

Mark Scheme (Results)

January 2010

Principal Learning

Construction CB304
Create the Built Environment: Health, Safety
and Environmental Influences

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1	<p>Description of any two of the following methods:</p> <ul style="list-style-type: none"> • Avoiding over ordering. • Coordinated design and materials sizes. • Using 'just in time' principles for material delivery. • Use of pre-fabricated components. • Storing materials correctly on site. • Avoiding 'double' handling. • Careful handling of materials on-site. • Avoiding cutting and fixing errors. • Avoiding measurement errors. • Accurate calculation and ordering of material quantities. • Protection of fixed materials. • Using 'off cuts'. • Recycling and reuse methods. • Avoid exceeding shelf life of materials. • Methods to avoid loss, theft or vandalism of materials. <p>Any other appropriate response.</p> <p>MAX 2 marks for each of any two descriptions.</p> <p>1 mark for a simple description 2 marks for more detailed description. No mark for identification only.</p>	(4)

Question Number	Answer	Mark
2	<p>Description of any two of the following duties:</p> <ul style="list-style-type: none"> • Give suitable and sufficient advice to clients in order to help them to comply with their duties. • Advise the client about selecting competent designers and contractors. • Help identify what information will be needed by designers and contractors. • Liaise with the principal contractor regarding the contents of the Health and Safety File. • Co-ordinate the arrangements for health and safety of planning, design and construction phase. • Ensure that HSE is notified of the project. • Advise on the suitability of the construction phase plan. • Prepare, review and update the Health and Safety File, and pass to the client when complete. <p>Any other appropriate response.</p> <p>MAX 2 marks for each of any two descriptions.</p> <p>1 mark for a simple description 2 marks for more detailed description. No mark for identification only.</p>	(4)

Question Number	Answer	Mark
3	<p>Description of any two of the following causes:</p> <ul style="list-style-type: none"> • Incorrect manual handling. • Activities that could cause repetitive strain injury. • Skin contact with harmful chemicals. • Inhalation of harmful dust, fumes, asbestos, MDF, hardwood dusts. • Skin cancer from sunburn. • Excessive noise. • Unprotected prolonged use of vibrating plant that could cause vibration white finger. • Weils disease. <p>Any other appropriate response.</p> <p>MAX 2 marks for each of any two descriptions.</p> <p>1 mark for a simple description 2 marks for more detailed description. No mark for identification only.</p>	(4)

Question Number	Answer	Mark
4	<p>Includes:</p> <ul style="list-style-type: none"> • Liquid petroleum gas. • Propane gas. • Portable generators. • Mains supplied electricity. • Compressed air. • Battery • Solar (to include photovoltaic cells) • Wind <p>Any other appropriate response.</p> <p>Max 1 mark for each identification of any two types.</p>	(2)

Question Number	Answer	Mark
5 (a)	<p>Description of any two of the following environmental benefits:</p> <ul style="list-style-type: none"> • The electricity produced is pollution free. • No carbon dioxide emissions. • No greenhouse gases. • No emissions of any kind. • Clean energy. • No moving parts therefore limited maintenance. • Energy is produced where it is used, so little energy is lost moving it around. • Decrease or remove completely the dependence on fossil fuel-generated electricity. • Reduction in the requirement for mains electricity. • Minimal impact on land use or the ecology of sites. <p>Any other appropriate response.</p> <p>MAX 2 marks for each of any two descriptions.</p> <p>1 mark for a simple description 2 marks for more detailed description. No mark for identification only.</p>	(4)

Question Number	Answer	Mark
5 (b)	<p>Description of any two of the following financial benefits:</p> <ul style="list-style-type: none"> • Saving on overall energy bill. • No electricity charges. • Electricity suppliers will pay for excess electricity. • Fixed price for electricity. • Unaffected by future energy prices • Exemption from the Climate Change Levy. • Reduced whole life costs. • Ongoing costs are minimal. • Potential increase in property values for existing owners. • Can attract grants towards installation costs. <p>Any other appropriate response.</p> <p>MAX 2 marks for each of any two descriptions.</p> <p>1 mark for a simple description 2 marks for more detailed description. No mark for identification only.</p>	(4)

