Government of **Western Australia**
North Metropolitan **TAFE**

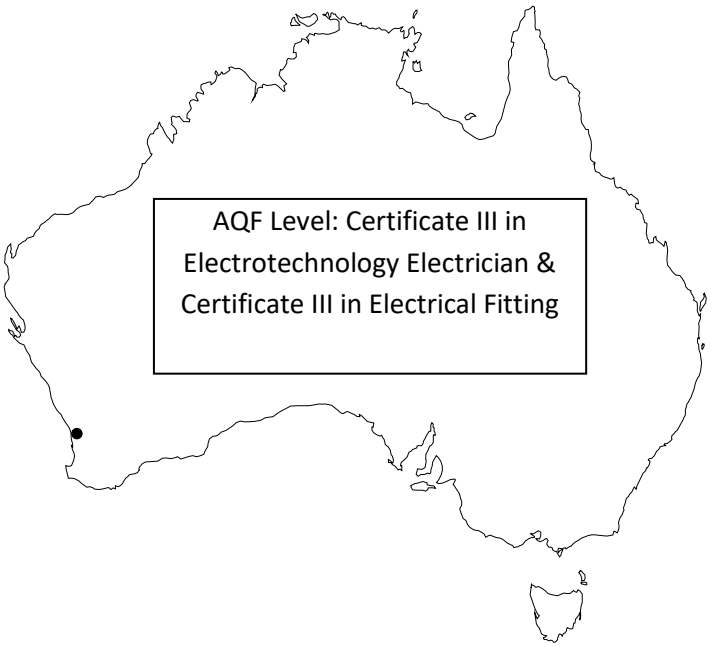
UEE Training Package Support Material
(Non-Endorsed Component)

Based on:
National Electrotechnology Industry Standards

Resource Book

UEECD0007

Apply Work Health and Safety Regulations, Codes and Practices in the Workplace.



North Metropolitan TAFE
V1 April 2021

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Acknowledgements

This Unit Guide has been prepared by Balga Campus Lecturers.

It is intended for North Metropolitan TAFE students only.

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UEE 22020 Certificate II in Electrotechnology (Career Start)
UEE 30820 Certificate III in Electrotechnology Electrician
UEE 33020 Certificate III in electrical Fitting

UEECD0007 – Apply work health and safety regulations, codes and practices in the workplace

C O N T E N T S

Training Achievement Record:

24		Topic 9 – St John's CPR		

References

- The Occupational Safety and Health Act 1984 (WA).available at
  www.worksafe.wa.gov.au
- The Occupational Safety and Health Regulations 1996 (WA). available at
  www.worksafe.wa.gov.au
- Electrical Wiring Practice – Volume 1 (7th ed.) Pethebridge & Neeson
- Training Manual 16-1, Electrical & Electronic Safe Procedures (new ed)
  available on "day release" loan from PO16 Store Balga Campus.
  or weekly hire from the library CALL NUMBER V621.3028 ELE
- Code of Practice – Code of Practice for Persons working on or near energised electrical installations (2017) - *www.commerce.wa.gov.au/**energysafety***
- St John's First Aid and C.P.R. Available library and or St Johns.
- Wiring Rules AS/NZS 3000:2018
- Safe Work Australia (www.safeworkaustralia.gov.au)

Competency Standard Unit

UEECD0007 – Apply work health and safety regulations, codes and practices in the workplace

Prerequisite Unit(s)

There are no prerequisite competencies for this unit

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to enter an electrotechnology workplace	**1.1** Work area access permits are obtained from appropriate person/s in accordance with workplace procedures
	1.2 Relevant workplace WHS/OHS safety regulations and codes of practices are identified and followed when entering the electrotechnology work area
	1.3 Safe work methods for controlling risks are obtained, read and applied prior to undertaking work activity in accordance with WHS/OHS workplace procedures
	1.4 Preparation for electrical and non-electrical isolation is carried out to prevent creation of hazards from loss of machine/system/process control in accordance with WHS/OHS workplace procedures
	1.5 Tools, equipment and chemicals required for the electrotechnology work are checked for safety and correct functionality in accordance with workplace procedures and regulatory requirements
	1.6 Personal protective equipment (PPE) is worn appropriate to the electrotechnology work area and in accordance with workplace procedures
2 Apply safe electrotechnology working practices	**2.1** Risk control work measures are implemented in accordance with WHS/OHS workplace procedures
	2.2 Procedures for dealing with accidents, fires and emergencies are followed in accordance with workplace procedures, scope of responsibility and capabilities
	2.3 Safe work methods are applied when working at heights including safe and effective use of safety equipment
	2.4 Safe work methods are used when undertaking lifting, lowering, pushing, pulling, carrying or otherwise moving, holding or restraining workplace tasks in accordance with relevant code of practice
	2.5 Safe work methods for removing an electric shock victim from a live electrical situation are demonstrated in accordance with workplace emergency management procedures

ELEMENT	PERFORMANCE CRITERIA
	2.6 Working area is kept clean, neat and tidy in accordance with workplace housekeeping procedures
3 Follow electrotechnology workplace procedures for hazard identification and risk control	**3.1** Hazards are identified, control measures implemented and reviewed through regular active participation in the consultation process with employer and other employees
	3.2 Hazards in the work area are identified and reported to relevant person/s in accordance with workplace procedures
	3.3 WHS/OHS documentation and incident records are completed in accordance with regulatory requirements and workplace procedures
	3.4 Workplace instructions are followed in accordance with regulatory requirements and workplace procedures

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) regulations, legislation, codes of practices and procedures in the workplace, including:
  - identifying typical hazards associated with work environments and assessing risk/s in an electrotechnology workplace.
  - applying and reviewing risk control measures to minimise, control or eliminate identified hazards.
  - reporting hazards to relevant person/s.
  - applying safe working practices/methods.
  - contributing to WHS/OHS consultative processes.
- following relevant workplace emergency management procedures and instructions relating to WHS/OHS and emergency incidents.
- selecting and using appropriate personal protective equipment (PPE).
- applying correct manual handling techniques.
- confirming (safe) isolation of an electrical supply and isolation of potential electrical and non-electrical hazards has been completed by an authorised person.
- demonstrating safe methods of removing an electric shock victim from a live electrical situation.
- selecting an appropriate ladder for a given situation and performing a safety check before use.
- completing relevant WHS/OHS documentation.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- effective verbal and written communication techniques
- electrotechnology work environment, including:
  - appropriate fire extinguisher for a given type of fire
  - commonly used workplace safety signs
  - relevant industry standard for safe workplace procedures
  - risk assessment documentation
  - typical hazards associated with a range of work environments

- use of fire extinguishers
- housekeeping and potential hazards in relation to improper housekeeping
- workplace procedures used to control the risks associated with workplace hazards

- legal requirements relevant to WHS/OHS in the workplace, including:
  - appropriate personal protective equipment (PPE)
  - asbestos awareness and reporting hazardous gases, including supervisory requirements and duty of care
  - difference between hazards and risks
  - duty holder responsibilities, as specified in WHS/OHS Acts, regulations and codes of practice
  - employer and employee responsibilities, rights and obligations
  - general aims and objectives of the relevant state or territory legislation relating to WHS/OHS
  - hazards that may be present in the electrotechnology workplace, the harm they can cause and how this harm occurs
  - housekeeping and potential hazards in relation to improper housekeeping
  - major functions of safety committees and representatives
  - powers of health and safety inspectors
  - relevant WHS/OHS regulations, codes and practices
  - underlying principles of WHS
- life support - cardiopulmonary resuscitation (CPR) in the workplace, including:
  - first aid
  - responsibilities of the first aider
  - priorities of first aid management for any accident or injury
  - procedures required at an accident scene
  - legal and ethical issues, which may impact on the management of care
  - ‘duty of care’
  - examination of a casualty for injuries
  - effect of cardiopulmonary arrest on the body
  - managing simulated conditions of airway obstruction, respiratory arrest and cardiopulmonary arrest
  - single and two-person CPR
  - signs and symptoms of an altered level of consciousness
  - management of simulation of a casualty with an altered level of consciousness
  - signs and symptoms of shock
  - management of simulation of a casualty in shock
- relevant safe work method statements (SWMS)/job safety analysis (JSA) or risk mitigation processes, including:
  - emergency management plan
  - hierarchy of WHS/OHS hazard risk control measures
  - principles of risk assessment/management and required documentation
- typical hazards associated with electrotechnology work environments and their control, including:
- asbestos, including:
  - common types of asbestos containing building materials
  - warning signs used to identify the presence of asbestos
  - effects of asbestos on the human body
  - requirements for reporting the presence of asbestos
- silica, including:
  - types of materials that contain crystalline silica (silica dust)
  - methods of releasing silica dust
  - recommended levels of exposure to crystalline silica
  - effects of crystalline silica on the human body

- hazardous gases
- chemicals in the workplace, including:
  - hazardous substances and dangerous goods and their classifications
  - labelling and storage requirements for chemicals
  - purpose and interpretation of safety data sheets (SDS)/material safety data sheets (MSDS)
- confined spaces, including:
  - control measures for working in a designated confined space
  - hazards associated with working in a confined space
  - workplace situations that could be classified as a confined space
- physical and psychological hazards, including excessive noise, vibration, thermal stress, radiation, lasers, occupational overuse syndrome, stress, drugs and alcohol
- safe manual handling principles, including:
  - procedures and methods for manual handling
  - situations that may cause manual handling injuries
  - types of manual handling injuries and their effect
- working at heights, including:
  - hazards and precautions associated with working on ladders, elevated work platforms (EWP) and scaffolds
  - identification of work area as a height risk and use appropriate safety equipment to prevent a fall
- working safely with electricity, including:
  - effects of electric shock on the human body
  - protection offered by a residual current device (RCD)
  - need for ensuring the (safe) isolation of an electrical supply
  - appropriate method of removing an electric shock victim from a live electrical situation
  - precautions that can minimise the chance of electric shock (earthing, extra-low voltage (ELV), fuses, circuit breakers and RCDs)
  - common causes of electrical accidents.

UEECD0007 – My Profiling Work Performance Tasks:

UEECD0007 – Apply Work Health and Safety Regulations, Codes and Practices in the Workplace
1. Performance Requirements: 1a. Related to the following elements: 1. Prepare to enter a work area 2. Apply safe working practices. 3. Follow workplace procedures for hazard identification and risk control. 1b. For each element demonstrate performance: − across a representative body of performance criteria, − on at least 2 occasions, − autonomously and to requirements, − within the timeframes typically expected of the discipline, work function and industrial environment. **2. Representative Range** includes the following: All listed tasks related to performance across a representative range of contexts from the prescribed items below: **The minimum number of items on which skill is to be demonstrated Item List Group No**

A.	All of the following: Equipment including CPR when on the job dealing with accidents	• Use correct Personal Protective • Carry out basic first aid procedures • Work in a safe manner • Participate in risk control measures • Be aware of current OHS legislation in and emergencies • Correct use of MSDS • Correct use of chemicals • Correct isolation/tagging/taping off
B.	At least two of the following:	**Working Safely at Heights** • step ladder • extension ladder • elevated work platforms • scaffolds

Workplace Rules:

Rule 1	Follow the Instructions
Rule 2	Tolerate Ambiguity
Rule 3	Meet your Obligations

Note: This information and current details of critical aspects for each competency standard unit (CSU) in this qualification can be found at the Australian Training Standards website: www.training.gov.au.

Introduction

Learning and Assessment Plan

Name of Lecturer: _____

Contact Details: _____

Delivery Mode/s: ☐ Face to Face ☐ On-Line ☐ Blended Delivery ☐ Other

Using:

Session	Nominal Duration	Program of Work (Topics to be covered)	Primary Reference
1	1 hour	Introduction/Overview	UEECD0007 Resource Book
2	1 hour	The basic legal requirements covering occupational health and safety in the workplace	See page 14
3	4 hours	**The work environment**	See page 14
4	45 minutes	**Manual Handling**	See page 14
5	1 hour	**Chemicals in the workplace**	See page 14
6	1 hour	Working at heights	See page 14
7	1 hour	Confined spaces encompassing	See page 14
8	3 hours	Physical and psychological hazards	See page 14
9	1.5 hours	Working safely with electricity	See page 14
10	45 minutes	Life support	St John's C.P.R.
11	1 hour	C.S.U. Review and Folio of Evidence	See page 14
12	1 hour	C.S.U Theory Test	Assessment Paper

I acknowledge that I have received and read this Learning and Assessment Plan Student Name:_____ Signature: _____ Date: _____		
Lecturer Name	Lecturer Signature	Date

Assessment Strategy

Conditions of Assessment:

Normally learning and assessment will take place in an integrated classroom/ laboratory environment.

It is essential to work through the worksheets and activities in this workbook and follow the guidance of your lecturer. The worksheets and practical activities will provide the essential skills and knowledge outlined in this Unit and assist you in achieving competency.

Assessment Methods:

Written Knowledge Assessment – based on the UEECD0007 Knowledge Evidence. You must achieve a mark of **75%** or more in this assessment.

Observed Skills Assessment – based on the Elements and Performance Criteria of this Competency Unit UEECD0007. You must achieve a mark of **100%** in this assessment.

On-Job-Training:

It is expected that the off-job component of this competency unit will be complemented by appropriate on-job development involving exposure to re-occurring workplace events and supervised experiences. (See Work Performance Tasks.) You are required to log your on-the-job training in your 'My Profiling' apprentice account.

Sufficiency of Evidence:

In all instances competency is to be attributed on evidence sufficient to show that a person has the necessary skills required for the scope of work. These include:

- Task skills - performing individual tasks
- Task management skills - managing a number of different tasks
- Contingency management skills - responding to irregularities and breakdowns in routines
- Job/role environment skills - dealing with the responsibilities and expectations of the work environment including working with others.

Evidence must demonstrate that an individual can perform competently across the specified range of activities and has the essential knowledge, understanding and associated skills underpinning the competency.

Laboratory Instructions

Students working in laboratories at North Metropolitan TAFE Campus's do so on the condition that they agree to abide by the following instructions. Failure to observe the safety instructions will result in IMMEDIATE SUSPENSION.

