IGC - Main area for study - 2015
ASHEI

Element 1

1.1 Outline the scope and nature of occupational health and safety

The multi-disciplinary nature of health and safety; the barriers to good standards of health and safety (complexity, competing and conflicting demands, behavioural issues)

- Meanings and distinctions between: - health, safety and welfare.

1.2 Explain the moral, social and economic reasons for maintaining and promoting good standards of health and safety in the workplace

- The size of the health and safety 'problem' in terms of the numbers of work related fatalities and injuries and incidence of ill-health
- Societal expectations of good standards of health and safety • The need to provide a safe place of work, safe plant and equipment, safe systems of work, training and supervision, and competent workers
- The business case for health and safety: costs of insured and uninsured accidents and ill-health; employers' liability insurance.

1.3 Explain the role of national governments and international bodies in formulating a framework for the regulation of health and safety.

Employers' responsibilities • Workers' responsibilities and rights

- The role of enforcement agencies and the consequences of non-compliance
- International standards and conventions (eg, International Standards Organisation (ISO) and the International Labour Organisation - ILO) • Sources of information on National Standards.

http://www.ilo.org/ilolex/index.htm
http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CO DE:C155

Element 2

2.1 Outline the key elements of a health and safety management system

With reference to ILO Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001) - policy (Plan) - organising (Plan) - planning and implementing (Do) - evaluation - monitoring, review, measurement, investigation (Check) - auditing (Check) - action for improvement - preventative and corrective action; continual improvement (Act) •

With reference to OHSAS 18001: Occupational health and safety management systems - policy (Plan) - planning (Plan) - implementation and operation (Do) - checking and corrective action (Check) - management review (Act) - continual improvement (Act)

2.2 Explain the purpose and importance of setting policy for health and safety

The role of the health and safety policy in decision-making; the needs of different organisations.

2.3 Describe the key features and appropriate content of an effective health and safety policy.

Stating the overall aims of the organisation in terms of health and safety performance: - general statement of intent - setting overall objectives and quantifiable targets (specific, measurable, achievable, reasonable, time bound (SMART) principles)

basic concept of benchmarking - views of interested parties - technological options - financial, operational, and business requirements - signatory to statement

>Defining the health and safety roles and responsibilities of individuals within the organisation: - organising for health and safety: allocation of responsibilities; lines of communication; feedback loops; the role of the line managers in influencing the health and safety policy and monitoring effectiveness

• Specifying the arrangements for achieving general and specific aims: - health and safety arrangements: the importance of specifying the organisation's arrangements for planning and organising, controlling hazards, consultation, communication and monitoring compliance with, and assessing the effectiveness of, the arrangements to implement the health and safety policy

• The circumstances that may lead to a need to review the health and safety policy (eg, passage of time, technological, organisational or legal changes, results and monitoring) • Standards and guidance relating to health and safety policy.

Element 3

3.1 Outline the health and safety roles and responsibilities of employers, directors, managers, supervisors, workers and other relevant parties

• Organisational roles of directors/managers/supervisors

• Top management demonstrating commitment by: - ensuring availability of resources so the occupational health and safety management system is established, implemented and maintained - defining roles and responsibilities - appointing member of senior management with specific responsibility for health and safety - appointing one or more competent persons and adequate resources to provide assistance in meeting the organisation's health and safety obligations (including specialist help where necessary) - role in reviewing health and safety performance

• The roles and responsibilities of: - middle managers and supervisors for the health and safety of workers - persons with primary health and safety functions - workers for the health and safety of themselves and others who may be affected by their acts or omissions persons in control of premises for the health and safety of those who are not directly employed by the organisation using the premises as a place of work and for those using plant or substances provided, eg, contractors - the self-employed for the health and safety of themselves and others

• The supply chain and requirements on suppliers, manufacturers and designers of articles and substances for use at work in relation to the health and safety of their products and the provision of information

• The relationship between client and contractor and the duties each has to the other and to the other's workers; effective planning and co-ordination of contracted work • Principles of assessing and managing contractors - scale of contractor use - pre-selection and management of contractors • Shared responsibilities in the case of joint occupation of premises: co-operation and co-ordination.

