



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2016/2017**

COURSE : OCCUPATIONAL SAFETY AND HEALTH

COURSE CODE : BEE12202

PROGRAMME : BEJ/BEV

EXAMINATION DATE : JUNE 2017

DURATION : 2 HOURS

INSTRUCTION : ANSWER ALL QUESTIONS

NAME :

MATRIX NO. :

SECTION :

THIS QUESTION PAPER CONSISTS OF ELEVEN (11) PAGES

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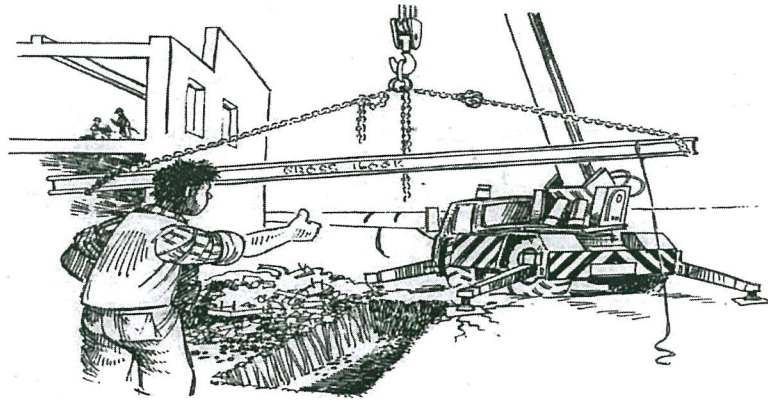
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## SECTION A

- Q1 Management give their best effort to correct unsafe condition/practices but employees in a good position to observe the \_\_\_\_.
- (a) hazards (b) safety  
(c) health (d) risk
- Q2 The risk management process involves some of the OSH standard procedures. Which of the following is NOT included in the main standard procedures?
- (a) Identifying a hazard (b) Assessing the risk  
(c) Putting in place control measures (d) Conducting interview
- Q3 Which of the following are included in the 'Hazard Identification' process:
- I. Workplace inspection.  
II. Hazard elimination.  
III. Investigate accident records  
IV. Hazard isolation.
- (a) I and III only (b) I, II and III only  
(c) I, II, III and IV (d) None are correct
- Q4 The source of hazards can be classified in a few categories which are:
- I. Mechanical Hazard  
II. Electrical Hazard  
III. Chemical Hazard  
IV. Ergonomic hazard.
- (a) I and II only (b) I, II and III only  
(c) I, II, III and IV (d) None are correct
- Q5 The Biological Monitoring process of toxic substance in human body may include the following samples EXCEPT:
- (a) Blood (b) Urine  
(c) Saliva (d) Teeth

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Q6 Based on the **Figure Q6** below, identify **TWO (2) INCORRECT** methods used in the crane lifting operation.



**Figure Q6**

- I. No safety clips on crane hook.
- II. Signaller person not wearing safety helmet
- III. The crane lifts the steel rods too high.
- IV. Only one crane used in the lifting operation

- (a) I and II
- (b) III and IV
- (c) II and III
- (d) I and III

Q7 Which of the following are the correct types of hazard inspection procedures?

- I. Statutory Inspection
- II. Periodic Inspection
- III. Formal and Informal Inspection
- IV. Electrical System Inspection

- (a) I and II only
- (b) III and IV only
- (c) I, II and III only
- (d) I, II and IV only

Q8 Which of the following choices is NOT the method used in Hazard analysis?

- (a) Job Safety Analysis (JSA)
- (b) Economic analysis
- (c) Hazards and Operability Studies (HAZOP)
- (d) Fault Tree Analysis

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Q9 The pre-assessment of information gathering on the facilities, processes and activities of the organization includes some of the important data which are:

- I. Site area map
- II. Inventory of materials
- III. Monitoring data
- IV. Toxicology data

- (a) I and II only
- (b) III and IV only
- (c) I, II and III only
- (d) I, II, III and IV

Q10 Hazard exposure monitoring process may include the monitoring of:

- I. Noise
- II. Heat
- III. Water pressure
- IV. Radiation

- (a) I and II only
- (b) III and IV only
- (c) I, II and IV only
- (d) I, II, III and IV

Q11 Medical surveillance in working place is warranted by law only if:

- I. No hazardous substance is used
- II. There are evidence or reason to suspect injury
- III. Atmospheric monitoring is insufficient
- IV. Workers not wearing personal protective equipment (PPE)

- (a) I and II only
- (b) II and III only
- (c) I, II and III only
- (d) I, II, III and IV

Q12 The Job and Safety Analysis (JSA) table format contain the information of:

- I. Fact problems
- II. Related job description
- III. Learning issues
- IV. List of things that can go wrong

- (a) I and II only
- (b) I, II and III only
- (c) II and IV only
- (d) I, II, III and IV

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Q13 The Hazard and Operability Studies (HAZOP) method is used to:

- I. Identify and evaluate safety hazard in the process plant
- II. Educate the public on the danger of hazards
- III. Review the standard regulations
- IV. Identify the operability problems

- (a) I and III only
- (b) I and IV only
- (c) I, II and IV only
- (d) I, II, II and IV

Q14 Which of the following hazards could be classified as a Psychological Hazard?

