



Unit C: Workplace and work equipment

THURSDAY 5 JULY 2012
3 hours, 0930 to 1230

10 minutes reading time is allowed before the start of this examination. You may not write anything during this period.

Answer both Section A and Section B

SECTION A

This section contains six questions. Answer **ALL SIX** questions.

All questions carry equal marks.

The maximum marks for each question, or part of a question, are shown in brackets.

You are advised to spend about **15 minutes** on each question.

Start each answer on a new page.

- 1 **Outline** the arrangements in a motor fleet policy that will minimise the risk to a company sales force in which the sales personnel are expected to spend around 150 days a year travelling around their respective sales areas. (10)
- 2 (a) **Define** the following terms:
- (i) flash point; (2)
 - (ii) auto-ignition temperature. (2)
- (b) Flammable limit data, provided by a UK solvent manufacturer, as part of their safety data sheet, is given as the upper and lower flammable limits as percentages of vapour in air at standard air pressure and 20°C temperature.
- Outline** the way in which this data should be interpreted to give practical guidance on the prevention of fire and explosion. (6)
- 3 The condition of pipework 4m above ground requires inspection. It is proposed, in the absence of the availability of a mobile elevating work platform (MEWP), to utilise a personnel cage lifted to the required height by a forklift truck.
- Outline** factors to be considered when assessing the risks specifically associated with this method of access. (10)

- 4 (a) **Outline** the hazards associated with the use of steam in industrial power and heat generation systems. (5)
- (b) **Outline** causes and effects of the event known as a '*steam explosion*'. (5)
- 5 A scaffolder is using a pulley wheel and rope to lower scaffold tubes from the third level of a scaffold to a colleague at ground level. The scaffold is adjacent to a shop front. The scaffolder on the ground floor is placing the scaffold tubes horizontally onto the back of a lorry parked on a busy road. The scaffolders have already received adequate information, instruction, training and suitable supervision.
- Outline** additional *practical* measures that could minimise the risk of injury to the scaffolders and others that may be affected by this activity. (10)
- 6 A 150 year-old four-storey brick built brewery with a pitched slate roof is to be converted into executive apartments.
- (a) **Outline** the causes of structural damage that a building surveyor might discover. (5)
- (b) **Outline** the ways in which the conversion activities may give rise to structural failures. (5)

SECTION B

This section contains five questions. Answer **THREE** questions only.

All questions carry equal marks.

The maximum marks for each question, or part of a question, are shown in brackets.

You are advised to spend about **30 minutes** on each question.

Start each answer on a new page.

- 7 During a fire drill exercise at a large multi-storey office premises, the majority of the occupants evacuated the building in less than three minutes. However, all of the people based in one area of the building failed to leave the building until a further four minutes had elapsed.
- (a) **Explain** the issues that may have contributed to the delay in evacuation. (15)
- (b) **Outline** the advantages of undertaking regular fire drills in workplaces. (5)

- 8 (a) **Outline** factors that can increase the risks from the use of electricity on a construction site. (10)
- (b) **Outline** control measures that can be used to minimise risks from the use of electricity on a construction site. (10)
- 9 (a) **Describe** the following hazards associated with an abrasive wheel:
- (i) mechanical; (5)
- (ii) non-mechanical. (5)
- (b) **Describe** the protective devices and guards that would be found on an abrasive wheel to minimise the risk of injury from mechanical hazards. (4)
- (c) **Explain** the risks associated with an abrasive wheel arising from its deterioration. (3)
- (d) **Explain** why employees require training for activities involving an abrasive wheel. (3)
- 10 A company is planning a change of premises from one containing a 'manual' warehouse to one which contains automated order picking and automated guided vehicle (AGV) goods transfer facilities.
- (a) **Outline** the risks which might be reduced by the move. (10)
- (b) **Outline** the risks which might arise from the move. (10)
- 11 A road haulage company intends to transport significant quantities of bulk flammable materials in tank containers. They are advised that they require a 'Dangerous Goods Safety Adviser'.
- (a) **Outline** the criteria under which a 'Dangerous Goods Safety Adviser' must be appointed. (4)
- (b) **Outline** the *particular* duties of a 'Dangerous Goods Safety Adviser'. (6)
- (c) **Outline** the *procedures* and *practices* that a 'Dangerous Goods Safety Adviser' should be monitoring in the event that the tender is successful. (10)