3.2 Explain the concept of health and safety culture and its significance in the management of health and safety in an organisation

Meaning and extent of the term 'health and safety culture' • Relationship between health and safety culture and health and safety performance • Indicators which could be used to assess the effectiveness of an organisation's health and safety culture: - tangible outputs or indicators of an organisation's health and safety culture (eg, accidents, absenteeism, sickness rates, staff turnover, level of compliance with health and safety rules and procedures, complaints about working conditions) • Influence of peers

3.3 Outline the human factors which influence behaviour at work in a way that can affect health and safety

Organisational factors: - eg culture, leadership, resources, work patterns, communications

• Job factors: - eg task, workload, environment, display and controls, procedures

• Individual factors: - eg competence, skills, personality, attitude and risk perception

• Link between individual, job and organisational factors.

3.4 Explain how health and safety behaviour at work can be improved

Securing commitment of management • Promoting health and safety standards by leadership and example and appropriate use of disciplinary procedures

Competent personnel with relevant knowledge, skills and work experience • Identifying and keeping up to date with legal requirements • Effective communication within the organisation: - merits and limitations of different methods of communication (verbal, written and graphic) - use and effectiveness of notice boards and health and safety media such as films, digital media, company intranet, posters, toolbox talks, memos, worker handbooks - co-operation and consultation with the workforce and contractors where applicable (roles and benefits of worker participation, safety committees and worker feedback) • Training: - the effect of training on human reliability - opportunities and need for training provision (induction and key health and safety topics to be covered, job change, process change, introduction of new legislation, introduction of new technology).

3.5 Explain the principles and practice of risk assessment

• Meaning of hazard, risk and risk assessment: - hazard: 'something with the potential to cause harm (this can include articles, substances, plant or machines, methods of work, the working environment and other aspects of work organisation)' - risk: 'the likelihood of potential harm from that hazard being realised' - risk assessment: 'identifying preventive and protective measures by evaluating the risk(s) arising from a hazard(s), taking into account the adequacy of any existing controls, and deciding whether or not the risk(s) is acceptable' • Objectives of risk assessment; prevention of workplace accidents • Risk assessors: - composition of risk assessment team - competence • Criteria for a 'suitable and sufficient' risk assessment • Identification of hazards - sources and form of harm; task analysis, legislation, manufacturers' information, incident data • Identifying population at risk: - workers, operators, maintenance staff, cleaners, contractors, visitors, public, etc • Evaluating risk and adequacy of current controls: - likelihood of harm and probable severity - risk rating - apply the general hierarchy of control with reference to OHSAS 18001 - application based on prioritisation of risk - use of guidance; sources and examples of legislation - applying controls to specified hazards

- residual risk; acceptable / tolerable risk levels - distinction between priorities and timescales • Recording significant findings: - format; information to be recorded • Reviewing: reasons for review (eg incidents, process / equipment / worker / legislative changes; passage of time) • Special case applications to young persons, expectant and nursing mothers; disabled workers and lone workers.

3.6 Explain the preventive and protective measures

General principles of the preventive and protective measures with reference to ILO-OSH 2001: Guidelines on Occupational Safety and Health Management Systems: - eliminate the hazard/risk; - control the hazard/risk at source, through the use of engineering controls or organisational measures; - minimise the hazard/risk by the design of safe work systems, which include administrative control measures; - where residual hazards/risks cannot be controlled by collective measures, the employer should provide for appropriate personal protective equipment, including clothing, at no cost, and should implement measures to ensure its use and maintenance. Hazard prevention and control procedures or arrangements should be established and should: - be adapted to the hazards and risks encountered by the organisation; - be reviewed and modified if necessary on a regular basis; - comply with national laws and regulations, and reflect good practice; - consider the current state of knowledge, including information or reports from organisations, such as labour inspectorates, occupational safety and health services, and other services as appropriate.

3.7 Identify the key sources of health and safety information

Internal to the organisation (eg, accident/ill health/absence records, inspection, audit and investigation reports, maintenance records)

• External to the organisation (eg, manufacturers' data, legislation, EU (European Union) / HSE (Health and Safety Executive) publications, trade associations; International, European and British Standards, ILO (International Labour Organisation) Occupational Safety and Health Administration (USA), Worksafe (Western Australia) and other authoritative texts, IT sources).

3.8 Explain what factors should be considered when developing and implementing a safe system of work for general activities

Employer's responsibility to provide safe systems of work • Role of competent persons in the development of safe systems • Importance of worker involvement in the development of safe systems • Importance and relevance of written procedures

The distinction between technical, procedural and behavioural controls • Development of a safe system of work • Analysing tasks, identifying hazards and assessing risks • Introducing controls and formulating procedures • Instruction and training in the operation of the system • Monitoring the system • Definition of and specific examples of confined spaces and lone working and working and travelling abroad in relation to safe systems of work.