- (a) Wrong design of workstation
- (b) Repeated exposure to unnatural posture and movement
- (c) Stress
- (d) Exposure to corrosive substance

Q15 The Fault Tree Analysis method is used to:

- I. Analyse how and why an incident could occur at working place
- II. Evaluate the chemical substance used at work
- III. Calculate the probability of end event
- IV. Justify the possible danger of tool system used at work

- (a) I and III only
- (b) I and IV only
- (c) I, II and IV only
- (d) I, II, II and IV

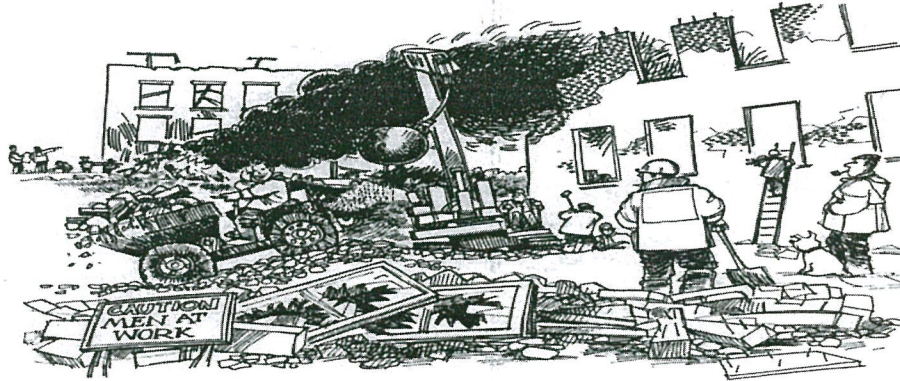
Q16 Define the risk assessment term.

- (a) The process of documenting the risk and hazards at workplace
- (b) The legislation process of documenting the potential hazard at workplace
- (c) The process of evaluating the risks to safety and health arising from hazard at work
- (d) The process which hazard is identified, measured and taken mitigating necessary action

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Q17 Based on the **Figure Q17** below, identify some **INCORRECT** methods used at the construction site



**Figure Q17**

- I. Safety sign is not being used properly.
- II. Workers not used safety helmet.
- III. Overflow of load carried by the tractor.
- IV. Sharp materials dump near the working place

- (a) I and II only
- (b) I, III and IV only
- (c) I, II and III only
- (d) I, II, III and IV

Q18 Risk assessment result is documented and typically being used for:

- I. Risk control in OSH management
- II. Company ISO record
- III. Future reference and review
- IV. Action and penalty

- (a) I and II only
- (b) I and III only
- (c) II and III only
- (d) I, II, III and IV

Q19 Define the severity category for the injury that just requires the first aid treatment.

- (a) Minor injuries
- (b) Major injuries
- (c) Fatality
- (d) Negligible injuries

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- Q20 Select the most TRUTH statements indicate the risk assessment should be carried out for.
- I. Routine and non routine activities including emergencies
  - II. Activities during routine fire drill exercise
  - III. Activities of all personnel having access to the workplace
  - IV. Facilities at the workplace, whether provided by the organisation or others
- (a) I, II, III (b) I, III, IV
- (c) I, II, III and IV (d) None listed above
- Q21 The likelihood of occurrence of hazard under unlikely category can carries the meaning that the potential hazard could happen:
- (a) Frequently (b) Rarely
- (c) Occasionally (d) Never
- Q22 Under the Semi-Quantitative risk assessment method, a person which was MC leaved for more than 4 consecutive days can be categorised to have severity:
- (a) Level 1 (b) Level 2
- (c) Level 3 (d) Level 4
- Q23 The 'Quantitative' risk assessment method shall be conducted for the case where:
- (a) Hazards are indentified as minor and the documentation process is simple (b) Hazards are indentified as tolerable and the documentation process is simple
- (c) Hazard is indentified as tolerable and the documentation process is complex (d) Hazard is indentified as numerous and the documentation process is complex
- Q24 Under the 'As Low as Reasonably Practicable (ALARP)' method, the decision for action is considered as intolerable if:
- (a) The level of risk is not present on any ground (b) The level of risk is moderately justified on any ground
- (c) The level of risk is justified with some control measure present on any ground (d) The level of risk cannot be justified on any ground