1. No circuit is to be plugged in or switched on without the specific permission of the lecturer in charge of the class. A circuit must be switched off, isolated and tested for ZERO VOLTS before any supply leads are removed. The DANGER TAG PROCEDURE must be used at all times.
2. Do not leave any circuit switched on any longer than necessary for testing. Do not leave any circuit switched on unattended.
3. Check each item of equipment before using. Report any broken, damaged or unserviceable equipment to your Lecturer.
4. All wiring must be disconnected at the end of each practical class or as each project is completed.
5. Make all connections in a safe manner with an appropriate connecting device. Unshielded 4mm banana plugs are not to be used for wiring.
6. Switch off, remove the plug from the socket and attach your DANGER TAG to the plug top before working on any project. It is not sufficient to simply turn the switch off.
7. When disconnecting your wiring from a connection made under a screw, undo the screw to remove the wiring, do not cut the wire off.
8. Observe the correct colour code for all wiring projects.
9. Test your circuit for short circuits with your multimeter before asking your Lecturer to switch circuit on. Test the Tester before and after EACH test.
10. Where an activity sheet is issued for a project, complete each step in the Procedure before moving to the next step. Advise your Lecturer when you have completed the activity.
11. Draw ALL DIAGRAMS in PENCIL so that they can be easily changed or corrected. Mark off each connection on your diagram as it is made.
12. Check the range before taking a reading with a multimeter.
13. Make sure that it is YOUR plug before inserting plug into an outlet.
14. Always switch multimeter OFF, or to the highest possible AC VOLTS range when you have finished using it.
15. Report any unexpected situations or events to your Lecturer.

Student's Signature _____ Date: _____

Danger Tag Procedure for Electrical Trade Laboratories

The Following Procedure Is Compulsory

1. The student is to attach a DANGER TAG on to the plug top of the project lead before proceeding with the allocated project. A danger tag must be attached to the plug top at all times, when the lead is NOT plugged into the supply outlet. Plug tops or leads are not to be connected to the supply outlet WHILE A DANGER TAG is attached.

2. The student is to assemble the project according to project instruction procedure and lecturer's

directions in its isolated and de-energised state and report to the lecturer as necessary and on completion.

3. The lecturer is to:

   a. Check the project for safety and
   b. Ensure that the student has performed a safety check, including a short circuit test using the recommended procedure.

4. When the lecturer is satisfied that the project is safe to connect and energise the lecturer is to instruct the student to REMOVE the DANGER TAG from the plug top.

5. The student is to plug in the project and switch it on in the presence of the lecturer.

6. The lecturer is to determine whether or not the project is operating satisfactorily.

7. If the project operates satisfactorily the student may take measurements using correct meters with regard to the safety risks associated with using the particular item of test equipment including;

   a. Selecting correct meter function,
   b. Holding meter probes correctly during measuring with fingers behind knurls (finger guards) at all times.
   c.

This is to be done under general supervision of lecturer. The student is NOT to modify, disassemble or carry out ANY unsafe act.

8. If the circuit is to be modified the student must:

   a. Switch the circuit off,
   b. Disconnect the project from the supply,
   c. Attach the DANGER TAG to the plug top,
   d. Report to the lecturer for instructions,
   e. In the lecturer's presence the student is to:-
   f. TEST and VERIFY for ZERO VOLTAGE.
   g. Restart the DANGER TAG procedure from step 2 above.

9. When the student is satisfied that the project has been completed the student is to:

   a. Switch the project off,
   b. Remove the plug,
   c. Replace the DANGER TAG on the plug top,
   d. Report to the lecturer for instructions,

   In the lecturer's presence the student is to:
   e. TEST and VERIFY for ZERO VOLTAGE.

   The lecturer is then to instruct the student to:

   f. Disassemble the project
   g. Remove the DANGER TAG and store the equipment in its designated place.

Failure to follow Danger Tag Procedures when working on practical activities and practical assessments will result in a '**Not yet competent'** comment recorded for this Unit of Competency – UEECD0007.

Student's Signature _____ Date: _____

Apply Occupational Health and Safety Regulations, codes and practices in the workplace

Task:

To explain the basic legal requirements covering occupational safety and health in the workplace in WA and demonstrate an understanding and application of the safe working practices and related matters applicable to the Electrotechnology Industry.

Why:

All persons who in any way have some influence on safety and health activities at a workplace have a duty to ensure the safety and health of themselves and other persons who may be affected at the workplace by their actions or responsibilities. You need to be aware of safety and health issues so that you can identify potential hazards, implement control measures, and actively participate in the development and maintenance of a safe workplace.

To Pass:

1. You must correctly answer the questions forming a portfolio of evidence provided and achieve a mark of **75%** or more in a knowledge test.

2. You must satisfactorily complete the set activities and laboratory tasks.

3. You must achieve **100%** in a final practical competency assessment.

Equipment

Nil

Resources

* Electrical Wiring Practice – Volume 1 (7th ed.) Pethebridge & Neeson
* The Occupational Safety and Health Act 1984 (W.A.).
* The Occupational Safety and Health Regulations 1996 (W.A.).
* AS 1470, Code of General Principles for Safe Working in Industry.
* Code of Practice for Persons working on or near energised electrical installations.

Suggested Self-Study Guide

1. Study the following sections in the text and recommended references:

Electrical Wiring Practice: Pethebridge & Neeson 7th Edition

Volume 1 Chapter 2 Workplace and Electrical Safety Pages 23-46

The Occupational Safety and Health Act 1984 (W.A.):
www.worksafe.wa.gov.au

Part III General Provisions Relating to OS&H
Part IV Safety and Health Representatives and Committees
Part V Inspectors
Part VI Improvement and Prohibition Notices
Part VII Legal Proceedings

The Occupational Safety and Health Regulations 1996 (W.A.):
www.worksafe.wa.gov.au

Training Manual 16-1, Electrical & Electronic Safe Procedures (new ed)
available on" day release" loan from PO16 Store Balga Campus or weekly hire from the library CALL NUMBER V621.3028 ELE

Code of Practice – Safe electrical work on low voltage electrical installations
www.commerce.wa.gov.au/**energysafety**

Code of Practice for Persons working on or near energised electrical installations

St John's First Aid and C.P.R. Available library and or St Johns.

Standards Australia Wiring Rules AS/NZS 3000:2018 i.e.: Competent Person 1.4.34

2. Read the Summary and practise answering the Work Sheets and the Review Questions provided in the text **Electrical Wiring Practice**. Refer to other relevant texts if you feel it is necessary. Use a separate answer sheet or sheets for the Work Sheets.

3. Submit your answers to the Work Sheets to your Lecturer for discussion and feedback.

Topic 1 - Legal Requirements for Occupational Safety and Health

Occupational Safety and Health Act 1984

1. The **Occupational Safety and Health Act 1984** is an Act of the WA parliament which is intended mainly to promote and improve standards for occupational safety and health and provide a safe workplace. The Act details the legal responsibilities of various groups and individuals in matters relating to occupational safety and health, and establishes the Work-Safe WA Commission to administer the Act.

2. Read through the provided Occupational Safety and Health Act 1984 (WA) extracts and study the following aspects:

Topic
Duties of Employers (Para 19)
Duties of Employees (Para 20)
Functions of Safety and Health Representatives (Para 33)
Functions of Safety and Health Committees (Para 40)
Powers of Inspectors (Para 43)
Improvement Notices (Para 48)
Prohibition Notices (Para 49)

OCCUPATIONAL SAFETY AND HEALTH ACT 1984 - Extract

Version 07-h0-06

The Occupational Safety and Health Act 1984 is an act of WA parliament which is intended mainly to promote and improve standards for occupational safety and health. The act details the legal responsibilities of various groups and individuals in matters relating to occupational safety and health, and establishes the WorkSafe WA Commission to administer the Act. The paragraphs which follow are abbreviated extracts from the act.

Part III — General provisions relating to occupational safety and health
Division 2 — General workplace duties

19. Duties of Employers

(1) An employer shall, so far as is practicable, provide and maintain a working environment in which the employees of the employer (the ***employees***) are not exposed to hazards and in particular, but without limiting the generality of the foregoing, an employer shall —

(a) provide and maintain workplaces, plant, and systems of work such that, so far as is practicable, the employees are not exposed to hazards; and

(b) provide such information, instruction, and training to, and supervision of, the employees as is necessary to enable them to perform their work in such a manner that they are not exposed to hazards; and

(c) consult and cooperate with safety and health representatives, if any, and other employees at the workplace, regarding occupational safety and health at the workplace; and

(d) where it is not practicable to avoid the presence of hazards at the workplace, provide the employees with, or otherwise provide for the employees to have, such adequate personal protective clothing and equipment as is practicable to protect them against those hazards, without any cost to the employees; and

(e) make arrangements for ensuring, so far as is practicable, that —

(i) the use, cleaning, maintenance, transportation and disposal of plant; and

(ii) the use, handling, processing, storage, transportation and disposal of substances,

at the workplace is carried out in a manner such that the employees are not exposed to hazards.

(2) In determining the training required to be provided in accordance with subsection (1)(b) regard shall be had to the functions performed by employees and the capacities in which they are employed.

20. Duties of Employees

(1) An employee shall take reasonable care —

(a) to ensure his or her own safety and health at work; and

(b) to avoid adversely affecting the safety or health of any other person through any act or omission at work.

(2) Without limiting the generality of subsection (1), an employee contravenes that subsection if the employee —

(a) fails to comply, so far as the employee is reasonably able, with instructions given by the employee's employer for the safety or health of the employee or for the safety or health of other persons; or

(b) fails to use such protective clothing and equipment as is provided, or provided for, by his or her employer as mentioned in section 19(1)(d) in a manner in which he or she has been properly instructed to use it; or

(c) misuses or damages any equipment provided in the interests of safety or health; or

(d) fails to report forthwith to the employee's employer —

(i) any situation at the workplace that the employee has reason to believe could constitute a hazard to any person that the employee cannot correct; or

(ii) any injury or harm to health of which he or she is aware that arises in the course of, or in connection with, his or her work.

(3) An employee shall cooperate with the employee's employer in the carrying out by the employer of the obligations imposed on the employer under this Act.

Part IV — Safety and health representatives and committees
Division 1 — Safety and health representatives

33. Functions of Safety and Health Representatives

(1) The functions of a safety and health representative are, in the interests of safety and health at the workplace for which he or she was elected —

(a) to inspect that workplace or any part of it —

(i) at such times as are agreed with the employer; or

(ii) where he or she has not inspected the workplace, or that part of it, in the preceding 30 days, at any time upon giving reasonable notice to the employer;

(b) immediately, in the event of an accident, a dangerous occurrence, or a risk of imminent and serious injury to, or imminent and serious harm to the health of, any person, to carry out any appropriate investigation in respect of the matter;

(c) to keep himself or herself informed as to the safety and health information provided by his or her employer in accordance with this Act and liaise as necessary with the department and other Government and private bodies;

(d) forthwith to report to the employer any hazard or potential hazard to which any person is, or might be, exposed at the workplace that comes to his or her notice;

(e) where there is a safety and health committee for the workplace, to refer to it any matters that he or she thinks should be considered by the committee;

(f) to consult and cooperate with his or her employer on all matters relating to the safety or health of persons in the workplace;

(g) liaise with the employees regarding matters concerning the safety or health of persons in the workplace.

40. Functions of Safety and Health Committees

(1) In this section —

workplace, where an agreement under section 39E applies to the establishment of a safety and health committee, means any workplace in relation to which the committee may exercise functions.

(2) The functions of a safety and health committee are —

(a) to facilitate consultation and cooperation between an employer and the employees of the employer in initiating, developing, and implementing measures designed to ensure the safety and health of employees at the workplace; and

(b) to keep itself informed as to standards relating to safety and health generally recommended or prevailing in workplaces of a comparable nature and to review, and make recommendations to the employer on, rules and procedures at the workplace relating to the safety and health of the employees; and

(c) to recommend to the employer and employees the establishment, maintenance, and monitoring of programmes, measures and procedures at the workplace relating to the safety and health of the employees; and

(d) to keep in a readily accessible place and form such information as is provided under this Act by the employer regarding the hazards to persons that arise or may arise at the workplace; and

(e) to consider, and make such recommendations to the employer as the committee sees fit in respect of, any changes or intended changes to or at the workplace that may reasonably be expected to affect the safety or health of employees at the workplace; and

(f) to consider such matters as are referred to the committee by a safety and health representative; and

(g) to perform such other functions as may be prescribed in the regulations or given to the committee, with its consent, by the employer.

Part V — Inspectors

43. Powers of Inspectors

(1) An inspector may, for the purposes of this Act —

(a) at all reasonable times of the day or night, enter, inspect and examine any workplace;

(b) enter any workplace at any other time that the performance of his or her functions under this Act requires such entry;

(c) when entering any workplace, take with him or her such equipment and materials as he or she considers appropriate;

(d) conduct such examination and inquiry as he or she considers necessary to ascertain whether there has been compliance with this Act;

(e) examine any plant, substance or other thing whatsoever at the workplace;

(ea) provide information to any person for the purpose of facilitating compliance with this Act;

(f) take and remove samples of any substance or thing, without paying for it;

(g) take possession of any plant or thing for further examination or testing or for use as evidence;

(h) take photographs and measurements, and make sketches and recordings;

(i) require the production of, examine, and take copies or extracts of, any document;

(j) require that the workplace, or any part of it, be left undisturbed for as long as is specified in the requirement;

(k) in accordance with subsections (1b) and (1c), interview any person who the inspector has reasonable grounds to believe —

(i) is, or was at any time during the preceding 3 years —

(I) an employee working at a workplace; or

(II) an employee occupying residential premises mentioned in section 23G(2),

in relation to which the inspector is inquiring; or

(ii) was at such a workplace or such residential premises at a time that is relevant to a matter about which the inspector is inquiring; or

(iii) may otherwise be able to provide information relevant to a matter about which the inspector is inquiring;

(l) require any person whom the inspector interviews under paragraph (k) to answer any questions put to him or her and, if the inspector considers it appropriate, to verify any such answer by statutory declaration;

(m) require any person to state his or her name and address;

(n) require the employer or any person who works at a workplace to render such assistance to the inspector as the inspector considers necessary for the performance of his or her functions under this Act;

(o) exercise such other powers as may be conferred on him or her by the regulations or as may be necessary for the performance of his or her functions under this Act.