Question Number	Answer	Mark
6	<p>Description of any three of the following human factors:</p> <ul style="list-style-type: none"> • Lack of understanding of personal responsibility. • Lack of training. • Lack of communication. • Lack of competence. • Lack of awareness. • Lack of discipline / compliance. • Language barriers. • Physical fitness. • Physical attributes inappropriate for task. • Mental health. • Age. • Tiredness. • Complacency/carelessness. • Under the influence of alcohol or drugs. • Emotional state, stress, anger, grief, worry etc. • Personal pressure to complete task. • Lack of concentration/distraction. <p>Any other appropriate response.</p> <p>MAX 2 marks for each of any three descriptions.</p> <p>1 mark for a simple description 2 marks for more detailed description. No mark for identification only.</p>	(6)

Question Number	Answer	Mark
7	<p>Description of any two of the following methods:</p> <ul style="list-style-type: none"> • Biomass. • Wind turbines. • Solar. • Photovoltaic. • Ground/air source heat pumps. • CHP • Water turbines • Waste incineration <p>Any other appropriate response.</p> <p>MAX 3 marks for each of any two descriptions.</p> <p>1 mark for a simple description 2 marks for more detailed description. 3 marks for a full description. No mark for identification only.</p>	(6)

Question Number	Answer	Mark
8 (a)	<ul style="list-style-type: none"> • A written notice issued by a health and safety inspector to stop work due to a serious breach of health and safety regulations. Work must not recommence until health and safety problems identified and rectified. <p>1 mark for a simple explanation 2 marks for more detailed explanation. No mark for identification only.</p>	(2)

Question Number	Answer	Mark
8 (b)	<p>Description of any two of the following examples:</p> <ul style="list-style-type: none"> • Defective plant, machinery or equipment. • Missing or inadequate guards or barriers. • Working at height without effective means of preventing falls of persons. • Incorrect or defective access equipment. • Inadequate safe means of access / egress. • Incorrect or defective electrical equipment. • Exposure to hazardous substances. • Misuse of mechanical lifting equipment. • Inadequate control of work in confined spaces. • Any dangerous occurrence pending accident investigation. <p>Any other appropriate response.</p> <p>MAX 2 marks for each of any two descriptions.</p> <p>1 mark for a simple description 2 marks for more detailed description. No mark for identification only.</p>	(4)

Question Number		Indicative Content
9		<p>Principles include:</p> <ul style="list-style-type: none"> • The use of local, regional or national suppliers. • Environmental impact in terms of specification. • Environmental impact in terms of distance travelled. • Sourcing, selection and use of sustainable materials. • Extraction of raw materials. • Fresh water used in the manufacturing process. • Impact of chemicals, additives and treatments. • Recycling of waste materials. • Manufacture related CO₂ emissions. • Reclaiming of materials. • Fuel usage. • Manufacture and transport of ancillary equipment. • Transport of finished material. • Longevity/durability of materials to minimise future maintenance. • Accuracy in calculations of materials to prevent over-ordering. <p>Any other appropriate response</p>
Level	Mark	
	0	No rewardable material
1	1-4	Some relevant principles identified with a brief description and no evaluation.
2	5-8	Some relevant principles identified with a more detailed description and some basic evaluation.
3	9-10	Sound description and evaluation of a broad range of relevant principles.

Question Number		Indicative Content
10		<p>Well presented and structured answers should contain an introduction, main content and conclusion.</p> <p>Introduction: Should highlight the need to be 'reasonably practicable', and only consider the significant hazards when carrying out risk assessments.</p> <p>Main content: Should contain identifications and descriptions of the following five risk assessment procedures:</p> <ul style="list-style-type: none"> • Identify the significant hazards (specific hazard - underground petrol storage tanks) • Decide who might be harmed and how. • Evaluate the risks and decide on control measures. • Record your findings and implement them. • Review your assessment and update if necessary. <p>Conclusion: Should highlight that the procedure could be changed for more complex risks or circumstances, and that there is no one set way to carry out the procedure.</p> <p>Any other appropriate response.</p>
Level	Mark	
	0	No rewardable material
1	1-4	Poorly structured report with no introduction or conclusion. Some risk assessment procedures identified but brief in description.
2	5-8	Reasonably well structured report which attempts introduction and conclusion. Risk assessment procedures identified with more detailed description and increasing application to the project scenario.
3	9-10	Well structured report with clear introduction and conclusion. Sound description of the risk assessment procedures specifically focussed on the project scenario.

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