CAMBRIDGE SAFETY

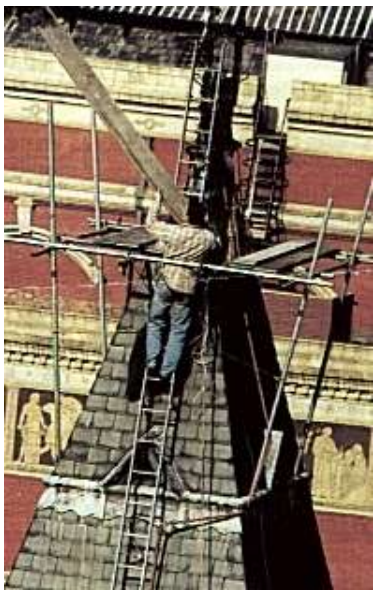
20th Anniversary

NEBOSH

CONSTRUCTION CERTIFICATE

NCC1

Elements 1 -12



KEYPOINTS SUMMARY

With example questions for information only

KEY POINTS NEBOSH CONSTRUCTION CERTIFICATE NCC1

Unit NCC1: Managing and controlling hazards in construction activities

Element 1: Construction law and management

- Main types of construction work
- Three main justifications for managing construction risks (Legal/moral/financial) (Links with NGC1)
- The range of activities undertaken on site
- Issues which increase the risk of construction accidents
- Main accident types in construction industry
- Meaning of “structure” and “excavation”

Construction Design and Management Regulations 2015

- What is construction work?
- Notifiable project criteria
- Completing F10

- Responsibilities of the:
    - Client & Domestic clients
    - Principal Designer
    - Designer
    - Principle contractor
    - Contractor
    - Workers
- CDM Paperwork
    - Typical contents of the pre-construction information
    - Typical contents and structure of a construction phase plan
    - H&S file requirements
    - F10 contents and use

Key sources of construction information : Legislation, ACOP, Guidance, Construction industry Information sheets, CITB, Trade Bodies , British and European Standards and professional bodies etc.

Example Exam Questions

1. A project is to be completed by a construction company which will involve the building of a four storey block on a new business park. To comply with the CDM Regulations identify the duties of the Client (5) and Principal Designer (5).
2. Identify typical information sources which could be referred to or used when assessing the risks involved with construction activities. (8)
3. Outline practical ways in which the designer of a new build could reduce the risks during the construction and ongoing use of the building. (8)
4. Identify the main factors to be considered when assessing the health and safety competence of a sub-contractor (8)
5. Identify the types of information that may be appropriate to include in a health and safety file (8)

Element 2: Construction site - hazards and controls

Initial site assessment factors to consider prior to starting work on site

- Previous / current use (including green / brown field site and existing occupied / unoccupied premises)
- History of site (including likelihood of asbestos, other contaminants and underground voids)
- Area of site, restrictions
- Ground conditions
- Nature of surroundings, proximity and features of roads, footpaths, railways, waterways, residential/commercial/industrial properties, schools etc.
- Means of access

Site appropriate control measures and facilities

- Site planning (including arrangements for site access, roadways, storage, loading and unloading, offices, lighting and signs)
- Site preparation
- Site security and means of protecting the public (perimeter fencing, signs, safe: viewing points, means of securing plant, chemicals, means of controlling environmental dangers such as mud public highways)
- Arrangements with client / occupier of premises (including site rules, co-operation, shared facilities, e.g., first aid, visitors and protection of other employees)
- Arrangements for site inductions.
- Relevant requirements of the Construction, Design and Management Regulations 2015

Welfare facilities on site

Sanitary conveniences, washing facilities, drinking water, changing areas, accommodation for clothing, rest, food/drink preparation and eating facilities, ventilation, heating and lighting of facilities and first aid.

Relevant requirements of the Construction, Design and Management Regulations 2015

Violence at Work : Situations where violence may occur in relation to construction, hazards and controls

Substance Misuse : Hazards and control strategies for workers

Movement of people

- Hazards to pedestrians on site
- Hazards to the general public from construction activities on public highways
- Environmental conditions on site contributing to accidents.