3.9 Explain the role and function of a permit-to-work system.

Meaning of permit-to-work system • Role and function in controlling a permit-to-work • Operation and application of a permit-to-work system • Circumstances in which a permit-to-work system may be appropriate, with reference to: hot work, work on electrical systems, machinery maintenance, confined spaces, work at height

3.10 Outline the need for emergency procedures and the arrangements for contacting emergency services

Importance of developing emergency procedures • What needs to be included in an emergency procedure - why an emergency procedure is required - size and nature of potential accidents and the consequences if they occur - procedures for raising the alarm - action of the employees on site - dealing with the media - arrangements for contacting emergency and rescue services • Importance of training and testing emergency procedures.

3.11 Outline the requirements for, and effective provision of, first aid in the workplace

First-aid requirements • Role, training and number of first-aiders • Requirements for first-aid boxes • Coverage in relation to shift work and geographical location

http://www.ilo.org/ilolex/index.htm

Element 4

4.1 Outline the principles, purpose and role of active and reactive monitoring

Active monitoring procedures including the monitoring of performance standards and the systematic inspection of plant and premises • Role of safety inspections, sampling, surveys and tours and their roles within a monitoring regime • Factors governing frequency and type of inspection; competence and objectivity of inspector; use of checklists; allocation of responsibilities and priorities for action • Effective report writing: style, structure, content, emphasis, persuasiveness, etc • Reactive monitoring measures including data on incidents, dangerous occurrences, near misses, ill-health, complaints by workforce and enforcement action.

4.2 Explain the purpose of, and procedures for, investigating incidents (accidents, cases of work-related ill-health and other occurrences)

Role and function of incident investigation as a reactive monitoring measure • Distinction between different types of incident: ill-health, injury accident, dangerous occurrence, near-miss, damage-only; typical ratios of incident outcomes and their relevance in terms of the proportion of non-injury events; utility and limitations of accident ratios in accident prevention (Bird's Triangle) • Basic incident investigation procedures • Interviews, plans, photographs, relevant records, checklists • Immediate causes (unsafe acts and conditions) and root causes (management systems failures) • Remedial actions.

4.3 Describe the legal and organisational requirements for recording and reporting incidents

Internal systems for collecting, analysing and communicating data • Organisational requirements for recording and reporting incidents • Reporting of events to external agencies. Typical examples of major injuries, diseases and dangerous occurrences that might be reportable to external agencies • Lessons learnt

Element 5

5.1 Explain the purpose of, and procedures, for health and safety auditing

• Meaning of the term 'health and safety audit' • Scope and purpose of auditing health and safety management systems; distinction between audits and inspections • Pre-audit preparations, information

gathering, notifications and interviews, selection of staff, competence of auditors, time, resources • Responsibility for audits • Advantages and disadvantages of external and internal audits • Actions taken following audit (eg, correcting nonconformities).

5.2 Explain the purpose of, and procedures for, regular reviews of health and safety performance.

Purpose of reviewing health and safety performance • Who should take part in review • Review at planned intervals • Assessing opportunities for improvement and the need for change • Review to consider: - evaluations of compliance with applicable legal and organisational requirements - accident and incident data, corrective and preventive actions - inspections, surveys, tours and sampling - absences and sickness - quality assurance reports - audits - monitoring data/records/reports - external communications and complaints - results of participation and consultation - objectives met - actions from previous management reviews

- legal/good practice developments • Maintenance of records of management review • Reporting on health and safety performance • Feeding into action and development plans as part of continuous improvement • Role of Boards, Chief Executive/Managing Director and Senior Managers.

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GC 2 Element 1

1.1 Outline common health, welfare and work environment requirements in the workplace

• Health and welfare provisions: - supply of drinking water, washing facilities, sanitary conveniences, accommodation for clothing, rest and eating facilities, seating, ventilation, heating and lighting • The effects of exposure to extremes of temperature; preventive measures • Prevention of falling materials through safe stacking and storage.

1.2 Explain the risk factors and appropriate controls for violence at work

• Risk factors relating to violence at work (both between employees/workers and third parties) • Appropriate control measures to reduce risks from violence at work.