Q25

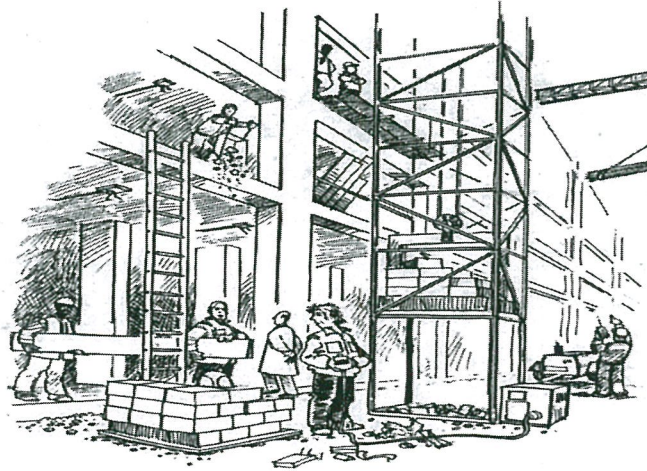


Figure Q25

Figure Q25 shows a typical working environment in construction site. Select some CORRECT hazards as identified below.

- I. Objects falling from above
- II. Electric shock
- III. Sharp objects on the floor
- IV. Person falling from high level

- (a) I
- (b) I and II
- (c) I, II, and III
- (d) I, II, III and IV

Q26 Identify the some appropriate control measures as stated below that could be applied in reducing the risk for the working situation previously shown in Figure Q25.

- I. Wearing safety helmet
- II. Use of work barrier
- III. Wearing oxygen mask
- IV. Use the 'A' type ladder

- (a) I
- (b) I and II
- (c) I, II, and III
- (d) I, II, III and IV

Q27 The risk from electrical shock can be prevented or minimised if the person:

- (a) Regularly attend the necessary electrical course
- (b) Aware with the circuitry diagram
- (c) Posses a licence to handle the equipment
- (d) Ensuring using the good condition electrical equipment

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Q28 The most effective hazards controls measures is:

- (a) Ensuring to always using the personal protective equipment (PPE) in the workplace
- (b) Ensuring to always practice the safe working environment to control the hazard
- (c) Identifying the hazard and apply effective control measures
- (d) Elimination all hazards

Q29

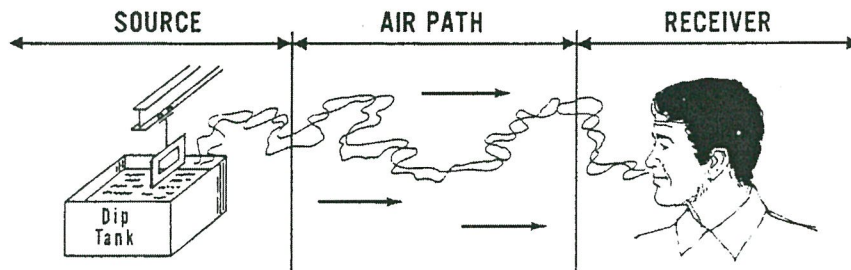


Figure Q29

Figure Q29 shows consequences of inhalation of hazardous gas / odour by person (i.e. Receiver) who is working in the chemical plant environment. Identify some **CORRECT** hazard control actions that can be implemented to the 'Air Path' section, based on the list below.

- I. General ventilation
- II. Using air freshener to eliminate the odour
- III. Automation or remote control exhaust fan
- IV. Air filtering

- (a) I, II, IV
- (b) I, III, IV
- (c) I, II, III, IV
- (d) None listed above

Q30 Identify the some **CORRECT** hazard control actions that can be taken to the 'Receiver' section as previously shown in Figure Q29, based on the list below.

- I. Wearing a personal protective device (PPE)
- II. Provide enclosure area for the worker
- III. Duty rotation of worker
- IV. Personal monitoring and training

- (a) I, II, IV
- (b) I, III, IV
- (c) I, II, III, IV
- (d) None listed above

## SECTION B

Q31 Point out the relationship between Hazard Identification, Risk Assessment and Risk Control (HIRARC).

(6 marks)

Q32 List and explain the **FIVE (5)** steps in Risk Management process include their explanation?

(10 marks)

Q33 Explain in detail:-

- a) Physical Injury
- b) Ergonomics
- c) Psychological Hazard

(9 marks)

## SECTION C

Based on accident scenarios given in **Q34** and **Q35**, you are required to elaborate and discuss the scenarios and relate them accordingly in any **Parts** and **Sections** in the **Act 514, 139, 127**.

