitment from both management and employees.
25. Accidents involving ladder are common at the workplace. Prevention action to mitigate this problem at the workplace is important to ensure workers' safety. The following are the recommended prevention action, **EXCEPT**
- a. company should provide hands-on training so that workers know the hazard and work safety.
  - b. company should provide a written safety program to avoid unsafe work practices.
  - c. company should provide options for workers to work at height or not.
  - d. company should eliminate the use of ladder completely.



26. Ladders present unique opportunities for unsafe acts and unsafe conditions. Concerning ladder safety, which of the following methods are **CORRECT**?
- I. Never allow more than one person on a ladder.
  - II. Use tool belts or hand lines to carry objects.
  - III. Do not lean out from the ladder in any direction.
  - IV. When climbing any ladder, you must face it.
- a. I and II.
  - b. II and III.
  - c. I, II, and III.
  - d. I, II, III and IV.
27. If you need to hang something up high on the wall, what should you do?
- a. Stand on the top level of a step ladder.
  - b. Stack a chair on top of a desk and climb up.
  - c. Get a ladder and have a spotter.
  - d. Find the tallest piece of furniture and climb up.
28. One of the effective ways to prevent slips and falls is to wear safety shoes. What are the other functions of safety shoes?
- I. Prevent burns.
  - II. Protect from falling objects.
  - III. Protect from cutting hazards.
  - IV. Protect from pressure hazards.
- a. I, II and III
  - b. I, II and IV
  - c. II, III and IV
  - d. I, II, III and IV

29. Which of the following is the **BEST** method when lifting a load manually?
- Keep legs straight, bend back, and use power of legs.
  - Keep legs and back straight, use power of legs.
  - Bend knees, keep back straight, and use power of back.
  - Bend knees, keep back as straight as possible, and use power of legs.
30. You need to move a load that is heavier on one side than the other. How should you pick it up?
- With the heavy side towards you.
  - With the heavy side away from you.
  - With the heavy side on your strong arm.
  - With the heavy side on your weak arm.
31. The basic principles of industrial hygiene consist of recognition, evaluation, and control. What is the definition of control?
- Application of appropriate technology to reduce workplace exposures to acceptable levels.
  - Determination of the magnitude of the exposure.
  - Determination of the presence or possibility of workplace exposures.
  - Science and art are devoted to the anticipation, recognition, evaluation, and control of the workplace environment.
32. Which of the following is **NOT** a common entry of toxic agents to human body?
- Inhalation of airborne contaminants.
  - Airborne contaminants rest on the head.
  - Penetration of toxic agents into skin.
  - Introduction of substance into the body by way of a needle and syringe.
33. All the materials below are classified as toxic, **EXCEPT**
- asphyxiants.
  - antigen.
  - mutagen.
  - irritants.

34. Which of the following is **NOT** the types of personal hearing protection device?
- Earplugs.
  - Earphones.
  - Ear canal caps.
  - Earmuffs.
35. Sick building causes are frequently pinned down to flaws in the following systems, **EXCEPT**
- heating.
  - ventilation.
  - working space.
  - air conditioning.
36. Which of the following is **NOT** classified as asphyxiants?
- Methane.
  - Oxygen.
  - Carbon dioxide.
  - Carbon monoxide.
37. Below is the right combination of entry point of chemical into body with its description, **EXCEPT**
- breathing – inhaling of substance through nose into respiration system.
  - adsorption – seeping of substance through skin and any part of body surface.
  - injection – transferring of substance forcefully into body via syringe.
  - eating – consumption of substance via mouth.
38. Benzene is human carcinogenic. Which of the following occupation diseases is **NOT** caused by benzene exposure?
- Aplastic anemia.
  - Bone marrow abnormalities.
  - Asthma.
  - Leukemia.

39. What is the purpose of dilution ventilation?
- To control contaminants at their source.
  - To control fumes from lead fusing.
  - To control low toxicity vapors.
  - To control asbestos.
40. Which of the following is **NOT** the main factor that causes the Sick Building Syndrome?
- Fume exhaust.
  - Airflow rate.
  - Ventilation system.
  - Lighting.
41. After one production cycle in a plant, Nicola sanitizes the machine and surrounding area according to the company's SOP. Which industrial hygiene strategy is the process referring to?
- Anticipating.
  - Recognizing.
  - Evaluating.
  - Controlling.
42. As a supervisor at your workplace, you have assigned your staff to use a vibrating tool. You are responsible to \_\_\_\_\_
- measure the level of vibration while your staff is using the tool.
  - explain the risk assessment, the safest way, and the duration your staff can use the tool.
  - watch your staff assess the level of vibration using the tool.
  - help your staff to ensure a safe working environment.