1.3 Explain the effects of substance misuse on health and safety at work and control measures to reduce such risks : Types of substances misused at work, eg, - alcohol - legal/illegal drugs - solvents • Risks to health and safety from substance misuse at work, Control measures to reduce risks from substance misuse at work

1.4 Explain the hazards and control measures for the safe movement of people in the workplace

Hazards in the workplace: - typical hazards leading to: slips, trips and falls on the same level; falls from a height; collisions with moving vehicles; being struck by moving, flying or falling objects; striking against fixed or stationary objects - conditions and environments in which each hazard may arise, including maintenance activities • Control measures for the safe movement of people in the workplace: - slip resistant surfaces; spillage control and drainage; designated walkways; fencing and guarding; use of signs and personal protective equipment; information, instruction, training and supervision - maintenance of a safe workplace: cleaning and housekeeping requirements, access and egress, environmental considerations (lighting), including during maintenance activities.

1.5 Explain the hazards and control measures for safe working at height

• Examples of work activities involving a risk of injury from falling from height, and the significance of such injuries • Basic hazards and factors affecting risk from working at height (including vertical distance, fragile roofs, deterioration of materials, unprotected edges, unstable/poorly maintained access equipment, weather and falling materials) • Methods of avoiding working at height • Main precautions necessary to prevent falls and falling materials, including proper planning and supervision of work, avoiding working in adverse weather conditions • Emergency rescue • Provision of equipment, training, instruction and other measures to minimise distance and consequences of a fall • Head protection • Safe working practices for common forms of access equipment, including ladders, stepladders, scaffolds (independent tied and mobile tower), mobile elevating work platforms, trestles, staging platforms and leading edge protection systems • Inspection of access equipment

1.6 Outline the hazards and control measures associated with works of a temporary nature.

The impact on workplaces from hazards associated with works of a temporary nature (including building maintenance, renovation, demotion and excavations) • Main control measures relating to the management of works of a temporary nature: - communication and co-operation - risk assessment - appointment of competent people - segregation of work areas - amendment of emergency procedures - welfare provision.

Element 2

2.1 Explain the hazards and control measures for the safe movement of vehicles in the workplace

• Hazards and factors affecting level of risk from workplace transport operations including conditions and environments in which each hazard may arise: - vehicle movement, eg, driving too fast, especially around bends; reversing; silent operation of machinery; poor visibility (around loads etc), overturning of vehicles; collisions with other vehicles, pedestrians and fixed objects - non-movement, eg, loading (including overloading); unloading; securing loads; sheeting; coupling; vehicle maintenance work • Control measures for safe workplace transport operations: Safe site - suitability of traffic routes (including site access and egress) - management of vehicle movements - environmental considerations (visibility, gradients, changes of level, surface conditions) - segregating of pedestrians and vehicles and measures to be taken when segregation is not practicable - protective measures for people and structures (barriers, marking signs, warnings of vehicle approach and reversing) - site rules (including speed limits) Safe vehicles - suitable vehicles - maintenance/repair of vehicles - visibility from vehicles/reversing aids - driver protection and restraint systems Safe drivers - selection and training of drivers - banksman (reversing assistant) - management systems for assuring driver competence including local codes of practice

2.2 Outline the factors associated with driving at work that increases the risk of an incident and the control measures to reduce work related driving risks

• Managing work-related road safety - policy covers work-related road safety - systems to manage work-related road safety - monitoring performance to ensure policy is effective eg collection of information, reporting of work-related road incidents by employees - organisation and structure (to allow cooperation across departments with different responsibilities for work-related road safety) - legal responsibilities of individuals on public roads

• Risk assessment - factors associated with driving at work that increases the risk of being involved in a road traffic incident (distance, driving hours, work schedules, stress due to traffic and weather conditions etc)

• Evaluating the risks - the driver (competency, fitness and health, training) - the vehicle (suitability, condition, safety equipment, safety critical information, ergonomic considerations) - the journey (routes, scheduling, sufficient time, weather conditions) • Control measures to reduce work-related driving risks.

Road Traffic Act 1988 Road Traffic Act 1991 The Health and Safety (Safety Signs and Signals) Regulations 1996 The Provision and Use of Work Equipment Regulations 1998

Element 3

3.1 Explain work processes and practices that may give rise to work-related upper limb disorders and appropriate control measures

Meaning of musculoskeletal disease and work related upper limb disorders (WRULDs) • Examples of repetitive operations such as keyboard operation, assembly of small components, bricklaying and checkout operators; assessment of a display screen equipment workstation • Matching the workplace to individual needs of workers • The ill-health effects of poorly designed tasks and workstations • The factors giving rise to ill-health conditions: task (including repetitive, strenuous); environment (including lighting, glare); equipment (including user requirements, adjustability) • Appropriate control measures.