(1a) In subsection (1) —

workplace includes residential premises that an employer is or was under a duty to maintain by virtue of section 23G(2).

(1b) An interview referred to in subsection (1)(k) is to be conducted in private if —

(a) the inspector considers that to be appropriate; or

(b) the person to be interviewed so requests,

but this subsection does not limit the operation of subsection (2) or section 44.

(1c) Subsection (1b) may be invoked during an interview by —

(a) the inspector; or

(b) the person being interviewed,

in which case that subsection applies to the remainder of the interview.

(2) In exercising any of his or her powers under this Act an inspector may be accompanied by any other person whose assistance the inspector considers necessary, and that person may do such things as are necessary to assist the inspector in the performance of his or her functions, and any thing so done shall be deemed to have been done by the inspector.

(3) In carrying out the functions of an inspector under this Act, an inspector shall act in such a manner as to avoid unduly or unreasonably interfering with any work or work process or affecting adversely a covert operation within the meaning of section 4A(1).

Part VI — Improvement and prohibition notices

Division 1 — Issue of notices by inspector

48. Improvement Notices, Issue and Effect of

(1) Where an inspector is of the opinion that any person —

(a) is contravening any provision of this Act; or

(b) has contravened a provision of this Act in circumstances that make it likely that the contravention will continue or be repeated,

the inspector may issue to the person an improvement notice requiring the person to remedy the contravention or likely contravention or the matters or activities occasioning the contravention or likely contravention.

(2) An improvement notice shall —

(a) state that the inspector is of the opinion that the person —

(i) is contravening a provision of this Act; or

(ii) has contravened a provision of this Act in circumstances that make it likely that the contravention will continue or be repeated;

and

(b) state reasonable grounds for forming that opinion; and

(c) specify the provision of this Act in respect of which that opinion is held; and

(d) specify the time before which the person is required, to remedy the contravention or likely contravention or the matters or activities occasioning the contravention or likely contravention; and

(e) contain a brief summary of how the right to have the notice reviewed, given by sections 51 and 51A, may be exercised.

(3) A person, other than the employer, issued with an improvement notice shall forthwith give the notice, or a copy of it, to the employer, and where —

(a) under subsection (1), an improvement notice is issued to an employer;

or

(b) under this subsection an improvement notice, or a copy thereof, is given to an employer,

the employer shall cause the notice, or a copy of it, to be displayed in a prominent place at or near any workplace affected by the notice.

(3a) A person shall not remove an improvement notice displayed under subsection (3) before the requirements of that improvement notice have been satisfied.

(3b) Subsection (3a) does not apply in respect of an improvement notice that is suspended under section 51 or 51A or that has ceased to have effect.

(3c) If an improvement notice is issued —

(a) to a self-employed person in respect of a contravention of section 21; or

(b) to a body corporate to which section 21B applies in respect of a contravention of that section,

the person or body shall comply with subsection (3) and (3d) as if the person or body were an employer.

(3d) If an improvement notice is modified by the Commissioner under section 51(5)(b), the employer shall cause a copy of the Commissioner's decision to be displayed with the improvement notice, or a copy of it, as required by subsection (3).

(4) Subject to sections 51 and 51A, if a person —

(a) is issued with an improvement notice; and

(b) does not comply with the notice within the time specified in it,

the person commits an offence.

(5) A person issued with an improvement notice commits an offence if the Commissioner is not notified forthwith upon the requirements of the improvement notice being satisfied.

(6) If a person contravenes subsection (3), (3a), (3c) or (3d), the person commits an offence.

49. Prohibition Notices, Issue and Effect of

(1) Where an inspector is of the opinion that an activity is occurring or may occur at a workplace which activity involves or will involve a risk of imminent and serious injury to, or imminent and serious harm to the health of, any person, the inspector may issue to a person that is or will be carrying on the activity, or a person that has or may be reasonably presumed to have control over the activity, a prohibition notice prohibiting the carrying on of the activity until an inspector is satisfied that the matters which give or will give rise to the risk are remedied.

(2) An inspector who issues a prohibition notice, other than in respect of an activity as defined in subsection (7), shall remain at the workplace until the employer has been advised of the notice and, where the notice is in respect of an activity that is occurring, the prohibited activity has ceased.

(3) A prohibition notice shall —

(a) state that the inspector is of the opinion that in the workplace there is occurring or may occur an activity which involves or will involve a risk of imminent and serious injury to, or imminent and serious harm to the health of, a person; and

(b) state reasonable grounds for forming that opinion; and

(c) specify the activity which in the inspector's opinion involves or will involve the risk and the matters which give or will give rise to the risk; and

(d) where in the inspector's opinion the activity involves a contravention or likely contravention of any provision of this Act, specify that provision and state the reasons for that opinion; and

(e) contain a brief summary of how the right to have the notice reviewed, given by sections 51 and 51A, may be exercised.

(4) A person, other than the employer, to whom a prohibition notice is issued shall forthwith give the notice, or a copy of it, to the employer, and where —

(a) under subsection (1), a prohibition notice is issued to an employer; or

(b) under this subsection a prohibition notice, or a copy thereof, is given to an employer,

the employer shall cause the notice, or a copy of it, to be displayed in a prominent place at or near any workplace affected by the notice.

(4a) A person shall not remove a prohibition notice displayed under subsection (4) before the requirements of that prohibition notice, taking into account any modifications made under section 51(5), have been satisfied or the prohibition notice has ceased to have effect.

(4b) If a prohibition notice is issued —

(a) to a self-employed person in respect of a contravention of section 21; or

(b) to a body corporate to which section 21B applies in respect of a contravention of that section,

the person or body shall comply with subsection (4) and (4c) as if the person or body were an employer.

(4c) If a prohibition notice is modified by the Commissioner under section 51(5)(b), the employer shall cause a copy of the Commissioner's decision to be displayed with the prohibition notice, or a copy of it, as required by subsection (4).

(5) Subject to sections 51 and 51A, if a person issued with a prohibition notice does not comply with the notice, the person commits an offence.

(6) If a person contravenes subsection (4), (4a), (4b) or (4c), the person commits an offence.

(7) The application of this section extends to residential premises that are being or may be occupied by an employee as mentioned in section 23G(2), and for that purpose —

(a) in this section —

(i) ***workplace*** includes such premises; and

(ii) references to imminent and serious injury to, or imminent and serious harm to the health of, a person are to be read as applying only to an employee;

and

(b) in this section and section 50 ***activity*** includes the occupation of such premises.

Topic 1 – Questions

1. What is the stated purpose of the Occupational Safety and Health (OS&H, OH&S) Act 1984?

2. How does the OS&H Act benefit you as an employee?

3. State the underlying principles of OS&H

4. What are the objectives of the OS&H Act 1984?

5. What is the purpose of the OS&H Regulations 1996?

6. What is meant by the term **'Duty of Care'** in relation to Occupational Safety and Health?

7. List FOUR **'Duties of Care'** which are the responsibility of the employer in relation to OS&H? State clause number

8. List FOUR **'Duties of Care'** which are the responsibility of the employee in relation to OS&H? State clause number

9. The primary responsibility for safety in the workplace rests with?

10. List the three responsibilities of an individual AND State the clause number:

11. What two actions must an employee take if they become aware of a situation which is hazardous?

12. What are five of the functions of a Safety and Health Committee? State clause number:

13. What are four of the functions of a Safety and Health representative? State clause number

14. Worksafe WA inspectors are empowered to issue two types of notices if they are of the opinion that the OS&H Act is being contravened. What are the names given to each of the notices? State clause number:

15. List four of the powers of a Worksafe WA inspector. State clause number:

16. What might happen if a job site is deemed non-compliant with OS&H by an inspector?

17. Why should good housekeeping be done?

18. State five potential hazards in relation to improper housekeeping:

19. State why PPE must be appropriate to the task.

20. State a hazardous situation that will require PPE and how you can ensure the suitability of the PPE.

Topic 2 - The Work Environment

1. Safety is a process which results in the avoidance of injury to individuals or groups, and the avoidance of damage to equipment or machinery. The following notes are a summary of the most important facts and procedures relating to general safety in situations in which tradespersons may be required to work. More specific aspects are covered during appropriate parts of the course.

2. Safety considerations apply to:

    a. The individual.
    b. The machine being operated.
    c. The equipment or work piece on which work is being done.

3. The PRIMARY responsibility for safety in the workplace rests with the INDIVIDUAL. It is the individual's responsibility to ensure that:

    a. Conditions under which they are working are safe for themselves and others in the vicinity.
    b. Their actions are safe.
    c. Unsafe or unhealthy conditions are reported promptly.

4. **Common Hazards at Workplaces include:**

- **Manual Tasks and Ergonomics** – manual tasks hazards are activities that could cause damage to the muscles and/or skeleton. They include lifting heavy objects, handling of people, animals, goods or materials, repetitive movements, having an awkward posture or the same posture for a long period of time and using plant, tools or equipment that vibrate. ‘Ergonomic hazards’ means things like workstations, workbenches, computer screens and seats that result in workers adopting unsafe working positions and/or actions;

- **Mobile Plant, Equipment and Vehicles** – for example, potential situations where workers and visitors could come into accidental contact with cars or forklifts;

- **Electricity** – electrical hazards may include activities that could cause sparks and start a fire, cords, plugs and sockets in poor condition and live electrical wires;

- **Working at Heights** – ie activities where there is a risk of a fall, for example from an unguarded edge;

- **Slips, Trips and Falls** – risk factors that may lead to a trip, slip or fall, including the movement of people through the workplace, the working environment (for example, wet or slippery floors and steps), poor housekeeping and inappropriate footwear;

- **Mechanical Hazards** – this means plant, equipment and items (and parts of them) that have the potential to cut, rip, tear, abrade, crush, penetrate, produce projectiles or cause sudden impact. This includes unguarded dangerous or moving parts of plant like cutting, grinding, pressing or rolling parts where there is a risk of contact.

- **Hazardous Chemicals** – this means chemicals (such as acids, solvents and heavy metals), dusts (such as asbestos and silica) and vapours (such as paint fumes) that could affect a

person's health (for example, cause respiratory illness, dermatitis or cancer). It also means substances that have physical or chemical hazards (for example explosive, flammable or corrosive substances);

- **Extreme Temperatures** – for example, situations where heat could cause burns, heat stroke or fatigue or cold could cause hypothermia or frost bite;

- **Noise** – for example, situations where exposure to loud noise could result in permanent hearing damage;

- **Radiation** – this includes ultra violet light, welding arc flashes, microwaves and lasers that could cause burns, cancer or blindness;

- **Biological Hazards** – for example, contact with microorganisms that could cause hepatitis, Legionnaires' disease, Q fever, HIV/AIDS or allergies. For example, contracting a disease as a result of being injured by a syringe containing contaminated blood or breathing in small particles of bacteria from animal body fluids, which leads to the development of Q fever;

- **Unstable Objects** – ie objects and materials that could fall over or on top of people, for example overloaded racking;

- **Psychosocial Hazards** – this means workplace bullying, violence and aggression (from customers or staff) that could lead to psychological illness including work-related stress or work-related fatigue.

5. A piece of plant, substance or work process may have different hazards and each of these needs to be identified. For example, a production line may have mechanical hazards, noise hazards, electrical hazards and manual tasks hazards.

6. The risks associated with these hazards are controlled by use of some or all of the following procedures or equipment and forms what is known as the hierarchy of OH&S hazard control measures:

A	Elimination of the hazard	Examples include the proper disposal of redundant items of equipment that contain substances such as asbestos, or PCBs, the removal of excess quantities of chemicals accumulated over time in a laboratory, etc. The elimination of a hazard is a 100% effective control measure.
B	Substitution of the hazard	Examples include the replacement of solvent-based printing inks with water-based ones, of asbestos insulation or fire-proofing with synthetic fibres or rockwool, the use of titanium dioxide white pigment instead of lead white, etc. The effectiveness of this form of control is wholly dependent on the choice of replacement.
C	Isolation of the hazard	Examples include placing a particular piece of machinery in a place where only trained staff are required to interact with it (i.e. removing or separating workers from a particular hazard where possible).
D	Engineering Controls	Examples include the installation of machine guards on hazardous equipment, the provision of local exhaust ventilation over a process area releasing noxious fumes, fitting a muffler on a noisy exhaust pipe, etc. The effectiveness of engineering controls is generally around 70-90%.
E	Administrative Controls	Examples include training and education, job rotation to share the load created by a demanding task or tasks, planning, scheduling certain jobs outside normal working hours to reduce general exposure (e.g. planning demolition and building works during summer recess), early reporting of signs and symptoms, instructions and warnings, etc. The effectiveness of administrative controls generally ranges from 10-50%. they typically require significant resources to be maintained over long periods of time for continuing levels of effectiveness. They are also generally highly dependent on worker behaviour.
F	Personal Protective Equipment (PPE)	Examples include safety glasses and goggles, earmuffs and earplugs, hard hats, toe capped footwear, gloves, respiratory protection, aprons, etc. Their effectiveness generally does not exceed 20%.

Risk Assessment

7. Risk assessment is a process for developing knowledge and understanding about hazards and risks so that good decisions can be taken about controlling them. A basic risk assessment follows these four steps.

1. Gather information about each hazard that you identify.

    - This is because in many cases, incidents occur as a result of a chain of events and a failure of one or more links in that chain. More information will enable better controls to be put in place.

2. Work out the likelihood of an accident or incident occurring. Consider how many people are likely to be exposed to each hazard and for how long.

    - Increased likelihood or exposure requires an immediacy to control the hazard

3. Assess the consequences. Use the information you have gathered to assess the potential consequences of each hazard. For example, could people:

    - die;
    - suffer major injuries (with significant long term effects);
    - suffer minor injuries (usually requiring several days off work); or
    - suffer negligible injuries (maybe needing first aid)?