Control measures for pedestrian hazards

- Risk assessment; slip resistant surfaces; spillage control and drainage; designated walkways; fencing and guarding; use of signs and personal protective equipment (in particular, head and foot protection); information, instruction, training and supervision
- Maintenance of a safe workplace:
- Relevant requirements of the Construction, Design and Management Regulations 2015

Street Works

Overview of the requirements of the New Roads and Street Works Act 1991 (Links to element 3)

Example Questions

1. As part of a mains drainage project on a public highway with a speed limit of 40mph it will be necessary to leave the trench open for several days. Temporary traffic lights will be used during these works. The depth of the excavation will not exceed 1.2m. Permission for the works to be carried out has been obtained from the Highways Authority:
   Outline the traffic control measures that would be required in order to ensure compliance with the requirements of the New Roads and Street Act 1991 (8)

2. Identify three types of hazard for which eye protection is required and outline the types of issues to be addressed when training someone in the use of eye protection. (8)

3. A slip or trip is the single largest cause of injuries on construction sites. **Identify** ways of controlling slips and trips on site. **(8)**

4. An initial site assessment should be completed before a construction project commences in order to determine possible hazards that could be present on or near a site. **Outline** the factors that should be addressed when carrying out the initial site assessment. **(8)**

5. Outline the welfare facilities which will be needed on a temporary site when construction work is likely to be undertaken for at least 6 months.(8)

6. Identify the factors to take into account when assessing first aid requirements for a construction site with a number of different contractors working along site the client's own employees. (8)

Element 3: Vehicle and Plant Movement – Hazards and control

Safe movement of vehicles and plant within a construction environment

- Typical hazards causing loss of control and overturning of site vehicles; collisions with other vehicles, pedestrians and fixed objects, the particular problems of site layout, road surfaces, gradients, excavations, scaffolding and false work, and refuelling
- Control measures for safe vehicle operations
- Risk assessment; suitability and sufficiency of traffic routes; management of vehicle movements, including use of banksman; environmental considerations (visibility, gradients, changes of level, surface conditions); driver protection and restraint systems (rollover, falling materials, weather); suitability and maintenance of vehicles; means of segregating pedestrians and vehicles and the 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; selection and training of drivers; management systems for assuring driver competence including local codes of practice
- The traffic safety measures and signs used when conducting construction activities on public highways.
- Relevant requirements of the Construction, Design and Management Regulations 2015

Driving at work

- Extent of road related injuries
- Risk factors associated with driving at or for work
- Main ways of managing work related road safety and reducing the risks

Example Questions

1. Outline the steps to be taken to prevent accidents associated with plant and vehicles on a construction site. (8)
2. Outline the measures to be taken to prevent falls associated with stairwells and other holes in floors during the construction of a multi storey building. (8)
3. Outline the control measures that can be taken to avoid the risk of people being affected by reversing vehicles in the workplace (8)
4. **Outline** the features of a well-designed and maintained traffic management system on a busy construction site. **(8)**

Element 4: Musculoskeletal hazards and control

Musculoskeletal Disorders and work related upper limb disorders

- Factors which can lead to WRULDs
- Example construction related activities
- Main different upper limb disorders
- Control measures

Use of Display Screen Equipment

- Define “USER”
- DSE related injuries

DSE Regulations Overview

- Identify the user
- Analysis of work station – does it meet minimum standards
- Change of work activity – break up keyboard work
- Document holder/foot rest if required to reduce the risks
- Eye sight tests
- Training & Information

Manual handling (MH) hazards and risks

- Definition of MH
- Common types of manual handling hazard and injury
- Assessment of manual handling risks by considering the risk factors
- Role of “TILE” in completing manual handling risk assessments

Minimising manual handling risks

- Means of minimising the risks from manual handling in construction activities
- Recognise techniques for manually lifting loads to avoid musculoskeletal disorders due to lifting, poor posture and repetitive or awkward movements.