3.2 Explain the hazards and control measures which should be considered when assessing risks from manual handling activities

Common types of manual handling injury • Assessment of manual handling risks by considering the task, the load, the individual and the working environment • Means of avoiding or minimising the risks from manual handling with reference to the task, load, individual and working environment, eg design, automation, mechanisation • Efficient movement principles for manually lifting loads to reduce risk of musculoskeletal disorders due to lifting, poor posture and repetitive or awkward movements.

3.3 Explain the hazards and controls to reduce the risk in the use of lifting and moving equipment with specific reference to manually-operated load moving equipment

Hazards and controls for common types of manually operated load handling aids and equipment: trucks and trolleys; pallet trucks; people handling hoists; people handling aids.

3.4 Explain the hazards and the precautions and procedures to reduce the risk in the use of lifting and moving equipment with specific reference to powered load handling equipment.

Hazards, precautions and procedures for powered load handling equipment eg, fork-lift trucks, lifts, hoists, conveyors and cranes • Requirements for lifting operations: - strong, stable and suitable equipment - positioned and installed correctly - visibly marked ie safe working load - ensure lifting operations are planned, supervised and carried out in safe manner by competent persons - special requirements for lifting equipment used for lifting people • Periodic inspection and examination/testing of lifting equipment.

The Health and Safety (Display Screen Equipment) Regulations 1992 (as amended) The Lifting Operations and Lifting Equipment Regulations 1998 The Manual Handling Operations Regulations 1992 (as amended) The Provision and Use of Work Equipment Regulations 1998

Manual Handling, Manual Handling Operations Regulations 1992 (as amended), Guidance on Regulations, L23, third edition 2004, HSE Books, ISBN: 978-0-7176-2823-0 www.hse.gov.uk/pubns/priced/l23.pdf Safety in Working with Lift Trucks, HSG6, third edition 2000, HSE Books, ISBN: 978-0-7176-1781-4 www.hse.gov.uk/pubns/priced/hsg6.pdf Safe use of lifting equipment, Lifting Operations and Lifting Equipment Regulations 1998, ACoP and Guidance, L113, HSE Books, ISBN: 978-0-7176-1628-2 www.hse.gov.uk/pubns/priced/l113.pdf

Element 4

4.1 Outline general requirements for work equipment

Types of work equipment including: hand tools, power tools and machinery • Suitability as it relates to provision of equipment; including the requirement for CE (Conformité Européenne) marking within the UK and Europe • Prevention of access to dangerous parts of machinery • The need to restrict the use and maintenance of equipment with specific risks • Extent of information, instruction and training to be provided in relation to specific risks and persons at risk (eg users, maintenance staff and managers) • The need for equipment to be maintained and for maintenance to be conducted safely • Importance of operation and emergency controls, stability, lighting, markings and warnings, clear unobstructed workspace • Responsibilities of users.

4.2 Explain the hazards and controls for hand-held tools

Hazards and misuse of hand-held tools whether powered or not; requirements for safe use, condition and fitness for use, suitability for purpose and location to be used in (eg flammable atmosphere) • Hazards of portable power tools (eg, drill, sander) and the means of control.

4.3 Describe the main mechanical and non-mechanical hazards of machinery

• Main mechanical and other hazards as identified in BS EN ISO 12100 -1 and how harm may arise • Hazards presented by a range of equipment including office machinery (eg, photocopier, document shredder); manufacturing/maintenance machinery (eg, bench-top grinder, pedestal drill); agricultural/horticultural machinery (eg, cylinder mower, strimmer / brush cutter, chain-saw); retail machinery (eg, compactor, checkout conveyor system); construction machinery (eg, cement mixer, bench mounted circular saw).

4.4 Explain the main control measures for reducing risk from machinery hazards.

The basic principles of operation, merits and limitations of the following: - guards: fixed ; interlocking; self-closing and adjustable/self-adjusting - protective devices: two-hand; hold-to-run; sensitive protective equipment (trip devices), emergency stop controls - jigs, holders, push-sticks - information, instruction, training and supervision - personal protective equipment • Application of these methods of protection to the range of equipment listed in 4.3 • Basic requirements for guards and safety devices: - compatibility with process, adequate strength, maintained, allow for maintenance without removal, not increase risk or restrict view, not easily bypassed.