43. Below are the benefits of implementing Occupational Safety & Health Management Systems (OSHMS) at a workplace, **EXCEPT**
- I. Improve the attitudes of personnel about their working environment.
  - II. Promoting unsustainable development.
  - III. Reduce the lost time injuries and accidents and the cost associated with lost time/accidents.
  - IV. Increase productivity and preserving the environment.
- a. I, and II.
  - b. II, and IV.
  - c. II, and III.
  - d. III, and IV.
44. Emissions from a power plant, which uses high-nitrogen fuel, contain unacceptable levels of nitrogen dioxide, which negatively affects those living in the surrounding area. Of the possible solutions to the above problem as listed below, which one is the **MOST** ideal?
- a. Pay full compensation to those negatively affected.
  - b. Modify existing laws to hold the power company accountable.
  - c. Replace the high-nitrogen fuel with low-nitrogen fuel.
  - d. Install devices to remove the nitrogen dioxide in the emissions.
45. An Environmental Risk Assessment must be conducted to evaluate the possible impacts of releasing various levels of a particular pollutant from a chemical processing plant. As a safety officer in your company, you should focus on:
- a. An outline of the beneficial properties of the products produced by the processing plant.
  - b. The legislative requirements related to the human health effects because of exposure to the pollutant.
  - c. The quantification of potential hazards to the local environment of the processing plant releasing this pollutant.
  - d. A detailed outline of the management processes required to reduce the health effects related to exposure to the pollutant.

46. Which of the following methods can be used to prevent Sick Building Syndrome?
- I. Using ozone to eliminate the sources, such as VOC, molds, mildews, bacteria, viruses, and even odors.
  - II. Use of paints, adhesives, solvents, and pesticides in well-ventilated areas and use of these pollutant sources during periods of non-occupancy.
  - III. Using commercial air freshener to eliminate odors.
  - IV. Lighting in the workplace should be designed to give individuals control and be natural when possible.
- a. I, II, and III.
  - b. I, II, and IV.
  - c. II, III, and IV.
  - d. I, II, III, and IV.
47. Which of the following are the benefits of implementing environmental management system (EMS)?
- I. Lack of financial resources will not hinder the implementation of the system.
  - II. Good environmental management makes companies good corporate citizens in their neighborhoods.
  - III. Better environmental management results in less waste and less pollution.
  - IV. Employees live in the communities where their companies are located.
- a. II and III.
  - b. I and IV.
  - c. II, III and IV.
  - d. I, II and III.

48. Azman was employed last month at a manufacturing company. He was assigned to transport products using trolleys to the loading bay. Last week, however, Azman was asked by his supervisor, Mr. Low to transport larger boxes using a truck even though Azman has no training of driving a truck. Unfortunately, Azman lost control of the truck and hit a wall where some boxes were badly damaged. Based on OSHA 1994, which of the statements below are **CORRECT**?

- I. The company should have provided training.
  - II. Azman is responsible for the incident and must pay damages.
  - III. Mr. Low is responsible for the incident.
  - IV. Neither Azman nor Mr. Low are responsible for the incident.
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- a. II and IV.
  - b. I and II.
  - c. I and III.
  - d. I and IV.

49. Johan has joined Zento Plastics as a technician and deals with volatile chemicals daily. Identify Johan's rights as an employee based on his job role.

- I. To request proper PPEs relating to the job functions.
  - II. To demand for specific job training.
  - III. To have overtime (OT) whenever he wishes.
  - IV. To have access to SDS and emergency plan information.
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- a. I and II.
  - b. II and III.
  - c. I, II and IV.
  - d. I, II, III and IV.

50. Working at high place requires the use of fall protection system. Which of the following fall protection systems are correctly used according to its purpose?
- I. The fall arrest system helps to prevent workers from falling to the ground.
  - II. The fall restrain system helps to keep the workers from falling when they need to work near to the edge.
  - III. Guardrails prevent workers from falling efficiently when they work at more than 20-meter height.
  - IV. Safety nets help to prevent workers from hitting the ground when they lose balance and fall off.
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- a. I, II and III.
  - b. II, III and IV.
  - c. I, II and IV.
  - d. I, II, III and IV.

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