Hazards of lifting and moving equipment operations

- Hazards associated with, and safe use and maintenance of fork-lift trucks (including rough terrain), telehandlers, dumper trucks, excavators., manually operated load moving equipment (wheelbarrows, sack trucks, pallet trucks), lifts, hoists, conveyors and mobile and tower cranes. These different items of equipment tend to create a similar range of hazards and can be managed with a similar range of controls.

Control measure for lifting and moving equipment operations

- Safe use and maintenance of fork-lift trucks (including rough terrain), telehandlers, dumper trucks, excavators, manually operated load moving equipment (wheelbarrows, sack trucks, pallet trucks), lifts, hoists, conveyors and mobile and tower cranes (including lifting accessories)
- Requirements for managing lifting operations:
- Requirements for regular visual inspection and statutory requirements for the thorough examination and inspection of lifting equipment. (LOLER) 6 months for equipment used to lift people / 12 months for equipment used to lift loads

Example Questions

1. A rolled steel joist (RSJ) is to be used in the support of the second floor of a town house that is being refurbished. The layout of the house and the arrangements of the supports are such that mechanical means cannot be used to move them to their final position. Outline the factors that would need to be considered when undertaking a manual handling assessment of this task.
2. Describe four defects that might be identified in a wire rope sling during a routine inspection prior to use. (8)
3. What factors associated with the **Task** and **Person** may increase the risk of injury when carrying out manual handling tasks at work? (8)
4. Outline the ways in which fork lift truck could become unstable when being used outside on a construction site. (8)
5. Outline the factors that may cause a mobile crane to overturn during use.(4)
6. Give four ways in which a fork lift truck may become unstable whilst in operation. (4)
7. Outline the precautions to be taken during lifting operations with a mobile jib crane.(8)
8. Outline the control measures needed to reduce the risk of injury when using a materials hoist on a construction site. (8)
9. Outline the factors to consider when assessing the need to fit operator seat restraints to fork-lift trucks. (4)
10. Identify the factors that may affect the stability of a mobile crane and outline the measures that should be taken to reduce the risk of overturning during a lifting operation. (8)

Element 5: Work equipment - hazards and control

- Definition and scope of work equipment
- Identifying suitable work equipment
- Requirement for training & information
- Maintenance issues
- Example hand tools and safe use

MACHINERY AND EQUIPMENT - Covered by Provision & Use of Work Equipment Regulations 1998 – overview

- Definition of work equipment
- Suitable work equipment to be provided
- Maintenance
- Inspections
- Information, Instruction and Training for users
- EU conformance (CE marking)
- Dangerous parts – adequately guarded
- Controls – assessable, clearly marked
- Isolation – for electrical plant
- Stable for use
- Adequate Lighting – for safe use
- Controls for mobile equipment

MACHINERY GUARDING

- Typical Machinery Mechanical Hazards i.e. impact, cutting, entanglement, shearing
- Non mechanical hazards associated with machinery – i.e. electricity, hot surfaces etc.
- Machinery Hierarchy of Control
  - Fixed guard
  - Other guards: -Interlocking/Automatic/Adjustable Guarding
  - Trip devices
  - Other safety devices – two handed controls, hold or run handles (dead man's handle) etc.
  - Emergency stops
  - Jig stick, push rods
  - Management Controls: - training, instruction, signs, supervision, PPE etc.

Maintenance Work

- Typical hazards and controls

Examples of hazards and controls for common construction plant and equipment including : Photocopier / shredder / bench top grinder / pedestal drill / bench mounted circular saw/ hand fed planer/ spindle moulding machine/ compressors/ cement mixer/ plate compactor/ ground consolidation equipment/ circular saw/ road marking equipment and electrical generators used on site. (For each consider mechanical and non-mechanical hazards for each).