The Health and Safety (Safety Signs and Signals) Regulations 1996 The Personal Protective Equipment at Work Regulations 1992 (as amended) The Provision and Use of Work Equipment Regulations 1998 The Supply of Machinery (Safety) Regulations 2008 (as amended)

Element 5

5.1 Outline the principles, hazards and risks associated with the use of electricity in the workplace

Principles of electricity: - basic circuitry for current to flow: relationship between voltage, current and resistance • Hazards, risks and danger of electricity: - electric shock and its effect on the body; factors influencing severity: voltage, frequency, duration, resistance, current path; electrical burns (from direct and indirect contact with an electrical source) - electrical fires: common causes - workplace electrical equipment including portable: conditions and practices likely to lead to accidents (unsuitable equipment; inadequate maintenance; use of defective apparatus) - secondary effects (eg, falls from height) - use of poorly maintained electrical equipment - work near overhead power lines; contact with underground power cables during excavation work - work on mains electricity supplies - use of electrical equipment in wet environments

5.2 Outline the control measures that should be taken when working with electrical systems or using electrical equipment in all workplace conditions

Control measures: - protection of conductors - strength and capability of equipment - advantages and limitations of protective systems: fuses, earthing, isolation of supply, double insulation, residual current devices, reduced and low voltage systems - use of competent persons - use of safe systems of work (no live working unless no other option, isolation, locating buried services, protection against overhead cables) -

emergency procedures following an electrical incident, inspection and maintenance strategies: user checks; formal inspection and tests of the electrical installation and equipment; frequency of inspection and testing; records of inspection and testing; advantages and limitations of portable appliance testing (PAT).

The Electricity at Work Regulations 1989

Element 6

6.1 Describe the principles of fire initiation, classification and spread

Principles of fire: fire triangle; sources of ignition; fuel and oxygen in a typical workplace; oxidising materials • Classification of fires (different local classification systems will be accepted) • Principles of heat transmission and fire spread: convection; conduction; radiation; direct burning • Common causes and consequences of fires in workplaces

6.2 Outline the principles of fire risk assessment

The reasons for carrying out a fire risk assessment • Factors to be considered in carrying out the assessment • Consideration of temporary workplaces and changes to workplaces.

6.3 Describe the basic principles of fire prevention and the prevention of fire spread in buildings

Control measures to minimise the risk of fire in a workplace: - elimination of, or reduction in, the use and storage of flammable and combustible materials - control of ignition sources - systems of work - good housekeeping • Storage of flammable liquids in work rooms and other locations • Awareness of structural measures to prevent the spread of fire and smoke: properties of common building materials; protection of openings and voids • Use of suitable electrical equipment in flammable atmospheres.

6.4 Outline the appropriate fire alarm system and fire-fighting arrangements for a simple workplace

Fire detection, fire warning and fire-fighting equipment: - common fire detection and alarm systems - portable fire-fighting equipment: siting, maintenance and training requirements - extinguishing media: water, foam, dry powder, carbon dioxide; advantages and limitations - access for fire and rescue services and vehicles.

6.5 Outline the factors which should be considered when implementing a successful evacuation of a workplace in the event of a fire.

Means of escape: travel distances, stairs, passageways, doors, emergency lighting, exit and directional signs, assembly points • Emergency evacuation procedures • Role and appointment of fire marshals • Fire drills; roll call; provisions for people with disabilities • Building plans to include record of emergency escape.

The Dangerous Substances and Explosives Atmospheres Regulations 2002 The Fire (Scotland) Act 2005 The Fire Safety (Scotland) Regulations 2006 The Health and Safety (Safety Signs and Signals) Regulations 1996 The Regulatory Reform (Fire Safety) Order 2005

Element 7

7.1 Outline the forms of, the classification of, and the health risks from exposure to, hazardous substances

Forms of chemical agent: dusts, fibres, fumes, gases, mists, vapours and liquids • Forms of biological agents: fungi, bacteria and viruses • Main classification of substances hazardous to health: irritant, corrosive, harmful, toxic/very toxic, carcinogenic, mutagenic and reproductive toxin • Difference between acute and chronic health effects.