    - Where the hazard or risk has the potential to cause death, serious injury or illness, your focus should be on a control that will eliminate or reduce an injury or harm occurring, rather than reducing the chance that an accident could occur.

4. Rate the risk. Use a risk rating like the risk rating table shown to work out the risk associated with each hazard.

Risk Rating Table

Likelihood of injury or harm to health	Consequences of any injuries or harm to health			
	Insignificant eg no injuries	Moderate eg first aid/medical treatment	Major eg extensive injuries	Catastrophic eg fatalities
Very likely	High	Extreme	Extreme	Extreme
Likely	Moderate	High	Extreme	Extreme
Moderate	Low	High	Extreme	Extreme
Unlikely	Low	Moderate	High	Extreme
Highly unlikely (rare)	Low	Moderate	High	High

Documentation

8. When implementing controls, you will usually record documentation via JSA's or the like that shows the:

- hazards identified
- assessment of the risks associated with those hazards
- decisions on control measures to manage exposure to the risks
- how and when the control measures are implemented
- evidence of monitoring and review of the effectiveness of the controls
- any checklists used in the process.

Worksafe WA also recommends that you:

- develop a safe work procedure that describes the task, identifies the hazard and outlines how the task is to be carried out to minimise the risk of being injured or harmed;
- train workers in the safe work procedure; and
- ensure there is adequate supervision so the new safe work procedure is followed.

JOB SAFETY ANALYSIS WORKSHEET

JSA No.: _____

Date:

Risk: H = High
S= Significant
M = Medium
L = Low

	A	B	C	D	E
1	H	H	H	S	S
2	H	H	S	S	M
3	H	H	S	M	L
4	H	S	M	L	L
5	S	S	M	L	L

Probability:

A – common or repeating occurrence
B – known to occur or "It has happened"
C – could occur, "I've heard of it happening"
D – not likely to occur
E – practically impossible

Consequences:

People:
1 – fatality or permanent disability
2 – lost time injury or illness
3 – medical treatment
4 – first aid treatment
5 – incident report only

Environment:
1 – toxic release off site with detrimental effect
2 – off site release with no detrimental effect
3 – off site release contained with outside assistance
4 – on site release immediately contained
5 – no environmental impact

STEP NO	JOB STEP List the steps required to perform the task in the sequence they are carried out.	POTENTIAL HAZARD Against each step list the potential risk/ hazards that could cause injury / damage when the task step is performed.	Probability	Consequence	Risk Rank L S M H	REQUIRED HAZARD CONTROL For each hazard identified list the control measures required to eliminate or minimise the risk of injury.	RESPONSIBILITY Nominate the person who will be required to action the control measures
1							

Job Safety Analysis Work Team Sign-on/ Review Register

Personnel are required to sign this register to indicate they have read, understand and will adhere to the requirements of the JSA

This JSA covers:				JSA No	
Name	Employee Signature	Date	Name	Employee Signature	Date

Symbolic Safety Signs

9. Employers are responsible for the supply and erection of safety signs in the workplace to ensure to provide and maintain workplaces, plant, and systems of work such that, so far as is practicable, the employees are not exposed to hazards.

10. AS 1319 describes an organised international system of identifying hazards by the use of easily recognised safety signs. The system uses a symbol (picture) in conjunction with a standard shape and colour. The types of signs are:

a. **Prohibitory** (do not)
Prohibition signs are a red ring with a diagonal red line with a standard symbol inside the ring - e.g. Do not smoke and Do not enter - authorised personnel only.

b. **Mandatory** (must use)
Mandatory signs are a blue disc with a white symbol - e.g. Must use Head protection, Must use eye protection and Must use foot protection. These are often used in conjunction with blue lines on the floor indicating that it is mandatory to wear PPE beyond that point.

c. **Caution** (be careful)

Caution signs are a yellow triangle with a black border with a symbol inside the triangle e.g. Be careful -electric shock hazard and Be careful - fire hazard. These are often used in conjunction with yellow lines on the floor indicating caution to be exercised beyond that point.

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d. **Emergency Information** (where to find)
General emergency signs are a green square with a white symbol - e.g. First aid station and Emergency exit.

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e. **Fire Emergency Information** (where to find)
All fire emergency signs are a red square with white lettering - e.g. Fire hose and Fire extinguisher.

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Workplace Emergencies

11. There are a number of different emergencies that need contingencies to be planned for:
    - fire;
    - gas leak;
    - injuries;
    - rescues;
    - incidents with hazardous substances;
    - bomb threats;
    - armed confrontations; and
    - natural disasters.

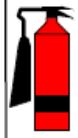
12. There must be in place a suitable evacuation procedure in place for each of these emergencies. This means that are procedures prepared and on display, with diagrams showing exits and the position of the person reading, and they are practiced at regular intervals.

Types of Fires and Extinguishers

13. The type of fire is determined by the material on fire and there are six main categories. A – Flammable solids (wood, paper, plastic etc.), B – Flammable Liquids, C – Flammable Gasses, D – Flammable Metals, E – Electrical equipment, and F- Cooking oils and fats.

14. There are seven types of fire extinguishers including the use of a fire blanket. They are Water, Wet chemical, Foam, Powder (ABE & BE), Carbon Dioxide, Vaporizing Liquid, and Fire Blanket

15. The type of extinguisher to be used on a particular class of fire is shown below: (Table A1 from AS 2444-2001)

Type of extinguisher			Type of Fire, Class and Suitability						Comments (Refer Appendix B)
			A	B	C	E	F	D**	
Colour scheme AS/NZS1841 -1997	Colour scheme AS1841 -1992	Extinguishant	Wood, paper, plastics,etc	Flammable liquids	Flammable gases	Energized electrical equipment	Cooking oils and fats	Metal fires	
		Water							Dangerous if used on flammable liquid, energized electrical equipment and cooking oil/fat fires
		Wet Chemical							Dangerous if used on energized electrical equipment
		Foam***					 LIMITED*		Dangerous if used on energized electrical equipment.
		Powder ABE							Special powders are available specifically for various types of metal fires (see **).
		Powder BE							
		Carbon Dioxide	 LIMITED*	 LIMITED*					Generally not suitable for outdoor use. Suitable only for small fires.
		Vaporizing Liquid		 LIMITED*	 LIMITED*				Check the characteristics of the specific extinguishant.
		Fire Blanket	 Human torch						

* Limited indicates that the extinguishant is not the agent of choice for the class of fire, but that it will have a limited extinguishing capability.
** Class D fires (involving combustible metals). Use only special purpose extinguishers and seek expert advice.
*** Solvents which may mix with water, e.g. alcohol and acetone, are known as polar solvents and require special foam. These solvents break down conventional AFFF.

FIGURE A1 PORTABLE FIRE EXTINGUISHER/FIRE BLANKET SELECTION CHART

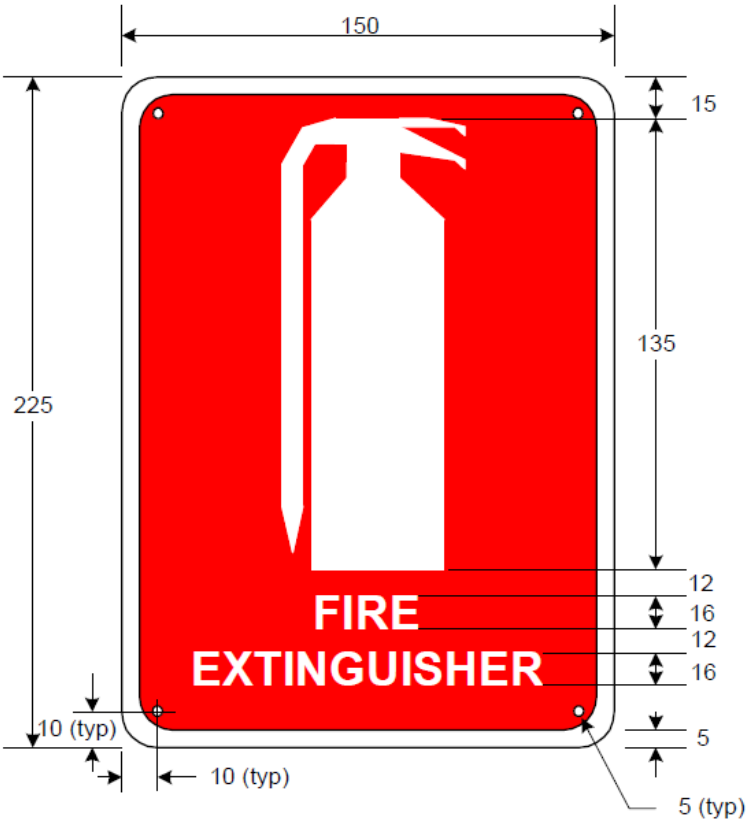
Extinguisher Location

16. AS 2444—2001 clause 3.2 sets out the following rules for fire extinguisher locations and mounting

17. Extinguishers shall not be located in positions where access could present a hazard to the potential user. Where practicable, extinguishers shall be located along normal paths of travel and near exits.

18. For all installations, extinguishers in and around buildings shall comply with Items (a) and (b) below. Domestic installation, defined as Class 1a building in the Building Code of Australia, is exempt.

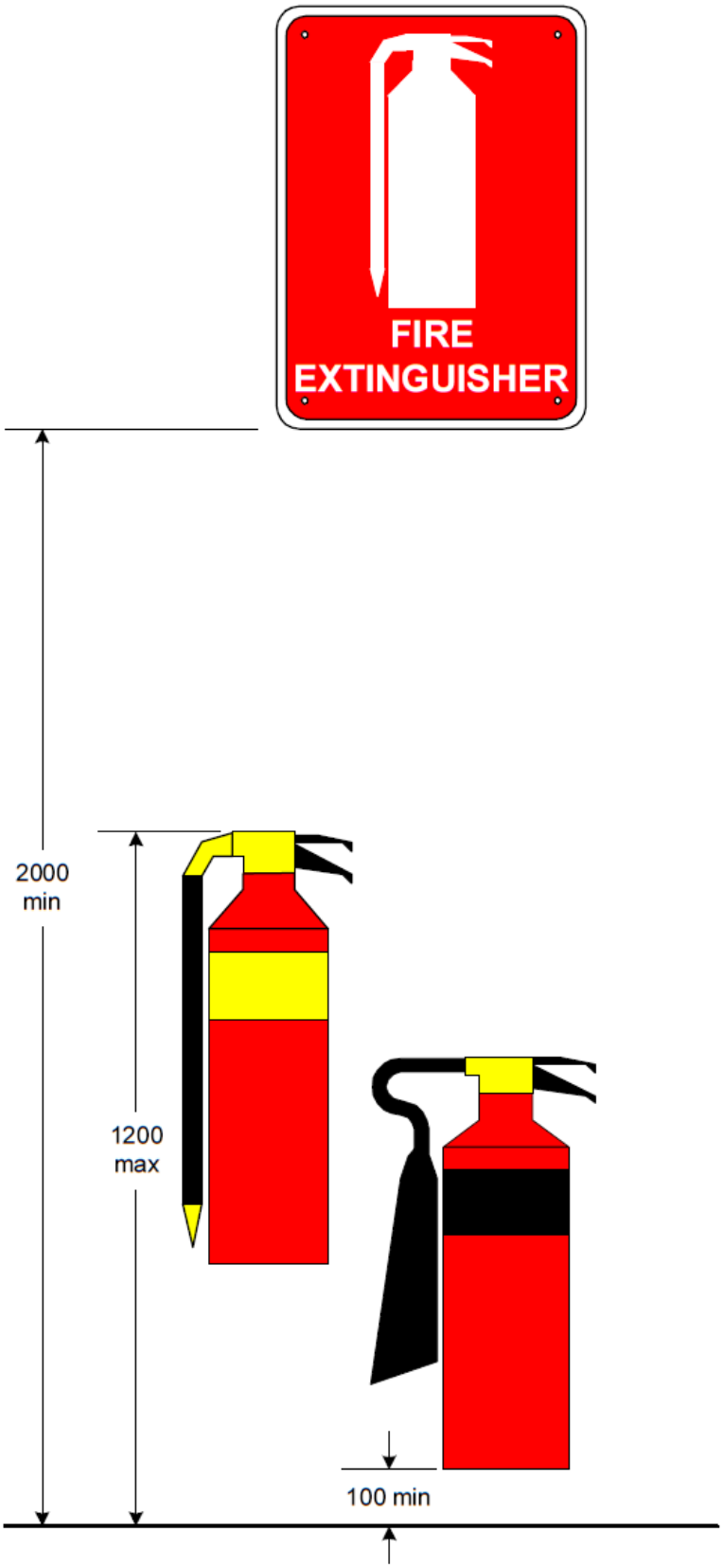
19. Extinguishers shall—
(a) have their locations clearly indicated by placement of the location sign as shown in Figure 3.1; and
(b) be mounted at the appropriate height shown in Figure 3.2 and varied only where there is a possibility of dislodgment and then only where ready accessibility is maintained.



DIMENSIONS IN MILLIMETRES

NOTE: All dimensions shown are minimum. Any enlargement of the sign should have all dimensions in proportion to those shown above.

FIGURE 3.1 TYPICAL EXTINGUISHER LOCATION SIGN



DIMENSIONS IN MILLIMETRES

FIGURE 3.2 MOUNTING HEIGHTS FOR PORTABLE FIRE EXTINGUISHERS AND LOCATION SIGNS

Combating Fires

20. The following points should be considered when combating fires:
(Refer Training Manual 16.1 Section 11 Page 85 -99)

- The first thing to do is raise the alarm
- Do not allow the fire to get between you and the exit.
- Crawl through a smoke filled room.
- Do not open windows to let smoke out.
- Use a correct extinguisher.
- Note the location of emergency exits.
- Read the local fire evacuation procedures (beforehand).
- Keep escape routes free from obstructions.
- Do not return a used extinguisher to a fire point.
- Evacuate the area if the fire cannot be controlled.
- Do not re-enter a burning building.