Example Questions

1. Outline the hazards associated with the use of a pedestrian operated plate compactor being used on the highway. (8)
2. Outline the factors that should be considered to ensure the safe operation of a bench-mounted circular saw. (8)
3. A large item of process equipment is situated in a factory. It is to be cleaned manually with a solvent prior to repair. Outline the precautions to minimize the risks to persons involved in the cleaning operation. (8)
4. It is necessary for maintenance purposes to enter a large cement silo situated on a construction site. Identify the likely hazards and outline the precautions to be taken to reduce the risks to personnel entering the silo. (8)
5. With respect to bench-top grinders that are used in a construction site workshop:

a. Identify three mechanical hazards associated with their use (3)
b. Outline the precautions to be taken to minimise the risk of injury to the operators of the bench-top grinders (5)

ELEMENT 6 ELECTRICAL SAFETY

Hazards and risks associated with electricity at work

- Principles of electricity (basic circuitry, relationship between voltage, current and resistance)
- Hazards and risks of electricity
- Selection and suitability of equipment for use in construction activities
- Emergency procedures following an electrical incident
- Proper planning and installation of a progressively extending electrical system on site, permit-to-work procedures (including requirements of an electrical permit)
- Advantages and limitations of protective systems (fuses, earthing, isolation, reduced low voltage systems, residual current devices, double insulation)
- Inspection and maintenance strategies
- Appropriate control measures for overhead power line hazards
- Control measures for underground services (Links with excavation element)

Example Questions

1. Explain how each of the following provides protection when using hand held electrically operated tools : earthing, residual current device, reduced voltage double insulation (8)
2. Describe the possible effects of electricity on the body when in contact with a live cable. (4)
3. Identify 8 examples of faults and bad practices that can contribute to electrical accidents concerning portable appliances. (8)
4. Hand-held electric drills are commonly used on construction sites.
   a. **Outline** the checks that should be carried out by the user of a drill to reduce the likelihood of electric shock. **(4)**

   b. Other than electricity, **identify FOUR** hazards associated with the use of hand-held electric drills. **(4)**
5. **Outline** the precautions to be taken before lifting operations are to be carried out adjacent to high voltage overhead power lines. **(8)**
6. Ground works are about to commence on a site crossed by high voltage overhead power lines. The work will involve the use of excavators and tipper lorries to remove spoil from the site. **Outline** strategy for the avoidance of accidents involving the overhead power lines. **(8)**
7. **Outline** practical measures to reduce the risk from electricity when using portable electrical equipment. **(8)**

Element 7: Fire - hazards and control

Basic fire principles, hazards and risks in the workplace

- Fire triangle
- Sources of ignition on site
- Classification of fires (A, B, C, D and F)
- Four methods of heat transmission and fire spread
- Common causes and consequences of fires during construction activities
- The requirement for a fire risk assessment

Fire prevention and prevention of fire spread

- Appropriate control measures to minimise the risk of fire in a construction workplace:
- Requirements for the storage of small quantities of highly flammable (up to 50 litres) or flammable (up to 250 litres) liquids
- Protection and Mitigation - Structural measures to prevent the spread of fire and smoke

Fire detection, fire alarm and firefighting equipment.

Means of escape

- Requirements for means of escape: travel distances, stairs, passageways, doors, emergency lighting, exit and directional signs, assembly points
- Need for continual review as construction activity progresses.

Evacuation of the workplace

- Emergency evacuation procedures: appointment of fire marshals - fire instructions; training - fire drills - roll call
- Provision for the infirm and disabled.

Fire risk assessment on a construction site

- Legal Requirements : Regulatory Fire Reform Order (work in existing buildings) and CDM 2015 for new builds and major construction projects
- Main stages of a fire risk assessment

Measures for fire prevention and protection relevant to construction sites

Welding

- Types
- Typical hazards
- Controls

Definition of flashpoint

- Liquefied petroleum Gas (LPG) hazards
- LPG types
- LPG controls
- Safe storage of highly flammables