Q34 Staff were cleaning up after a busy Friday nights trading at a fast food outlet. The cook was walking back to the kitchen from the pot wash area over a floor that had just been wet mopped by another employee. As he walked past the deep fat fryer, the cook suddenly slipped on the still damp floor. He instinctively reached out to try and break his fall, pulling over the electric deep fat fryer in his panic. The fryer toppled over, spilling its entire contents, 35 liters of boiling hot oil, onto the cook and the floor. As the oil came into contact with the water residue on the floor, thick black smoke was produced, which set off the smoke alarms, adding to the extremely frightening situation? Surrounded in hot oil, the cook couldn't get up from the floor. Each time he tried he slipped back. Eventually the trainee assistant manager succeeded in sliding him out of the spilt oil, burning his own hands in the process. The cook suffered extensive burns to his ankles, legs, buttocks and chest and needed skin grafts. Another employee in the vicinity of the spilt oil also received severe burns to her right leg and ankle, again needed skin grafts.

(8 marks)

Q35 A 16 year old girl was employed at a fast food outlet to cook fries at a frying range. She slipped on water leaking from an ice-making machine and instinctively put out her hand to break her fall. Unfortunately her hand went into the deep fat fryer containing oil at a temperature of 360°F and she sustained severe burns to her left hand and forearm. The outlet was short staffed on the day of accident and the Team Leader was working on the tills instead of monitoring workplace safety. Although the company policy was to mop up spillages it was common practice to leave spillages at busy times and cover them with a sheet of cardboard, which itself can create a tripping hazard. At busy times it was usual to give greater priority to serving customers than to cleaning spillages. The ice-making machine had been leaking for several days and various attempts had been made by different contractors to cure the leak. No-one had sole responsibility to coordinate the repair of faulty equipment and a lack of communication between different shift managers left the equipment leaking over a long period of time.

(12 marks)



SECTION D

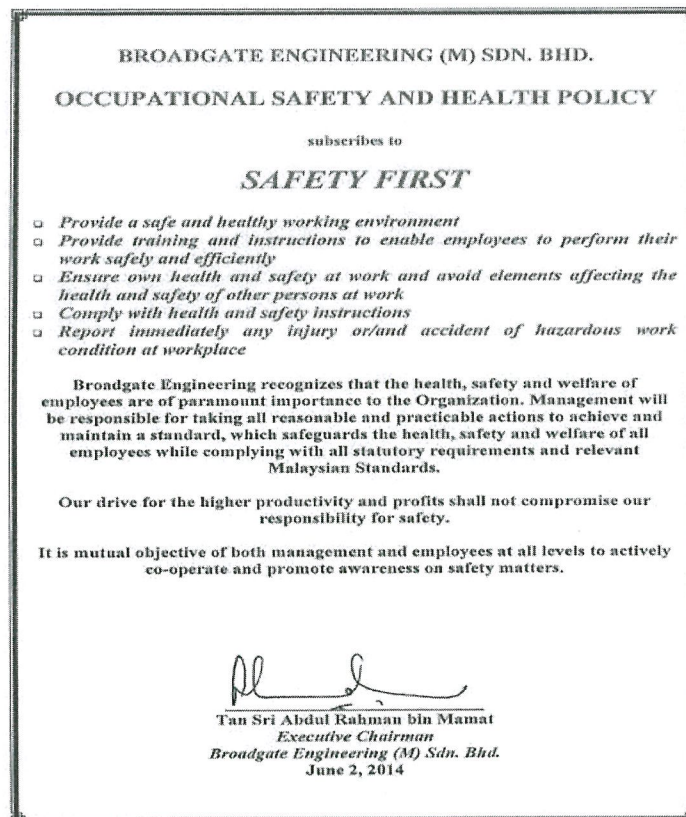
Q36 There were numerous major industrial accidents that have contributed significantly to the evolution of occupational safety and health. Lessons learnt from those incidents have initiated more stringent precautionary and preventive measures. Select **TWO (2)** tragedies as listed in **Table Q36** and interpret the implications and the contributing factors.

**Table Q36: Major Industrial Accidents**

No.	Tragedy	Implications	Contributing Factors
1.	Piper Alpha		
2.	Bhopal		
3.	Chermobyl Disaster		
4.	Hawks Nest		
5.	Bright Sparkles		

(12 marks)

Q37 Carried out a Safety and Health Program based on the Occupational Safety and Health policy given in **Figure Q37**.



**Figure Q37**

(13 marks)

- END OF QUESTIONS -