Importance of safe premises, buildings and security in an industrial setting and the consequences of non-compliance

21. Failure to provide a safe working environment may lead to injury or death. Even if there is no physical consequences, breaching the OS&H Act 1984 can lead to legal and fiscal penalties.

Topic 2 – Questions

1. State two typical hazards found in a domestic jobsite and the procedure used to control the risks associated with these hazards.

2. State two typical hazards found in a commercial jobsite and the procedure used to control the risks associated with these hazards.

3. State two typical hazards found in a industrial jobsite and the procedure used to control the risks associated with these hazards.

4. What are the four steps or principles of risk assessment and state the purpose of each?

5. When should a risk assessment be done?

6. What is the order from most effective to least effective for the hierarchy of OH&S hazard control measures?

7. Give an example of each hierarchy of OH&S hazard control measures and state why it may not be used or be effective.

8. What are the two documents required for risk assessment?

9. Referring to question 8. Explain how you use both and the differences between.

10. State the meaning of each sign shown below:

11. What are the five main safety signs?

12. How do you identify the safety signs?

13. List three workplace emergencies that would require an emergency workplace evacuation.

14. Write a brief but suitable procedure for an emergency workplace evacuation.

15. What type of extinguisher must never be used to combat an electrical fire?

16. What type of extinguisher should be used to combat a Class C fire?

17. State the type of Fire Extinguishers shown below:

18. What fire extinguishers are suited for an electrical fire?
19. Name two places you should never put a fire extinguisher.
20. Name two places you should never put a fire extinguisher.
21. What two places would you try and place fire extinguishers?
22. All fire extinguishers must be have their location indicated by?
23. Fire extinguishers must be mounted higher than_____ and lower than _____.
24. What is the first thing you must do if you discover an unwanted fire?
25. What is the first thing one must do when combating a fire?
26. How do you use an extinguisher?
27. Give two reasons why there must be safe premises, buildings and security in an industrial setting and the consequences of non-compliance.
28. What is a standard work procedure?
29. What is the purpose of a standard work procedure?

Topic 3 - Manual Handling

1. Working in the Electrotechnology industry requires a lot of manual handling and labour tasks. According to the Occupational Safety and Health Regulations 1996 manual handling means any activity requiring the use of force exerted by a person to lift, lower, push, pull, carry or otherwise move, hold or restrain a person, animal or thing. These tasks while not always directly hazardous, may due to poor work practices become an OS&H risk.

2. The most common forms of injuries are musculoskeletal disorders (such as sprains and strains, disc injuries and tendonitis) and hernias.

3. Being injured due to manual handling can result in both short and long term side effects. The short term effects may result in hospitalisation, the need for ongoing rehabilitation i.e. physiotherapist and an inability to perform certain tasks until the body has had time to recuperate. However certain injuries will result in long term adverse side effects similar to short term effects but may also result in the ongoing incapacity to perform certain tasks.

4. Certain situations to be aware of when working to minimise the risk of receiving a manual handling injury are:

    - Repetitive tasks
    - Carrying objects of any weight
    - Uneven surfaces

5. As mentioned poor work practices are one of the main causes of manual handling injuries. Listed below are some key steps or procedures for prevention of manual handling injuries:

    - When lifting always keep a straight back and bend with your knees
    - When carrying objects always keep fingers underneath rather than on the sides
    - Turn rather than twist
    - Clear a path to walk before attempting to carry or move an object
    - Never carry more than you are able to comfortably
    - Use appropriate lifting aids

Topic 3 – Questions

1. What are the two most common forms of manual handling injuries?

2. List one Manual Handling injury and describe the effect on a person's lifestyle.

3. State three examples of work practices that you may do to cause manual handling injuries.

4. State three examples of situations that you may do to cause manual handling injuries.

5. List six examples of work practices that will help prevent manual handling injuries.

6. State one Manual Handling injury and describe how you would prevent it.

Topic 4 - Chemicals in the workplace

1. Chemicals of various types can be found throughout the Electrotechnology industry. They include soldering fluxes, fuels, cleaners, glues, paints, solvents and many other substances in solid, liquid or gaseous form. The main risks associated with chemicals are the risk of fire or explosion, injury due to contact with the skin, or inhalation of visible or invisible vapours.

2. Hazardous substances may be in the form of a liquid, solid or gas. Examples are poisons, and substances that could cause burns, eye irritation or cancer. Hazardous substances are substances that meet criteria under either the AC classification system or the GHS classification system.

3. Dangerous goods are substances or articles that, because of their physical and chemical (physiochemical) or acute toxicity properties, present an immediate hazard to people, property or the environment. Many substances are both hazardous substances and dangerous goods, however there are substances that are hazardous substances but not dangerous goods, and vice versa.

4. A supplier of an Approved Criteria (AC) classified hazardous substance for use in a workplace must ensure that:

    - the container in which it is supplied is labelled in accordance with the requirements of the National Code of Practice for the Labelling of Workplace Substances [NOHSC: 2012(1994)]; and
    - the chemical name of any type II or type II ingredient is disclosed on the label or, where the identity of a type II ingredient is commercially confidential, the generic name of that ingredient.

5. A supplier of a Globally Harmonised System of Classification and Labelling of Chemicals (GHS) classified substance for use in the workplace must ensure that any container in which the substance is supplied is labelled in English with:

    - label information required by the Globally Harmonised System of Classification and Labelling of Chemicals 3rd revised edition (the GHS); and
    - the name of the supplier, their Australian address, their telephone number and an Australian emergency telephone number.

6. The supplier of hazardous substances and/or Dangerous Goods has a legal requirement to prepare an MSDS under Commonwealth, State and Territory legislation. The Material Safety Data Sheet (MSDS) must inform its audience of the possible hazards of a material, and provide information on the safe storage, handling and disposal of the material. An MSDS contains information on the potential health effects of exposure and how to work safely with the material. It also contains hazard information on the use, storage, handling and emergency procedures related to that material.

7. Chemicals be they hazardous, dangerous or otherwise must be stored in accordance with the instructions given on the MSDS. Examples of which can be found on manufactures websites.

8. MSDS are also now known as Safety Data Sheet (SDS).

Topic 4 – Questions

1. What is a hazardous substance and give an example?

2. What is a dangerous good and give an example?

3. Can a substance be both hazardous and dangerous?

4. How is a chemical classified?

5. Who does the classification?

6. What is required to be on the label of a chemical container?

7. What are two requirements for storing any chemicals?

8. How must fuel or other petrochemicals be stored?

9. Where can you find instructions on how to store chemicals?

10. What is the purpose of a MSDS?

11. List three pieces of information that must be on an MSDS.

Topic 5 - Working at heights

1. Working at heights either on roofs, ladders or scaffolding creates an increased risk of a potentially hazardous situation arising. This is due to the fact that working at heights will expose the worker to dangerous falls.

2. Ladders and scaffolds are dangerous items if misused. There is an increased risk of falling due to overreaching, unstable footing and placement, overloading, or moving of either ladder or scaffold with workers on. Care should also be taken when around overhead power lines.

3. Any change in height or difference between two levels requires the assessment of risk associated with falling. A difference of more than 2 meters is classed as high risk and requires the use of appropriate safety equipment to prevent a fall for example ladders or scaffolding. This equipment may also include control measure such as guard rails or other sorts of edge protection as well as the use of fall arrest and fall restraint harnesses.

4. The type of work to be performed will determine the type of ladder to be used and it is important the right type of ladder is used for the task at hand. Consideration should be given to the duration of the task, the physical surroundings of where the task is to be undertaken and the prevailing weather conditions. For example, metal ladders or metal reinforced ladders must not be used for live electrical work. Ladders used for construction work must be industrial grade, not domestic grade.

5. Before using a ladder it must be inspected for any damage and to ensure it will be safe to use. This is known as a safety check and should include inspections of things such as broken rungs, rails and footing. Consult the manufacturer's/suppliers' checklist, if available.

6. The Occupational Safety and Health Regulations 1996 Regulation 3.26 mandate that the person using the ladder has duties to:

    (1) If, at a workplace, a person uses either a single or extension ladder then the person must ensure that the ladder —

        (a) is placed so that the distance from the ladder base to the base of the support wall is about ¼ of the working length of the ladder; and

        (b) is located on a firm footing; and

        (c) is secured into position so as to prevent slipping or sideways movement; and

        (d) if being used to approach a platform, protrudes at least 900 mm beyond the landing for the platform; and

        (e) if being used at a workplace that is a construction site, is not suspended from a parapet hook.

    (2) If, at a workplace, a person uses —

        (a) a portable metal ladder then the person must ensure that the ladder is designed and constructed in accordance with the general requirements of AS/NZS 1892.1 and the specific requirements of that Standard in relation to the type of ladder; or

(b) a portable wooden ladder then the person must ensure that the ladder is designed and constructed in accordance with the general requirements of AS 1892.2 and the specific requirements of that Standard in relation to the type of ladder.

(3) A person must not use a ladder-bracket scaffold at a workplace unless the ladder-bracket scaffold is set up and used in accordance with clause 10.2.5 of AS/NZS 4576.

7. The National Code of Practice for the Prevention of Falls in Housing and Construction 2010 has the following in addition for the safe use of a ladder:
Persons using ladders must not:

- handle or use ladders where it is possible for the worker or the ladder to make contact with energised power lines, except where the person is qualified to do so
- use metal or metal reinforced ladders when working on live electrical installations
- set up the ladder in places, such as driveways and doorways, where a person or vehicle could hit it. If necessary, erect a barrier or lock the door shut
- use a stepladder near the edge of an open floor, penetration, or on scaffolding to gain extra height
- over-reach (the worker's belt buckle must be within the ladder stiles throughout the work)
- use any power (air, hydraulic, electric or battery) equipment or tool, specifically designed to be operated with two hands, such as concrete cutting saws and circular saws
- use tools which require a high degree of leverage type force which, if released, may cause the user to over balance or fall from the ladder, such as pinch bars
- carry out work such as arc welding or oxy cutting
- work over other people, or
- allow anyone else to be on the ladder at the same time.

Except where additional and appropriate fall protection equipment is used in conjunction with the ladder, any person using a ladder must not:

- face away from the ladder when going up or down, or when working from it
- stand on a rung closer than 900mm to the top of a single or extension ladder, or
- stand higher than the second tread below the top plate of any stepladder (with the exception of 3-rung step ladders).

8. Scaffolds are a common means of providing a safe platform for working at height. There is a wide variety of scaffold systems available. Scaffold working platforms are generally rated as light, medium or heavy duty:

- Light Duty – up to 225 kg per bay. Examples include painting, electrical work, many carpentry tasks and other light tasks. Platforms should be at least two planks wide (approximately 450mm)
- Medium Duty – up to 450 kg per bay. This is suitable for general trades work. Platforms should be at least four planks wide (approximately 900mm)
- Heavy Duty – up to 675 kg per bay. This is what is needed for bricklaying, concreting, demolition work and most other work tasks involving heavy loads or heavy impact forces. Platforms should be at least 5 planks wide (approximately 1000mm)
- Special Duty – has a designated allowable load as designed

9. Where work is performed from a scaffold, ensure that the relevant workers know:

- what loads it can safely take (Safe Working Load (SWL))
- that unauthorised alterations must not be made to the scaffold (such as removing guardrails, planks, ties, toeboards and braces)
- that working platforms need to be kept clear of debris and obstructions along their length, and
- that incomplete or defective scaffolds must never be accessed.

10. Where mobile scaffolds are in use, the scaffold must:

- remain level and plumb at all times
- be kept well clear of powerlines, open floor edges and penetrations
- never be accessed until all castors are locked to prevent movement, and
- never be moved while anyone is on the scaffold.

11. Elevating work platforms (EWPs) include scissor lifts, cherry pickers, boom lifts and travel towers. There are battery powered and internal combustion engine types. Some are designed for hard flat surfaces only, while others are designed to be operated on rough terrain.

12. The safety requirements include:

- workers operating the platform must be trained and instructed in safe operating procedures for the particular brand and type of equipment
- the platforms should only be used as working platforms. They should not be used as a means of access to and egress from a work area unless the conditions set out in AS 2550.10 are met
- unless designed for rough terrain, the platforms must be used only on a solid level surface
- the surface area must be checked to make sure that there are no penetrations or obstructions which could cause uncontrolled movement or overturning of the platform
- when designed as rough terrain platforms, the manufacturer's/suppliers' instructions should be consulted for information on safe operation
- the training provided must include safe use of the fall-arrest equipment and emergency rescue procedures, and
- people working in cherry pickers must wear an anchored safety harness and lanyard incorporating a shock absorber as precaution against mechanical failure of the basket. The lanyard should be as short as possible.

Topic 5 – Questions

1. State the dangers with working on ladders.

2. State the dangers with working on scaffolding.

3. What necessitates the need to check for fall risks?

4. Above what height difference is deemed to be high risk?

5. What safety equipment or control measures can be used to minimise this risk?

6. List three things that will need to be considered when selecting a ladder.

7. Is a metal ladder suitable for electrical work?

8. What must you do before using a ladder? And what are you looking for?

9. State the precautions and duties set out in the Occupational Safety and Health Regulations 1996 Regulations for a person using a ladder and clause number.

10. List three other precautions that should be followed.

11. State the precautions that should be followed when using a fixed scaffold.

12. State the precautions that should be followed when using a mobile scaffold.

13. State the precautions that should be followed when using a elevated work platform.

14. What piece of PPE must you wear in a cherry picker type elevated work platform?

15. Should you work below someone who is using scaffold or a EWP?

Simulated Work Task 1

Objective

To complete a JSA and use a step ladder safely.

Equipment

6’ A-frame step ladder.

Simulated Task

An exhaust fan in a domestic house needs to be replaced. The exhaust fan is connected via a socket in the roof space.

Procedure:

1. Prepare a JSA for the work task and get it signed off by your lecturer.
2. Perform a safety check of the step ladder.
3. Erect the ladder and demonstrate how to climb the ladder whilst carrying tools and performing simple job tasks.