Example Questions

1. Outline the practical measures that should be adopted to prevent fires and explosions during welding operations on a construction site (8)
2. Outline two methods of extinguishing fires with reference to the fire triangle and list the risks posed by a workplace fire. (8)
3. Outline the precautions that should be taken on a construction site in order that welding is carried out safely (8)
4. Outline eight ways of reducing the likelihood of fires occurring on a construction site located next to a primary school.(8)
5. Gas cutting and burning is to be undertaken on a refurbishment project. **Outline** the precautions required to help ensure the safe use of gas cylinders. **(8)**
6. A major hazard on a refurbishment project is fire.
   (a) **Identify THREE** activities that represent an increased fire risk in such a situation. **(3)**
   (b) **Outline** the precautions that may be taken to prevent a fire from occurring. **(5)**
7. **Outline** the control measures that should be adopted when cutting paving slabs with a petrol disc cutter. **(8)**
8. Arson on a construction site is a common cause of fire.
   (a) **Give** reasons why some construction sites may be vulnerable to arson attacks. **(4)**
   (b) **Identify** ways of reducing the risk of arson on a construction site. **(4)**

Element 8: Chemical and biological health - hazards and control

- Forms and classification of hazardous substances
- Meaning of acute, chronic and target organ
- Main classification of substances hazardous to health (Global Harmonisation System)
- Routes of entry of hazardous substances into the body
- Human defence mechanisms when exposed to hazardous substances
- COSHH Risk assessments
- HSE Guidance Note EH40 and the role of Workplace Exposure Limits
- Role and contents of safety data sheets (SDS)
- Risk controls for chemicals used in construction
- Monitoring techniques and sampling for gases and dust – examples of equipment used

Specific Agents

Ill health effects and control strategies for specific hazardous chemicals and biological agents including Organic solvents, carbon dioxide, liquid nitrogen, isocyanates, lead, silica, cement, asbestos, hydrogen sulphide, carbon monoxide, legionella, hepatitis, leptospira, blood borne viruses and tetanus.

Safe handling and storage of waste

- Waste Disposal: Duty of care, definition of hazardous and non-hazardous wastes, consignment notes, registration of sites, safe storage of incompatible wastes, minimising pollution from waste.
- Hazardous Waste Management
- Practical waste management on site
- Options for dealing with construction site waste

Example Questions

1. Describe the symptoms of occupational dermatitis (3)
   Identify the factors that may influence the likelihood of dermatitis occurring amongst site operatives handling wet cement. (5)
2. Outline the main controls to reduce to reduce dust levels on site (8)
3. What is the difference between a chronic and an acute effect in relation to hazardous substances? (2)
4. What information should be taken into account when assessing the risk of exposure by employees to a hazardous substance? (8)
5. Outline the controls which could be taken to protect employees due to work on a site which has been infested with a large rat population (6)
6. A construction site generates a variety of waste – what steps could be taken to reduce the amount of waste being disposed of at landfill? (8)
7. Explain the meaning of the term Workplace Exposure Limit. (2) Give an example of a substance with a WEL.
8. The refurbishment of a property requires the renewal of the existing heating system and hot water supply. During this some unidentified pipe insulation material is found. The material has not been disturbed and appears to be in good condition.
   State the actions that should be taken to reduce the risk to the health of the people on site.
9. Outline a system for the management and disposal of waste from construction site

(8)

10. Outline the health issues that should be addressed during routine health surveillance examinations for construction workers (8)
11. Outline the types of PPE required when: a) cutting medium density fibreboard using an electric saw in a site workshop and b) cutting up very old painted metal work using gas cutting equipment.(4+4)

Element 9: Physical and psychological health - hazards and control

Noise

- The effects of noise on the hearing mechanism – acute and chronic
- Three pathways noise is transmitted by
- Measurements of noise – decibel, dB(A)
- Intensity, pitch, loudness, decibels in relation to noise
- Example noise sources

Control of Noise at Work Regulations 2005 Overview (commenced April 2006)

- Lower Exposure Limit Values
- Upper Exposure Limit Values
- Exposure limit Values
- Action to be taken if any of the above levels are reached
- Noise control methods
- Types of hearing defenders – advantages and disadvantages of each

Vibration

- Causes/ Injuries / Prevention for hand arm and whole body vibration
- Exposure action values and limits for hand arm and whole body virbtaion
- Overview of Control of Vibration at Work Regulations

