Introduction

Places of work must establish and administer an effective PPE (Personal Protection Equipment) program for all employees, visitors and volunteers. All of these people need to use PPE and be trained in the proper use of PPE.

Workplaces are required to conduct an assessment to determine the various physical hazards that may be present.

Hazard Control
All workplace hazards can be controlled to a certain degree using a variety of methods. The goal of controlling hazards is to prevent workers from being exposed to occupational hazards. Some methods of hazard control are more efficient than others, but a combination of methods usually provides a safer workplace than relying on only one method.

There are five general categories of control measures:

- **elimination** (removal or exclusion)
- **substitution** (replacement or exchange)
- **engineering** controls (isolation or enclosure)
- **administrative** controls (organisation or management)
- **personal protective equipment** (least effective)

The following control measures should included as part of the Safe Operating Procedures at your workplace.
Maintenance of PPE

In addition to providing you with PPE, your employer must maintain the PPE used by everyone. If a piece of PPE cannot be repaired, it must be discarded and replaced.

**NOTE:** If you have your own personal protective equipment, it must be approved by your supervisor before you can use it on the job.

The wearing of PPE is the last step in the management and control of identified risks. Just because you are wearing PPE, does not mean that the risk of injury has been removed.
Follow ALL Warnings and Precautions

Take time to read any and all warnings, signs, safe work procedures and other precautions that may appear on tools, equipment, chemicals, MSDS, and personal protective equipment. eg and Face Protection

Potential Hazards

Small particles of matter can enter your eyes and damage them. Operations such as grinding, chiselling, sanding, hammering, and spraying can create small airborne particles; particles that can injure your eyes.

Toxic chemicals in the form of gases, vapours, and liquids can damage your eyes. Always read the appropriate MSDS before working with any hazardous material.

Operations such as grinding, chiselling, sanding, and hammering often create flying objects or particles that can damage your eyes.

Eye Protection
Safety glasses are perhaps the most widely used type of eye protection. While they may look similar to regular glasses, they are much stronger and more resistant to impact and heat than regular glasses. In addition, most safety glasses are equipped with side shields that give you protection from hazards that may not be directly in front of you.

Goggles give you more protection than safety glasses because they fit closer to your face. Because goggles surround the eye area, they give you more protection in situations where you might encounter splashing liquids, fumes, vapors, powders, dusts, and mists.

Face shields offer you full face protection and are often used around operations which expose you to molten
Face Shields

Face shields protect against metal, chemical splashes, or flying particles. Many face shields can be used while wearing a hard hat. **NOTE:** When operating machinery where there is a risk of the workpiece fragmenting, you should always wear safety glasses when using a face shield for added protection.

Welding Helmets

Welding helmets provide both face and eye protection. Welding helmets use special absorptive lenses that filter the intense light and radiant energy that is produced during welding operations.

Hair Protection

Long and/or loose hair poses a significant hazard especially around machinery. It is particularly dangerous near machinery with revolving components, as this can lead to 'scalping' accidents. This type of injury is horrific to the victim.

Hair that is identified as posing a risk to the operator should be securely covered or fixed.
and confined to the head before using machinery.

It is essential that all machine operators securely fix and confine hair when working with machinery such as pedestal drills, lathes or grinders. e.g. hair net, bouffant cap or sports cap.

**Breathing Protection**

Hazardous materials only present a health hazard when they come into contact with your body. Hazardous materials can enter your body in three ways:

- Ingestion
- Skin Absorption
- Inhalation

Inhalation is the most common route of exposure for most materials which are health hazards. This includes breathing in dust, fumes, oil mist, and vapours from solvents and various gases.

**Dusts**

Dusts are formed whenever solid material is broken down into tiny particles. Dusts are often produced during sanding and grinding operations.
Vapours are substances that are created when a solid or liquid material evaporates. Materials that evaporate easily at room temperature include paint thinner, solvents, and gasoline.

Mists & Sprays
Mists and sprays are very small droplets of liquid material suspended in the air. They are often produced by spray and coating operations.

Fumes
Fumes can occur whenever a metal, plastic, or polymer is subjected to a high heat during such processes as welding and soldering operations.

Gases
Gases are materials that become airborne at room temperature. Gases may have an odour, but many do not. Some gases can be seen, but again, others cannot. Gases may be heavier than air, or lighter than air, but in either case, can travel for great distances undetected.
Smoke
Smoke is made up of small particles produced by the incomplete combustion of any material that has carbon in it. Smoke is often produced during processes that require high heat or burning as part of the manufacturing process.

Types of Respirators and Masks

Air Purifying Respirators

These types of respirators include:

Air Purifying Disposable Particulate Masks

Air Purifying Half Mask Respirators

Air Purifying Full Face Mask Respirators
They also include Gas Masks and Powered Air Purifying Respirators.

**Supplied Air Respirators**

These types of respirators include:
- Airline Respirators;
- Emergency Escape Breathing Apparatus;
- Self-Contained Breathing Apparatus (SCBA).

**Hearing Protection**

Noise is a common problem found in many workplaces. Research has shown that high levels of noise can damage your hearing. Losing your hearing is a gradual process, and is less noticeable than other types of workplace injuries. It is, however, a permanent handicap for those who are affected.

You should wear a hearing protection device whenever you are exposed to noise that is 85 decibels or greater for an 8-hour period of time.

**Types of Hearing Protection Devices**
Many types of hearing protection devices are available.

**Foam Earplugs**

The advantages of Foam and PVC earplugs are:
- Small & lightweight
- Comfortable in hot environments
- Easily used with other safety equipment

**PVC Earplugs**

The disadvantages of earplugs are:
- May work loose and require occasional refitting
- Require specific fitting instructions
- Are frequently soiled

**Earmuffs**

The advantages of earmuffs are:
- Easy for your teacher to supervise the wearing of this device.
- One size fits all
- Fits better for longer
periods of time
The disadvantages of earmuffs are:
- May fit tight on your head
- Uncomfortable in a warm environment
- Problems occur when used with other equipment

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**Foot Protection**

**Impact Injuries**
Heavy objects can fall on your feet. If you work around sharp objects, you can step on something sharp and puncture your foot.

**Injuries from Spills and Splashes**
Liquids such as acids, caustics, and molten metals can spill into your shoes and boots. These hazardous materials can cause chemical and heat burns.

**Compression Injuries**
Heavy machinery, equipment, and other objects can roll over your feet. The result of these types of accidents is often broken or crushed bones.
Electrical Shocks
Accidents involving electricity can cause severe shocks and burns.

Slipping
Oil, water, soaps, wax, and other chemicals can cause you to slip and fall.

Housekeeping
Poorly maintained machinery, tools, sloppy work areas, and cluttered aisles can all contribute to foot injuries.

Wearing Protective Footwear
Substantial footwear appropriate to any practical activity should be worn.

When carrying out practical activities especially when using chemicals or hazardous equipment you should wear enclosed footwear with firm uppers, such as leather. Footwear such as thongs, open weave type shoes, or shoes with openings at toes or
heels, platforms or high-heel shoes should not be worn in areas which present hazardous situations.

Where indicated by a risk assessment, the wearing of safety footwear is mandatory.

Avoid footwear made of cloth especially if you work around acids or caustics.

Make sure your footwear fits correctly.

If you work in an area with wet floors, you should wear rubber soled footwear.

Inspect your footwear before you use them. Look for holes and cracks.

After working with chemicals, hose your footwear with water to rinse away any chemicals or dirt.

The questions in the SOP knowledge test are general in nature. The manufacturer’s manual is to be used to develop specific questions relevant to this tool or machine.