During The Simulated Work Task The Student Demonstrated The Following:	S	NYS
Completion of JSA		
Checking of Rungs		
Checking of Styles		
Checking of Feet		
Checking of Locking mechanism		
Placed the ladder located on a firm footing		
Kept three points of contact at all times whilst climbing		
Did not over reach outside the ladder		
Carried the tools in an approved manner		
Was able to remove the exhaust cover while on a ladder safely		

Satisfactory:		Not Satisfactory:	

Lecturer: _____ Date: _____

JOB SAFETY ANALYSIS WORKSHEET

JSA No.: _____

Date:

Risk: H = High
S= Significant
M = Medium
L = Low

	A	B	C	D	E
1	H	H	H	S	S
2	H	H	S	S	M
3	H	H	S	M	L
4	H	S	M	L	L
5	S	S	M	L	L

Probability:

A – common or repeating occurrence
B – known to occur or "It has happened"
C – could occur, "I've heard of it happening"
D – not likely to occur
E – practically impossible

Consequences:

People:
1 – fatality or permanent disability
2 – lost time injury or illness
3 – medical treatment
4 – first aid treatment
5 – incident report only

Environment**:**
1 – toxic release off site with detrimental effect
2 – off site release with no detrimental effect
3 – off site release contained with outside assistance
4 – on site release immediately contained
5 – no environmental impact

STEP #	JOB STEP List the steps required to perform the task in the sequence they are carried out.	POTENTIAL HAZARD Against each step list the potential risk/ hazards that could cause injury / damage when the task step is performed.	Probability	Consequence	Risk Rank L S M H	REQUIRED HAZARD CONTROL For each hazard identified list the control measures required to eliminate or minimise the risk of injury.	RESPONSIBILITY Nominate the person who will be required to action the control measures

Job Safety Analysis Work Team Sign-on/ Review Register

Personnel are required to sign this register to indicate they have read, understand and will adhere to the requirements of the JSA

This JSA covers:				JSA No	
Name	Employee Signature	Date	Name	Employee Signature	Date

Simulated Work Task 2

Objective

To complete a JSA and use an extension ladder safely.

Equipment

Extension ladder.

Simulated Task

Gain access to a roof.

Procedure:

1. Prepare a JSA for the work task and get it signed off by your lecturer.
2. Perform a safety check of the extension.
3. Erect the ladder and demonstrate how to climb the ladder and foot the ladder.

During The Simulated Work Task The Student Demonstrated The Following:	S	NYS
Completion of JSA		
Checking of Rungs		
Checking of Styles		
Checking of Feet		
Checking of Locking mechanism		
Placed the ladder so that the distance from the ladder base to the base of the support wall is about ¼ of the working length of the ladder		
Placed the ladder located on a firm footing		
Secured into position via footing so as to prevent slipping or sideways movement		
Set the ladder to protrude greater than 900mm above the landing platform		
Kept three points of contact at all times whilst climbing		

Satisfactory:		Not Satisfactory:	

Lecturer: _____ Date: _____

JOB SAFETY ANALYSIS WORKSHEET

JSA No.: _____

Date:

Risk: H = High
S= Significant
M = Medium
L = Low

	A	B	C	D	E
1	H	H	H	S	S
2	H	H	S	S	M
3	H	H	S	M	L
4	H	S	M	L	L
5	S	S	M	L	L

Probability:

A – common or repeating occurrence
B – known to occur or "It has happened"
C – could occur, "I've heard of it happening"
D – not likely to occur
E – practically impossible

Consequences:

People:
1 – fatality or permanent disability
2 – lost time injury or illness
3 – medical treatment
4 – first aid treatment
5 – incident report only

Environment:
1 – toxic release off site with detrimental effect
2 – off site release with no detrimental effect
3 – off site release contained with outside assistance
4 – on site release immediately contained
5 – no environmental impact

STEP #	JOB STEP List the steps required to perform the task in the sequence they are carried out.	POTENTIAL HAZARD Against each step list the potential risk/ hazards that could cause injury / damage when the task step is performed.	Probability	Consequence	Risk Rank L S M H	REQUIRED HAZARD CONTROL For each hazard identified list the control measures required to eliminate or minimise the risk of injury.	RESPONSIBILITY Nominate the person who will be required to action the control measures

Job Safety Analysis Work Team Sign-on/ Review Register

Personnel are required to sign this register to indicate they have read, understand and will adhere to the requirements of the JSA

This JSA covers:				JSA No	
Name	**Employee Signature**	**Date**	**Name**	**Employee Signature**	**Date**

Topic 6 - Confined Spaces

1. Regulation 3.82 of the Occupational Safety and Health Regulations 1996 defines a confined space as an enclosed or partially enclosed space which:

   (a) is not intended or designed primarily as a workplace;

   and

   (b) is at atmospheric pressure during occupancy; and

   (c) has restricted means for entry and exit,

   and which either —

   (d) has an atmosphere containing or likely to contain potentially harmful levels of contaminant; or

   (e) has or is likely to have an unsafe oxygen level; or

   (f) is of a nature or is likely to be of a nature that could contribute to a person in the space being overwhelmed by an unsafe atmosphere or a contaminant; contaminant means any substance, the presence of which may be harmful to safety or health.

2. In accordance with regulation 3.85 of the Occupational Safety and Health Regulations 1996, any work carried out in confined spaces must comply with Australian Standard AS 2865.

3. A person working in a designated confined space may be at risk of exposure to:

   - electrical shock or electrocution;
   - oxygen deficiency;
   - toxic gases or fumes;
   - engulfment/suffocation by solids;
   - fire and/or explosion;
   - drowning in liquids;
   - falls from height; and
   - environmental factors such as noise, extremes of temperature, poor lighting, manual handling and radiation.

4. Some examples of confined spaces include silos, pits, storage tanks, boilers, pipes, shafts and pressure vessels, sewer with access via vertical ladder, septic tanks, and trenches with limited access and risk of engulfment.

5. The following precautions should be undertaken as a minimum when working in confined spaces:

   - Never enter a confined space unless you are authorised to do so (a permit may be required).
   - Plan your exit so that you can get out quickly if you begin to feel dizziness, nausea or a headache.
   - Do not enter a confined space without an appropriate lifeline.
   - Do not enter a confined space unless there is another person outside.
   - Wear a respirator if there is any possibility of fumes being present in the confined space.

Topic 6 – Questions

1. List three hazards that can arise from working in a confined space.

2. How does the Occupational Safety and Health Regulations 1996 Regulations define a confined space? State clause number

3. Give two examples of a confined space and state why they are classed as confined spaces.

4. List five precautions or control measures for working in a designated confined space.

Topic 7 - Physical and psychological hazards

Excessive Noise

1. Hearing loss caused by noise is insidious and permanent. It can cause isolation at home and socially and decrease efficiency at work.

2. High pitched sounds, such as consonants and women's and children's voices, are the most affected by noise-induced hearing loss. Thus, while some sounds are still loud, others are filtered out and speech can't be understood. With more than one person speaking or a background noise, the problem is worse.

3. Ringing or other noises in the ears or head, known technically as tinnitus, can also be caused by excessive noise. It too can become permanent in some people and when severe may disrupt sleep, reduce concentration, make you extremely irritable and lead to depression.

4. The most effective and acceptable way to reduce noise in the workplace is to change the noise source (such as a machine) so that it makes less noise. This may mean using a quieter process instead of a noisy one (such as pressing rather than hammering), reducing the amount of metal to metal impact, treating radiating panels or using vibration isolation mountings.

5. If the noise cannot be stopped, then try to stop it from reaching people. This may be done by moving the item further away, by enclosing it or partitioning it off from quieter areas, by using sound-absorbing materials to reduce the build-up of noise or by using silencers.

6. Personal hearing protectors should not be used as a substitute when engineering noise control or limiting exposure times are practicable. However, in situations where all measures have been undertaken but the reduced noise exposures are still above the exposure standard, personal hearing protectors must be supplied. They must also be supplied as an interim measure while the engineering noise control or time limits are being planned and implemented.

7. It is important that they must be chosen for their noise reduction characteristics, comfort and suitability for the job. The hearing protectors must be worn at all times workers are in hazardous noise. In high noise levels, removing the hearing protectors for very short periods (as little as half a minute) can drastically reduce the overall protection received.

Vibration

8. Vibration is classified into two groups Hand-Arm Vibration (HAV) and Whole Body Vibration (WBV). Hand–arm vibration is vibration transmitted to a person’s hand and arm when using hand-held power tools and hand-guided machinery like powered lawn-mowers and while holding materials being processed by machines. HAV is commonly experienced by people who use jackhammers, chainsaws, grinders, drills, riveters and impact wrenches. WBV is vibration transmitted to the whole body by the surface supporting it, for example through a seat or the floor. WBV is commonly experienced by drivers, operators and passengers in vehicles and machines when travelling over uneven surfaces. WBV is not restricted to seated work like driving and may be experienced while standing, for example standing on platforms attached to a concrete crushing plant. WBV includes sharp impact like shocks and jolts.

9. Regular long-term exposure to excessive HAV can disrupt a person’s circulation in their hand and forearm, and cause damage to nerves, tendons, muscles, bones and hand and arm joints. These conditions are collectively known as hand-arm vibration syndrome (HAVS) and include:

- Carpal tunnel syndrome – a disorder of the hand and arm which may involve tingling, numbness, pain and weakness in parts of the hand.
- Musculoskeletal disorders – muscular and vascular disorders like weakness, pain and stiffness in the joints of the hands and arms and little or no grip strength.
- Vibration white finger (Raynaud's phenomenon) – a sudden constriction of the blood vessels which slows blood flow to the extremities, most often fingers and toes. The skin will change in colour, usually accompanied by discomfort like pain, tingling and numbness. Severe cases can result in complete loss of touch sensation and manipulative dexterity which can interfere with work and increase the risk of acute injuries due to incidents.
- Dupuytrens contracture – fingers becoming permanently curled towards the palm and reduced grip strength.

10. Workers with HAVS may find it impacts their work, social and family life. Periodic attacks of reduced blood circulation may happen at any time and everyday tasks like handling small buttons on clothing, opening jars and turning door knobs may become difficult.

11. Exposure to WBV may cause or make worse:

- cardiovascular, respiratory, neurological, endocrine and metabolic changes
- digestive problems
- reproductive organ damage, and
- impairment of vision, balance or both.

12. Exposure to WBV may also cause discomfort, fatigue and other problems when work activities are being carried out. This could lead to incidents.

13. There is evidence to suggest that workers who are exposed to both vibration and noise are more likely to suffer hearing loss than workers exposed to the same level of noise alone. Exposure to both vibration and noise may also increase musculoskeletal problems.

Thermal Stress

14. In Western Australia, hot workplaces are common. Heat may come from:

- hot climatic conditions;
- heavy work in moderately hot conditions;
- hot work processes (such as welding);
- radiant heat from the surroundings;
- work where heavy protective clothing must be worn; or
- any combination of these factors.

15. The Occupational Safety and Health Act 1984 requires employers to provide and maintain, so far as is reasonably practicable, a working environment in which workers are not exposed to hazards. This applies to any risk to safety and health, including illness from working in heat.

16. Thermal stress is the total heat burden to which the body is subjected by both external and internal factors. The body must balance the heat transferred into the body and heat generated in the body with the heat coming out of the body. Heat illness occurs when the body cannot dispense the heat burden sufficiently for normal functioning to be maintained.

17. Heat illness covers a range of medical conditions which include:

- heat stroke – a life threatening condition that requires immediate first aid and medical attention;
- fainting;
- heat exhaustion;
- heat cramps;
- rashes (also called 'prickly heat'); and
- heat fatigue.

18. Signs of heat illness include feeling sick, nauseous, dizzy or weak. Clumsiness, collapse and convulsions can also be the result of heat illness and workers with these signs need to seek immediate medical attention. Working in hot conditions may aggravate pre-existing illnesses and conditions.

19. There is a recommended order of control measures that eliminate or reduce the risks of injury or harm. Often a combination of controls will be necessary. Examples of these follow.

20. **Engineering**
Engineering controls are an effective way of reducing heat stress and preventing or minimising occurrence of heat illness. Examples include:

- increasing air movement using fans;
- installing shade cloth to reduce radiant heat from the sun;
- installing shields or barriers to reduce radiant heat from sources such as furnaces or hot vessels;
- removing heated air or steam from hot processes using local exhaust ventilation;
- installing air conditioners or coolers to reduce air temperature;
- locating hot processes away from people; and
- insulating /enclosing hot processes or plant.

21. **Organisation of work**
Heat stress can be reduced by attention to the way work is organised. Examples include:

- rescheduling work so the hot tasks are performed during the cooler part of the day or in cooler times of the year;
- reducing the time an individual spends doing the hot tasks eg by job or task rotation;
- arranging for more workers to do the job;
- providing additional rest breaks in cool, shaded areas; and
- using mechanical aids to reduce physical exertion.

22. **Providing training and information**
Training and information will enable workers to:

- identify hazards associated with heat stress;
- recognise symptoms of heat stress and heat illness;

- identify appropriate first aid procedures;
- understand how to avoid heat illness;
- recognise the potential dangers associated with the use of alcohol and/or drugs; and
- use appropriate protective clothing and equipment.

23. Toolbox meetings and pre-start meetings present opportunities to reinforce the actions needed to avoid heat illness.

24. **Providing personal protective clothing**
Providing personal protective equipment (PPE) such as reflective aprons and face shields can reduce exposure to radiant heat. Ice vests and liquid and air circulating systems can be worn under PPE where appropriate. Outdoor workers should be provided with protection against ultraviolet exposure, such as a wide brim hat, loose fitting, long sleeved collared shirt and long pants, sunglasses and sunscreen.

Ultraviolet Radiation (UV)

25. The sun produces many different types of radiation. One type of radiation is infrared radiation, which provides heat. Another type of radiation is ultraviolet (UV) radiation.