Radiation

- The difference between ionising and non-ionising radiation
- The main types of radiation, an industrial source, typical injuries and how they can be prevented.
- Overview of Ionising Radiations Regulations 2017
- Relevance to construction related activities
- Radon gas, where you could be exposed, ill health effects and controls for workers and buildings

Stress

- Risk factors which may lead to stress issues within the workforce
- HSE stress management standards : demand/control/support/ relationships/ role and change)
- Measures to reducing the risk

Example Questions

1 Outline the employer's duties under the Lower and Upper action levels of the Control of Noise at Work regulations. (8)
2 Outline ways in which the risks of hand arm vibration can be minimised (8)
3 Draw a labelled sketch to show the noise transmitted from using a drill on the floor of a building.(3)

4 Outline the measures which could be taken to protect both the employee using the drill and others in the area. (5)

5 In relation to the ill-health effects from the use of vibrating hand-held tools:

a. **identify** the typical symptoms that might be shown by affected individuals; **(4)**

b. outline the control measures that may be used to minimise the risk of such effects. **(4)**

6 In relation to exposure to vibration during construction activities:

a. Identify TWO common sources; **(2)**
b. **describe** the possible health effects of exposure to vibration. **(6)**
c. In order to reduce the effects described in (b), **outline** the measures that could be taken by:

- manufacturers of equipment; **(3)**
- employers; **(5)**
- employees. **(4)**

Element 10: Working at height - hazards and control

Working at height hazards and risks

- Basic hazards and factors affecting the risk from working at height (including vertical distance, fragile roofs, roof-lights, voids, 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
- Requirements for head protection
- Inspection requirements for work equipment

Safe working practices for access equipment and roof work

Scaffolding:

- design features of independent tied, putlog, fan, cantilevered and mobile tower scaffolds
- safety features (including sole-boards, base-plates, toe-boards, guardrails, boarding, brick guards, debris netting)
- requirements for scaffold erectors
- design of loading platforms
- scaffold hoists (persons, materials)
- ensuring stability: effects of materials, weather, sheeting, etc.; protection from impact of vehicles; inspection requirements

- Mobile elevating work platforms
- Use of ladders, stepladders, trestles, staging platforms
- Boatswains chairs
- Cradles & rope access

- Risk protection
- Fall arrest equipment, harnesses, safety nets, soft landing systems, crash decks
- emergency procedures (including rescue)

- Safe roof working
- Protection of others

- Working near water – hazards and controls.

Example Questions

1. A pitched roof is to be repaired while the building remains occupied. Outline the issues that should be addressed to reduce the risks to the workers involved in the repair work and others who may be affected by the work (8)
2. At what frequency must scaffolding be inspected? (4) Identify the issues which should be checked during a weekly examination of scaffolding (4)
3. An independent tied scaffold to a new ten-storey office block has collapsed into a busy street:
    (i) Outline the factors that may have affected the stability of the scaffold. (4)
    (ii) Describe the main principles of scaffold design to ensure the stability of such a scaffold. (4)

4. Identify the main hazards and corresponding controls associated with the use of a mobile elevated work platform (MEWP).(8)
5. Outline the precautions that should be taken when using a ladder as a means of access to the scaffold (8)
6. Describe putlog scaffold indicating its principle safety features(5)
7. Identify the inspection requirements of all erected scaffolds(3)
8. Outline the hazards and precautions to be taken when work is to be undertaken on a flat roof of a building (8)
9. **Outline** the main points to be checked during the inspection of an independent tied scaffold.
10. **Outline** the factors that can affect the risk of working at height. **(8)**
11. **Explain** the issues that would need to be addressed if work is to be carried out safely from a ladder. **(8)**
12. **Outline** measures that may be necessary to reduce the risk when work is to be carried out from a scaffold that overhangs a fast flowing river. **(8)**
13. A temporary boatswain's chair is to be used to undertake inspection work on the external façade of a four-storey block of flats – outline the factors to be considered in the installation and use of the chair to reduce the risk to the user and others who may be affected by the work (8)