7.2 Explain the factors to be considered when undertaking an assessment of the health risks from substances commonly encountered in the workplace

Routes of entry of hazardous substances into the body and body reaction in the form of superficial and cellular defence mechanisms with particular reference to the hazardous substances listed in 7.5 • Factors to be taken into account when assessing health risks • Sources of information: - product labels - guidance documents eg, UK HSE Guidance Note EH40, EU list of Indicative Limit Values, ACGIH list of Threshold Limit Values (US) - manufacturers' safety data sheets and responsibility for their provision; information to be included by supplier - limitations of information in assessing risks to health • Role and limitations of hazardous substance monitoring.

7.3 Explain the use and limitations of occupational exposure limits including the purpose of long term and short term exposure limits

Purpose of occupational exposure limits • Long term and short term limits • Significance of time weighted averages • Limitations of exposure limits • Application of relevant limits eg, Threshold Limit Values, Workplace Exposure Limits, Maximum Allowable Concentrations, etc • Comparison of measurements to exposure limits established by competent national authorities or internationally recognised standards

7.4 Outline control measures that should be used to reduce the risk of ill-health from exposure to hazardous substances

The need to prevent exposure or, where this is not reasonably practicable, adequately control it • Principles of Good Practice as regards control of: - minimisation of emission, release and spread of hazardous substances through design and operation of processes and task activities - account for relevant routes of entry into the body when developing control measures for hazardous substances - control measures to be proportional to health risk - effectiveness and reliability of control options that minimise the escape and spread of hazardous substances - use of personal protective equipment in combination with other measures where adequate controls cannot be achieved otherwise - regular checks and review of implemented control measures to confirm continued effectiveness - provision of information and training to those working with hazardous substances as to the risks and use of measures to minimise the risks - ensuring control measures do not increase overall risk to health and safety • Common measures used to implement Principles of Good Practice above: - elimination or substitution of hazardous substances or form of substance - process changes - reduced time exposure - enclosure of hazards; segregation of process and people - local exhaust ventilation: general applications and principles of capture and removal of hazardous substances; components of a basic system and factors that may reduce its effectiveness; requirements for inspection - use and limitations of dilution ventilation - respiratory protective equipment: purpose, application and effectiveness; types of equipment and their suitability for different substances; selection, use and maintenance - other protective

equipment and clothing (gloves, overalls, eye protection) - personal hygiene and protection regimes - health/medical surveillance and biological monitoring • Further control of substances that can cause cancer, asthma or genetic damage that can be passed from one generation to another

7.5 Outline the hazards, risks and controls associated with specific agents

• Health risks and controls associated with asbestos • Managing asbestos in buildings • Health risks and controls associated with other specific agents: blood borne viruses, carbon monoxide, cement, legionella, leptospira, silica, wood dust; workplace circumstances in which they might be present.

7.6 Outline the basic requirements related to the safe handling and storage of waste

Basic environmental issues relating to safe handling and storage of waste (suitable PPE, separate storage of incompatible waste streams).

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 The Control of Asbestos Regulations 2012 The Control of Substances Hazardous to Health Regulations 2002 The Hazardous Waste (England and Wales) Regulations 2005 The Personal Protective Equipment at Work Regulations 1992 (as amended) The Special Waste Amendment (Scotland) Regulations 2004 The Waste (England and Wales) Regulations 2011 as amended

Element 8

8.1 Outline the health effects associated with exposure to noise and appropriate control measures

Noise • The physical and psychological effects on hearing of exposure to noise • The meaning of terms commonly used in the measurement of sound; sound pressure, intensity, frequency; the decibel scale, dB(A) and dB(C) • The need for assessment of exposure; comparison of measurements to exposure limits established by competent national authorities or internationally recognised standards • Basic noise control measures (isolation, absorption, insulation, damping and silencing) the purpose, application and limitations of personal hearing protection (types, selection, use, maintenance and attenuation factors) • Role of health surveillance • Occupations with potential noise exposure problems: eg, construction, uniformed services, entertainment, manufacturing, call centres

8.2 Outline the health effects associated with exposure to vibration and appropriate control measures

Vibration • The effects on the body of exposure to vibration, with particular reference to hand-arm vibration and whole body vibration • The need for assessment of exposure; comparison of measurements to exposure limits established by competent national authorities or internationally recognised standards • Basic vibration control measures including choice of equipment, maintenance, limiting exposure (including duration and magnitude, work schedules / rest periods, clothing to protect against cold) • Role of health surveillance.