26. Prolonged and repeated sun exposure can result in the following:

- Skin and eye damage
- Sunburn
- Keratoses or sunspots
- Premature ageing
- Wrinkles
- Skin pigmentation and discolouration
- Eye injuries and diseases
- Inflammation and irritation
- Cataracts - cloudiness of the eye lens
- Pterygium (tur-rig-i-um), an overgrowth of the white conjunctiva onto the cornea
- Cancer of the eye and of the skin surrounding the eyes

27. Australia, particularly Western Australia, experiences high levels of UV radiation most of the year. Even on cool, cloudy days, UV radiation can be strong enough to damage the skin. When working outdoors, the Cancer Council WA and WorkSafe recommend five simple steps to protect your skin and eyes against sun damage:

28. **SEEK** to reduce exposure to the sun's UV radiation

- Work and take breaks in the shade.
- Where no shade exists, use temporary portable shade.
- Plan to work indoors or in the shade during the middle of the day when UV levels are strongest.
- Plan to do outdoor work tasks early in the morning or later in the afternoon when UV levels are lower.
- Share outdoor tasks and rotate staff so the same person is not always out in the sun.

29. **SLIP** on sun-protective work clothing

- Cover as much skin as possible.
- Long pants and work shirts with a collar and long sleeves are best.
- Choose lightweight, lightly coloured material with a UPF 50+ rating.
- Choose loose fitting clothing to keep cool in the heat.

30. **SLOP** on SPF30+ sunscreen

- No sunscreen provides complete protection so never rely on sunscreen alone.
- Choose sunscreen that is broad spectrum and water resistant.
- Apply sunscreen generously to clean, dry skin 20 minutes before you go outdoors.
- Reapply every two hours or more often when sweating.
- Protect your lips with a SPF 30+ lip balm.
- Always check and follow the use by date on sunscreen.

31. **SLAP** on a hat

- A hat should shade your face, ears and neck.
- A broad brimmed styled hat should have at least a 7.5 cm brim.
- A bucket style hat should have a deep crown, angled brim of 6 cm and sit low on the head.
- Legionnaire style hats should have a flap that covers the neck and joins to the sides of the front peak.
- If wearing a hard hat or helmet use a brim attachment or use a legionnaire cover.

32. **SLIDE** on some sunglasses

- Wear close fitting, wrap around style sunglasses.
- When buying new sunglasses, check the swing tag to ensure they meet the Australian Standard (AS 1067:2003 - category 2, 3 or 4) and are safe for driving.
- Look for an EPF (eye protection factor) of 10.
- Safety glasses that meet AS/NZS 1337 still provide sun protection.
- Polarised lens reduce glare and make it easier to see on sunny days.

Laser Operated Equipment And Tools

33. Laser beams may cause damage to eyes or skin. The risk of eye injury from laser light and heat is particularly of concern as eyes focus and intensify light entering them. Repeated exposure to relatively low powered lasers, or from a single exposure to medium powered lasers may cause long term damage to sight or minor damage to skin. Exposure to high level lasers may cause depigmentation, severe burns and possible damage to underlying organs. High-powered lasers may also cause fire hazards.

34. Lasers may produce hazards from airborne contaminants released during laser use, collateral radiation, high voltage electricity, cryogenic coolants and flying particles during laser cutting or welding.

35. Competent persons must identify hazards and assess risks before lasers are first used. They should consider suitability of the laser type, the capability of the laser to injure people, the environment in which the laser is used, and operator training.

36. Where there is a risk to health and safety from laser use, employers should consider (in order of preference):

- eliminating laser use;
- substituting with a safer alternative;
- isolating the laser - a closed laser operation should be used where practicable;
- engineering controls - interlocks, workplace layout, shielding materials and warning signs;
- administrative controls - procedural and administrative control methods should ensure exposure limits are not exceeded; and
- personal protective equipment - eye protection and skin protection should be designed for the specific wavelength and power of the laser system used.

37. At all times, people should avoid looking into a laser beam or a laser reflection, even if the exposure limit is not exceeded.

Occupational Overuse Syndrome

38. Occupational Overuse Syndrome (OOS), also known as repetition strain injury (RSI), is a collective term for a range of conditions characterised by discomfort or pain in muscles, tendons and other soft tissues, with or without visible symptoms. It is usually associated with tasks which involve repetitive or forceful movement and maintenance of constrained or awkward postures.

39. Prevention and overcoming OOS can be achieved by varying the speed and type of tasks been performed. Repetitive short cycle tasks should be avoided.

Stress

40. According to the World Health Organization's (WHO) definition, work-related stress is 'the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope.'

41. Although there are many work-related risk factors that can lead to a psychological and physical injury, there are eight work-related risk factors that have been widely researched and are known to impact on employee well-being and adverse psychological and physical health.

42. These eight work-related risk factors are:

- **Autonomy/control**: the amount of authority the employee has over the way they do their job;
- **Job demands**: the amount of workload the employee has to complete, this includes timelines for completing work;
- **Support**: the level of support the employee perceives from management and colleagues;
- **Role conflict/ambiguity**: the extent that the employee's tasks and duties are clearly defined (ie understaffing can lead to employees doing tasks for more than one position);
- **Relationships**: the extent of good working relationships in the workplace. This can include the presence of bullying and harassment issues in the workplace;
- **Change**: involves planned and unplanned change in the work environment. Changes can occur at three levels: personal (ie changes to position and responsibilities), management (ie new supervisors or processes and procedures), and organisational (ie takeover, restructure or redundancies).

- **Rewards and recognition**: involves rewarding employee efforts and recognising individual and team contributions and achievements within the organisation.
- **Organisational justice**: refers to the perceptions of fairness about work procedures and how they are enacted. It involves procedural fairness and relational fairness. Procedural fairness refers to how procedures are implemented within the organisation. Relational fairness refers to the degree of dignity and respect afforded to a worker during the process.

43. **Environmental risk factors of work-related stress**

Physical and chemical risk factors (as well as biological agents) can influence employees' comfort and performance within the work environment and contribute to work-related stress. Environmental sources of work-related stress include:

- Noise
- Temperature and humidity
- Lighting
- Vibration
- Air quality
- Unguarded plant and machinery

44. **Individual risk factors of work-related stress**

People respond to work-related stress differently and this can, in part, be related (or contributed) to the person's previous experiences, coping styles, personality styles, available support and physiological factors which are external to the work environment. Differences in people's response to stress do not reduce employers' legal duty and responsibility to minimise exposure to work-related stress.

45. When an employee experiences adverse health effects from work-related stress they may experience symptoms and signs through four channels in their body: Physical, Emotional, Cognitive, and Behavioural. The figure below displays the signs and symptoms under each of the channels.

When an individual is experiencing work-related stress their behaviour and mood may be affected. This can include:

Physical	Cognitive	Emotional	Behavioural
Increased heart rate (pounding) Elevated blood pressure Sweaty palms; tightness in the chest Headaches Diarrhoea Tightness in neck/back muscles Trembling Tics or twitching Stuttering Other speech difficulties Pupil dilation Nausea and/or vomiting Sleep disturbance Fatigue Proneness to accidents Slumped posture Shallow breathing Susceptibility to minor illnesses Dryness of mouth or throat Butterflies in stomach	Forgetfulness Preoccupation Blocking Errors in judging distance Diminished or exaggerated fantasy life Reduced creativity Difficulty in making decisions Mental confusion Lack of concentration Diminished productivity Lack of attention to detail Orientation to past Over-sensitivity to criticism	Irritability Lowered self-esteem Angry outbursts Depression Jealousy Feeling 'up-tight' Suspiciousness Diminished initiative Loneliness Helplessness Insecurity Frustration Lack of interest Tendency to cry Critical of oneself and others Lacking in confidence Self-deprecation Exhaustion Desire to escape	Increased smoking Aggressive driving Having accidents Clumsiness Nervous laughter Panic Increased alcohol or drug abuse Carelessness Eating too much Fast (even incoherent) speech Chewing fingernails

46. Changes in workplace behaviour may also be observed when an employee is experiencing psychological symptoms and signs. This includes, but not limited to:

- Increased absenteeism from work
- Increased tardiness
- Increased sick leave
- Decline in productivity and performance standards
- Impaired concentration or ability to make decisions which increases the risk of injury
- Reluctance to return to workplace area where the event occurred (particularly in circumstances which involved aggression, violence and trauma).

47. **Management of stress**
The old adage 'prevention is better than cure' is certainly true for stress management. It will help if you:

- **Exercise regularly** – regular exercise is a great way to manage stress. You should do some form of exercise that causes you to feel puffed afterwards – a leisurely stroll to the bus stop is not enough! Have at least 20 minutes of exercise three times a week
- **Avoid conflict** – avoid situations that make you feel stressed such as unnecessary arguments and conflict (although ignoring a problem is not always the best way to reduce stress). Assertiveness is fine but becoming distressed is not
- **Relax** – give yourself some time to relax each day and try to spend time with people who make you feel good about yourself
- **Eat well** – a nutritious diet is important. Eat plenty of fresh fruit and vegetables and avoid sweet and fatty foods
- **Sleep** – a good sleep routine is essential. If you have difficulty falling asleep, do something calm and relaxing before you go to bed like listening to music or reading
- **Enjoy your life** – it's important to make time to have some fun and to get a balance in your life.

Alcohol And Other Drugs

48. Alcohol and other drugs usage becomes an occupational safety and health issue if a worker's ability to exercise judgment, coordination, motor control, concentration and alertness at the workplace is impaired, leading to increased risk of injury or incidents to themselves or others. Alcohol and other drugs use may lead to loss of life, injury and damage to plant or equipment. Employers have a general 'duty of care' obligation to ensure that, as far as practicable, workers are not exposed to hazards and risks that could arise from workers being impaired by alcohol and/or other drugs and, where they may arise, address them through a systematic risk management process.

49. Workers must take reasonable care of their own safety and health and not endanger the safety and health of others at the workplace. Co-workers may be placed in difficult situations, expected to cover unsafe work practices or faced with reporting a fellow worker. The consumption of alcohol and illicit drugs while at work is therefore unacceptable, except in relation to any authorised and responsible use of alcohol at workplace social functions. Workers should present themselves for work and remain, while at work, capable of performing their work duties safely.

Topic 7 – Questions

1. Give an example of both short term and long term effect of excessive noise.

2. List two techniques to avoid damage to hearing due to excessive noise.

3. Give two examples of the effect of vibration on the human body.

4. List two work practices to protect against vibration.

5. Give two examples of the effect of thermal stress on the human body.

6. List two work practices to protect against thermal stress on the human body.

7. Give two examples of the effect of ultraviolet (UV) radiation on the human body.

8. List five work practices to protect against ultraviolet (UV) radiation.

9. Give two examples of the dangers of laser operated equipment and tools.

10. List two work practices to protect against dangers caused laser operated equipment and tools.

11. What is occupational overuse syndrome?

12. How do you get occupational overuse syndrome?

13. What can you do to prevent and overcome occupational overuse syndrome?

14. What are the eight work related risk factors associated with stress?

15. List five symptoms of a person suffering from stress.

16. List six personal stress management techniques.

17. Describe the hazards and dangers of drug and alcohol use in the workplace.

18. Is the hazards and dangers of drug and alcohol abuse only relating to illicit drugs?

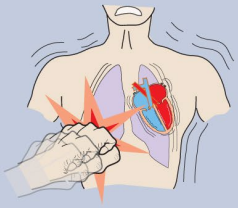
Topic 8 - Working safely with electricity

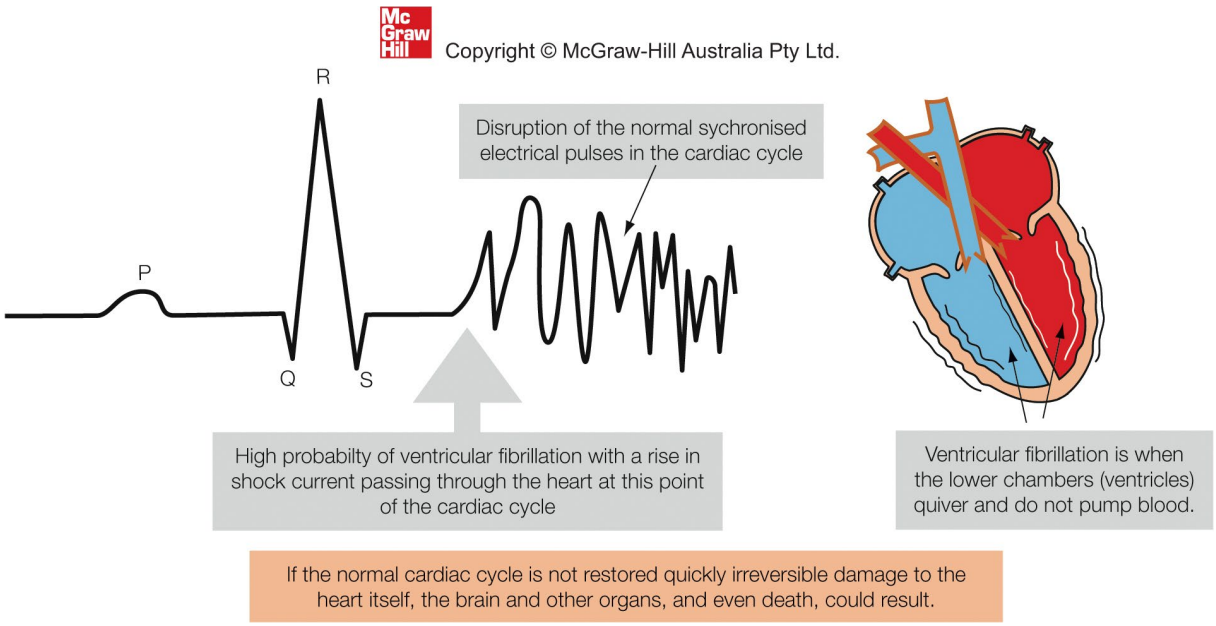
Electric shock

1. Electric shock can be, and often is, fatal. Electrical workers have a direct responsibility to protect themselves and the public from exposure to electric shock. Work should not begin on any electrical device or circuit until a suitable measuring device has been used to confirm that the circuit is dead. Although voltages less than about 30 volts are usually considered to be harmless, unintended contact between parts can result in short circuits, electrical flashes, burns, or damage to the equipment.