Element 11: Excavation work and confined spaces – hazards and control

Excavations hazards and assessment

- The hazards of work in and around excavations: buried services, falls of persons/equipment! material into excavation, collapse of sides, collapse of adjacent structures, water ingress, contaminated ground, toxic and asphyxiating atmospheres, mechanical hazards
- Risk assessment: factors to consider (depth, soil type, type of work, use of mechanical equipment, proximity of roadways/structures/etc., presence of public, weather, etc.)
- Requirements of the Construction, Design and Management Regulations for safe excavations

Control measures for excavation work

- Identification / detection and marking of buried services; safe digging methods - methods of supporting excavations (e.g., steel sheets, support boxes) - means of access - crossing points
    - barriers, lighting and signs - safe storage of spoil
    - de-watering and use of freezing equipment
    - positioning and routing of vehicles, plant and equipment - personal protective equipment
- Particular requirements for contaminated ground (soil testing, welfare facilities, health surveillance, etc.)
- Inspection requirements for excavation support.

Confined spaces hazards and risks .

- Definition of 'confined space'
- Typical confined spaces found during construction activities
- Hazards and specified risks associated with confined spaces: exposure to toxic, explosive and oxygen deficient atmospheres; heat; water; free-flowing solids; restricted space
- Typical control measures

Example Questions

1. The water main supplying a large general hospital is to be repaired. Outline the precautions that are likely to be needed during the excavation work. (8)
2. Outline the main types of electrical hazard associated with excavations (4) and Describe the main precautions that should be taken (4)
3. Describe the main hazards that exist, and the precautions which are needed, when excavation work is to be carried out near to an existing building or structure. (8)
4. Identify two situations where a 'Permit to Work' would be needed and outline the key elements to be included in the Permit. (8)
5. Pipe-freezing using a liquid nitrogen jacket is to be carried out in a properly supported, 2 metre deep trench:

a. Identify the specific hazards associated with the pipe-freezing operation (2)
b. Outline the precautions that would be appropriate in such circumstances (6)

7. (a) Identify **FOUR** hazards associated with work in a confined space; **(4)**
   (b) Identify **FOUR** examples of a confined space that may be encountered

on a construction site. **(4)**

8. Excavations in construction can be at risk of flooding.
   (a) **Identify FOUR** ways in which water may enter an excavation. **(4)**

   (b) **Outline** measures that may be taken to prevent water entering an excavation. **(4)**

9. It is necessary for maintenance purposes to enter a large cement silo situated on a construction site.
   i) identify the likely hazards
   ii) Outline the precautions to be taken to reduce the risks to personnel entering the silo.

Element 12: Demolition - hazards and controls

Demolition hazards

- Hazards and risks of demolition
- Existence of services (including gas, electricity and water) - hazardous substances.
- Meaning of deconstruction, demolition, piecemeal demolition and deliberate controlled collapse.
- Requirements of the Construction, Design and Management Regulations for demolition

Demolition appropriate control measures

- General appropriate control measures for demolition work: - avoidance of premature collapse
- protection from falls and falling material
- sitting and use of plant, vehicles and other equipment - dust and fume
- noise and vibration
- protection of the environment - competence of the workforce
- Pre-demolition investigation / survey:
- purpose of pre-demolition investigation / survey
- presence of hazardous substances (particularly asbestos) - proximity and condition of other structures, roadways, etc.
- Items to be included in a demolition method statement

Role of CDM 2015 in demolition activities

Example Questions

1. Outline the health and safety issues to be considered when planning the demolition of a two-storey detached house in a residential street. (8)
2. Outline the main areas to be addressed in a demolition method statement. (8)
3. **Outline** the key issues to be addressed in a pre-demolition survey of a multi-storey block of flats in a city centre. **(8)**
4. A steel framed building is to be demolished. Identify the main areas to be included in a demolition method statement. **(8)**

5. A three-storey office block is to be demolished.

a) Outline the likely hazards to the environment that could be caused by the work. **(4)**

(b) **Outline** the actions that need to be taken to control the hazards stated in (a). **(4)**

6. **Outline** the key issues to be addressed in a pre-demolition survey of a multi-storey block of flats in a city centre. **(8)**