8.3 Outline the health effects associated with ionising and non-ionising radiation and appropriate control measures

Radiation • The types of, and differences between, non-ionising and ionising radiation (including radon) and their health effects • Typical occupational sources of non-ionising and ionising radiation (including radon) • The basic means of controlling exposures to non-ionising and ionising radiation (including radon) • Basic

radiation protection strategies including the role of the competent person in the workplace • The role of monitoring and health surveillance

8.4 Outline the meaning, causes and effects of work related stress and appropriate control measures

Stress • Meaning of 'work related stress' • Causes, effects and control measures (demand, control, support, relationships, role, change).

Statutory provisions The Control of Noise at Work Regulations 2005 The Control of Vibration at Work Regulations 2005 The Ionising Radiations Regulations 1999 The Personal Protective Equipment at Work Regulations 1992 (as amended)

Working Environment (Air, Pollution, Noise and Vibration) C148 and R156, 1977;

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IGC 1 – Sample Question Paper

1 A fire has occurred at a workplace and a worker has been badly injured.

(a) Outline the process for investigating the accident. (10)

(b) Outline why the investigation report needs to be submitted to senior management. (5)

(c) In addition to senior managers, identify who may need to know the outcome of the investigation. (5)

2 Outline the key elements of a health and safety management system. (8)

3 (a) (i) Give the meaning of the term 'hazard'. (2)
(ii) Give the meaning of the term 'risk'. (2)
(b) Identify means of hazard identification that may be used in the workplace. (4)

4 (a) Outline the main health and safety responsibilities of an employer. (6) (b) Identify actions that an enforcement agency could take if it finds that an employer is not meeting his/her responsibilities. (2)

5 Identify precautions that could be taken to help ensure the health and safety of visitors to a workplace. (8)

6 A university has a security worker who works alone when all staff and students have left. Outline what needs to be considered in order to reduce the health and safety risks to this lone worker. (8)

7 Outline potential barriers to achieving good standards of health and safety. (8)

8 (a) Give the meaning of the term 'permit-to-work'. (2)
(b) Identify THREE types of activity that may require a permit-to-work AND give the reason why in EACH case.

9. (a) Explain the difference between consulting and informing workers of health and safety issues. (2)

(b) Outline factors that may determine the effectiveness of a health and safety committee. (6)

10 Identify documentation that is likely to be inspected in a health and safety audit. (8)

11 (a) Outline why it is important for an organisation to set health and safety targets. (2)

(b) Identify health and safety targets that an organisation could set. (6)

GC 2 – Sample

1 Airborne measurement have identified that a local exhaust ventilation system (LEV) is no longer adequately controlling worker exposure to airborne dust. A risk assessment has identified that respiratory protective equipment (RPE) can be used as an interim measure to protect workers while engineers repair the LEV system.

(a) Identify the main components of the LEV system. (4)

(b) Outline factors that may have reduced the effectiveness of the LEV system. (8)

(c) Outline factors that should be considered when selecting the RPE to protect the workers while engineers are working on the LEV system. (8)

2 (a) Identify health risks associated with exposure to wood dust. (2)

(b) Outline control measures to reduce the health risks from exposure to wood dust. (6)

3 Identify items that should be inspected on a mobile tower scaffold prior to use. (8)

4 Outline how the following two protective measures reduce the risk of electric shock AND, in EACH case, give an example of its application: (a) reduced low voltage; (4) (b) double insulation. (4)

5 Outline factors that should be considered so that persons with sensory impairments and/or physical disabilities can safely evacuate a workplace in the event of a fire. (8)

6 Identify possible hazards that could cause workers to be injured when walking through an external storage area of a workplace. (8)

7 (a) With reference to mechanical hazards of machinery, describe how harm may arise from: (i) entanglement; (1) (ii) shearing; (1) (iii) drawing in; (1) (iv) crushing. (1)

(b) Identify non-mechanical hazards associated with the use of machinery. (4)

8 Identify rules that should be followed by a driver when leaving a forklift truck unattended during a work break. (8)

9 A dental surgery has installed an X-ray facility.
(a) Identify the health effects associated with exposure to X-ray radiation. (4)
(b) Outline control measures that could be taken in order to help reduce the risks to the operator from exposure to X-ray radiation. (4)

10 To reduce the risk of musculoskeletal disorders and back injuries, postal workers have been provided with manually operated trolleys to carry post during their delivery rounds. Outline factors that would need to be considered when carrying out a manual handling assessment of the use of the trolley. (8)

11 (a) Outline control measures that could be used to reduce the exposure of construction workers to high levels of noise from cement mixers. (4)

(b) Identify other noise hazards that may be present on construction sites. (4)