2. A small electric shock can cause a mild tingling sensation in the muscles of the arm, but a severe shock causes a sudden contraction of the heart muscles which can stun the victim and may have one or more of the following effects:

   - The victim stops breathing.
   - The victim's heart stops, or quivers rapidly without pumping blood - a condition known as ventricular fibrillation.
   - The victim suffers severe burns.
   - The victim suffers traumatic shock to the nervous system.
   - The victim suffers muscular paralysis and may be unable to release his/her grip on a live machine.

Current through the body	Duration of current flow	Effects on the body	
			Let-go reaction, mild jolt
			Cramping, can't let go, heavy unpleasant jolt Cramping, difficulty in breathing, continued unpleasant jolt
			Cardiac and breathing arrest likely. Severe burns may occur. Heavy blow like a 'king hit'



3. All electrical accidents result in people either coming in direct contact or indirect contact with live electrical parts. These include but are not limited to:

- cutting live cables
- incorrectly energising unterminated cables
- touching conductive parts that are not adequately insulated
- coming in contact with parts that are not normally live but are under fault conditions
- coming into contact with hazardous voltages on the ground caused by earth potential rise

4. To minimise the risks associated with electricity by reducing the chance of electric shock we use and do the following:

- **Earthing** – this is the ensuring that all conductive parts that are able to be touched are to be joined to the electrical mass of earth via a conductive wire. This ensures, for example, that if a live conductor comes in contact with the earthed parts the fault current is carried away to earth and not through someone touching the earthed parts.
- **Extra Low Voltages (ELV)** – by reducing the voltages used in a system to values less than those deemed hazardous the risk of electric shock can also be reduced. This is specified as not exceeding 50 V a.c or 120 V ripple-free d.c. in the AS/NZS 3000.
- **Fuses and Circuit Breakers** – Fuses and Circuit breakers when used correctly in a circuit mean that if a fault occurs that results in an increased current draw they will automatically disconnect. Faults that will trip a circuit breaker or cause a fuses to blow are typically short circuits (a path in created with very low resistance to current flow) and overloading (more load is placed on the circuit than the circuit can handle)
- **Residual Current Devices (RCD)** - Residual Current Devices when used correctly in a circuit mean that if a fault occurs that results in a current not returning through the RCD it will automatically disconnect. Faults that will trip a RCD are typically Active to Earth faults called Earth leakage.

10. Electrical accidents, and the injuries resulting from, can also be prevented by adopting safe working practices. Chief among these is the safe isolation of the electrical supply from the appliance or circuit you want to work on. Isolation of supply is all but mandatory due to the requirement to as far as practicable to not work on any equipment live.

ISOLATION PROCEEDURE

The procedure for isolating a complete circuit consists of several basic operations:-

a. **NOTIFY / ADVISE** the owner or manager that you intend to isolate the circuit.

b. **IDENTIFY** circuit /equipment / appliance or machine and turn off. Lock it off with a padlock if possible.

c. **ISOLATE** the supply by withdrawing the fuses (remove fuse wire/cartridge) or switching the circuit breaker to the off position. Lock it in the OFF position.

d. **TAG** Attach your own "**Danger Tag"** to the fuses or circuit breaker to warn others that the circuit must not be re-energised.

e. **CHECK** your test instrument (multimeter on voltage setting) on a known voltage source to see that it is working properly (i.e. Reads the expected voltage).

f. **CHECK/TEST** **for zero volts** at the point at which you are to begin work. Test between all actives. From all actives to neutral, from all actives to earth and from all neutrals to earth.

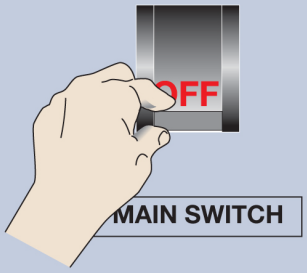
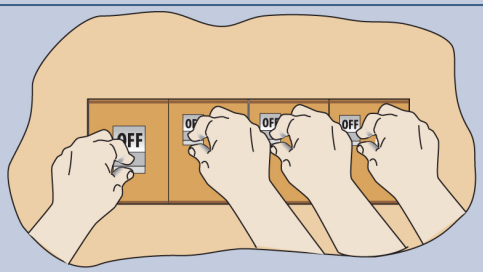
g. **CHECK /Re-check** your test instrument to see that it is still working properly.

TEST BEFORE YOU TOUCH
CHECK THE CHECKER

THIS MAY SAVE YOUR LIFE

Treat all conductors as live until you are convinced they are de-energised.

11. If someone comes in contact with live parts and receives an electric shock causing them to hold. You need to take appropriate steps to remove them from the situation. Shown is a table highlighting steps to take:

If the appropriate switch or circuit breaker can be quickly identified and easily reached, switch off supply,	If the switch cannot be positively identified, open all switches or circuit breakers.
	
If the supply cannot be easily or quickly switched off the victim can be released from contact with low-voltage live parts by one of the following methods:	
	
Pulling on loose clothing	Using dry, non-conducting materials such as rubber gloves, plastic or rubber sheeting, dry cloth, wood or rope.
	
Kicking clear	
DO NOT MAKE DIRECT CONTACT WITH THE VICTIM OR PUT YOURSELF AT ANY OTHER RISK	
Should rescue be required above ground level, due care must be exercised to prevent the victim from falling to the ground when released from the live conductor or when the circuit is de-energised.	

Topic 8 – Questions

1. List five effects of electric shock on the human body.

2. List five common causes of electrical accidents.

3. List four precautions that can minimise the chance of electric shock.

4. Explain how each of the precautions reduce the risk.

5. What is the name given to the type of faults an RCD will protect against?

6. What is the name given to the type of faults an RCD will NOT protect against?

7. Explain the need for ensuring the (safe) isolation of an electrical supply.

8. Describe the appropriate method of removing an electric shock victim from a live electrical situation.

Topic 9 - Life support

Rescue and Resuscitation

1. Electrical accidents can cause burns, falls and electrical shock. Any one of these will produce various symptoms in the casualty who could be suffering from any one, or a combination of all these effects. It is therefore important to be able to distinguish between the various symptoms.

2. Although delay in rescue and resuscitation may prove fatal, electric shock does not kill at once, but it may stun the person, restricting or stopping breathing and affecting the heart.

3. The MOST important aspects to look for in electrical accidents are whether the casualty's breathing and/or heartbeat have stopped, as these two must be restored immediately.

4. When faced with the task of helping a casualty of an electrical accident, act quickly, SAFELY and in the following order:

5. MAKE IT SAFE for both the rescuer and casualty. Switch off the power supply to the electrical circuit, or, if this is not possible, remove the casualty from contact using any INSULATING material.

6. NEVER ASSUME THAT THE CASUALTY IS NOT STILL IN CONTACT WITH THE ELECTRICAL SOURCE UNTIL YOU HAVE CHECKED.

7. Once clear and safe to do so, apply first aid as dictated by the casualty's symptoms, carry out essential treatment e.g. clear airway -carry out resuscitation - stop bleeding. Fractures should be left until breathing and circulation have been restored.

8 Remember that until the victim is released from the shock source, the victim’s body is at the same potential as the voltage source.

9. Typical essentials of resuscitation - REMEMBER the D-R-S-A-B-C-D for treatment.

D	DANGER	Remove any source of danger.
R	RESPONSE	Check for a response.
S	SEND	Call for an ambulance dial 000 or mobiles 112
A	AIRWAY	Clear it.
B	BREATHING	Check for 2 breaths within 10 seconds.
C	CPR	Apply CPR until Medical aid arrives.
D	DEFIBRILLATOR	Attach a defibrillator (follow prompts)

Then attend to bleeding, or to other injuries.

9. A typical process for the management of an unconscious, non-breathing casualty with no signs of life is as follows:

Cardio Pulmonary Resuscitation (CPR)

	Check for danger
	Check for response
NO RESPONSE	Call for ambulance and send for defibrillator
CHECK AIRWAY	Look in mouth for foreign materials
NO FOREIGN MATERIAL FOUND	Leave on back
	Open airway - jaw lift, head tilt *Note for infants: Lift jaw and minimal head tilt to open airway*
	Check breathing for up to 10 seconds – 2 breaths Look - Listen - Feel
NOT BREATHING	Commence CPR Locate site for compressions - lower half of breastbone in the centre of the chest
	Perform 30 compressions (at almost 2 compressions a second).- 1/3rd of chest depth.
	Give 2 breaths approximately 1 second for each and re-commence compressions within 5 seconds
	30 compressions and 2 breaths Complete approximately 5 sets of 30: 2 in 2 minutes
SIGNS OF LIFE RETURN	Check signs of life for up to 10 seconds – 2 breaths
SIGNS OF LIFE PRESENT	Place in Recovery Position and monitor airway, breathing and signs of life

10. The CPR process should be continued until medical help takes over the responsibility or the casualty responds to treatment.

11. Training in this process must be provided by a suitably qualified person.

Emergency First Aid

12. Minor cuts and bruises must be treated no matter how minor they appear to be. Any injury can become infected and turn septic, if not treated promptly.

13. An electric shock can result in many different types of injury for which immediate first aid would be required. In all cases involving electric shock it is essential to switch the power off or remove the victim from contact with live components before attempting to administer first aid.

14. Always report and record any injury, no matter how minor it seems. Any injury can become infected and turn septic if not treated promptly.

15. **Minor Cuts and Bruises**
Treat minor cuts and bruises as follows:

- Let slight or moderate cuts bleed freely for about a minute to clear out possible causes of infection.
- Clean with soft clean material.
- Apply antiseptic, sterile gauze dressing and bandage, or plaster bandage (Band-Aid) for small cuts.

- Seek medical treatment for all deep cuts.
- Severe bruising (which is bleeding under the skin) requires medical treatment with the least possible delay.

16. **Nose Bleed**

Nose bleed is best treated in the following way:

- Sit the casualty in a chair or on the floor with head bent slightly forward.
- Do not let the casualty blow his/her nose.
- Pinch, or have the casualty pinch their nose firmly at the junction of bone and cartilage.
- If bleeding does not stop within 5 to 10 minutes, seek medical attention.

17. **Bleeding**

Severe bleeding in general requires direct pressure to be applied to the wound. In cases of severe bleeding medical attention must be sought immediately. In the meantime the following treatment should be carried out:

- Expose the whole wound.
- Press over the wound with your hand, or squeeze the edges of the wound together. If there is time cover the wound with a clean handkerchief or dressing before applying pressure.
- Maintain pressure over the wound using a THICK pad, bandaged in place. The pad must be large enough to cover the whole wound, and the entire the pad must be covered by the bandage.
- If the casualty complains of numbness, tingling, or pain in the bandaged limb, the bandage is too tight and should be slackened off a little.
- If bleeding continues, apply another pad and bandage, but DO NOT REMOVE the first one.
- If a piece of foreign material is lodged in the wound, or if there is something protruding from the wound, DO NOT ATTEMPT TO REMOVE IT. In such cases, pressure can still be applied to the edges by placing a circular pad around the wound and bandaging it into position. Use this method where broken bones protrude from a wound and cover with ‘Cling Wrap’.

18. **Burns and Scalds**

Burns and scalds require immediate treatment by following the three "C's":

C - Cool
C - Cover
C - Carry

19. Arrange for immediate medical treatment depending on the severity of the case and apply first aid as follows:

- COOL burns by holding them under clean cold running water or pouring cold water over the burned area. Care should be taken not to over-cool the casualty and cause shock. (Chemical burns should also be treated by flooding them with water.)
- DO NOT tear or pull clothing or other matter stuck to the burns.
- COVER with sterile dry bandage (if available) otherwise cover with clean sheet, clothing, towel or Cling Wrap.
- DO NOT touch burned areas where severe skin blistering or seared flesh is evident. DO NOT break blisters, cover with Cling Wrap.
- CARRY (transport) the casualty to medical treatment in all but minor burns cases.

- Call 000 or 112 (mobile phone) and request an ambulance.

20. **Eye Injuries**

Eye injuries should only be treated by a medical practitioner but the following emergency first aid can be carried out:

- Have the casualty hold the eye still. Never allow the casualty to rub an eye that has a foreign body in it.
- NEVER touch the eye surface with ANYTHING.
- Arrange for medical attention.
- Loosely bandage BOTH eyes (if the casualty feels comfortable in doing so).
- Guide the casualty to where he/she can receive medical attention.

21. **Traumatic Shock**

Shock occurs after almost every accident or injury. The casualty may be pale and have clammy skin, or a feeble rapid pulse. The casualty may even be unconscious. The following steps should be taken:

- Put the patient at rest. Comfort and re-assure a conscious casualty or place an unconscious casualty in the recovery position after all checks and first aid have been carried out.
- Keep patient warm and quiet.
- Loosen tight clothing.
- Keep casualty calm and confident of receiving help quickly.

22. **Loss of Consciousness**

The general first aid treatment for a person who has lost consciousness is:

- Place casualty in the Recovery position.
- Ensure an abundant supply of fresh air.
- Loosen tight clothing.
- Cover the casualty, but do not apply heat.
- Do not leave the casualty until help arrives.
- Do NOT attempt to give the casualty food or fluids.

23. **Emergency Calls**

Dial 000 or 112 (Mobile phones) for AMBULANCE, POLICE or the FIRE BRIGADE.

Topic 9 – Questions

1. What is first aid?

2. What are the responsibilities of a first aider?

3. What order should you priorities first aid treatment of a single person with multiple injuries?

4. Explain the acronym DRSABCD. Explain each step.

5. Give an example for both a legal and an ethical issue, which may impact on the management of care when giving first aid.

6. What is the term Duty of Care as it relates to first aid treatment?

7. Describe two effects of cardio pulmonary arrest on the body.

8. Describe the signs and symptoms of an altered level of consciousness.

9. Describe how to manage someone with an altered level of consciousness.

10. Describe the signs and symptoms of shock.

11. Describe how to manage a casualty in shock.

Notes:

