

**6720-002 and 502 Constructing and Maintaining the Built Environment
March 2018 – Mark Scheme**

Q	Acceptable answer(s)	Guidance	Max marks
1a	Building Services Engineering.	n/a	1
1b	1 mark each, up to 2 marks: <ul style="list-style-type: none"> • Design. • Planning. • Estimating. • Tendering. • Construction. • Refurbishment or adaptation. • Decommissioning. • Demolition. • Repair and maintenance. 	n/a	2
2	Marks as shown to a maximum of three marks. Precedence diagrams are used to schedule activities in a project plan (1), to show order of importance They use boxes (nodes) (1), to represent activities (1), and connect them with arrows (1), to show the dependencies (1), any path with no slack is known as the critical path (1).	n/a	3
3a	Brick/masonry (1) and concrete block/concrete (1).	n/a	2
3b	Timber or metal studs.	n/a	1
4a	Pad.	n/a	1
4b	Pile.	n/a	1
4c	Raft.	n/a	1

5	<p>1 mark each, up to 4 marks:</p> <p>(a) Foundations. (b) Floor joist. (c) Oversite concrete. (d) Hardcore.</p>	No marks to be awarded for only identifying the material used for each component.	4
6	<p>Marks as shown to a maximum of four marks.</p> <p>Wet finishes include plaster, renders, paint and wallpaper (any 1). Considerable 'drying-out time' required (1), movement of timber components is an issue (1) and wet finishes can be messy (1). Dry finishes include plasterboard, tiles, timber panelling, vinyl coverings (any 1). No time lost to drying-out and no shrinkage as there is no water involved (1) and instant stability/rigidity (1), allowing other trades to work around the finish immediately (1).</p>	n/a	4
7	<p>Marks as shown up to a maximum of four marks for a coherent link between property and uses.</p> <p>Steel is used as it has a high strength and density (either for 1) and can be used for structural purposes (1). Can be used for decorative/aesthetic qualities (1). Steel is non-porous and does not absorb water (1). Can be used to transport services (1). Steel has high thermal and electrical conductivity (1) and can be used for heating and electrical wiring purposes (either for 1). Environmental benefits/sustainability due to recyclability and reduced waste (1 for either). Fast to erect (1) and easy to disassemble (1). Durability (1) Low maintenance (1).</p>	n/a	4
8a	<p>1 mark each, up to 2 marks:</p> <ul style="list-style-type: none"> • Weather. • General wear and tear. • Vandalism. • Bad design. • Bad workmanship. • Fungal/insect attack 	n/a	2
8b	<p>1 mark each, up to 2 marks:</p> <ul style="list-style-type: none"> • Manual insertion. • Injection. • Electro-osmosis. • Dry vent (accept vents). 	n/a	2

9a	1 mark each, up to 2 marks: <ul style="list-style-type: none"> • Electric. • Gas. • Water. • Drainage. • Telecoms. 	No marks to be awarded for stating electrician instead of Electric.	2
9b	1 mark each, up to 2 marks: <ul style="list-style-type: none"> • Roof structure/truss/rafters • Chimney • Guttering/downpipes or any related description. • Covering. 	Marks appropriately awarded for describing a guttering system without necessarily mentioning the word guttering.	2
10	Marks as shown to a maximum of six marks. Preventive maintenance is performed in sports clubs and their elements and components at regular intervals (1) in order to lessen the likelihood of failure (1). Preventive maintenance is performed while everything is still working within the club (1) so that nothing breaks down or fails unexpectedly (1).Emergency (reactive or responsive) maintenance implies maintenance on or after failure (1) and this is more inconvenient (1) and generally costs more (1) and leads to down-time in use of buildings (1). Any response which considers minimising risk to the user/customer/public (1). To sustain the image of the business/aesthetic appeal (1). Can help to eliminate recurring issues/a good fault finding tool (1). Required due to excessive wear and tear on the building due to the nature of use (1).	n/a	6
11a	1 mark each, up to 2 marks: <ul style="list-style-type: none"> • Install hot and cold water supply. • Repair/install/service central heating. • Bathroom installation. • Install sanitation system. • Install drainage. • Fix lead work. • Repair glazing. 	n/a	2
11b	1 mark each, up to 2 marks: <ul style="list-style-type: none"> • Installation (lights, power, special circuits, new circuit boards). • Repair (lights, power, special circuits, new circuit boards). • Maintenance (lights, power, special 	n/a	2

	circuits, new circuit boards).		
12a	i) Face mask or respirator. ii) Safety goggles.	1 mark for i) and 1 mark for ii)	2
12b	i) Plastering/bricklaying. ii) Painting and decorating.	1 mark for i) and 1 mark for ii)	2
13	Marks as shown to a maximum of five marks. Risk assessments identify possible risks on a construction project (1) and are a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking (1). Employers have a duty to provide these to their employees (1) and the employees have a duty to comply with them (1). They convert hazards into risks and propose suitable control measures (1). Increases the awareness of the hazards on a construction project (1). Used to inform all workers of the hazards and risks (1), to be carried out prior to work (1), to identify who may be at risk (1), to identify the level of harm associated with the risk (1) and to help reduce/eliminate risks to workers (1).	n/a	5
14	0-3 marks: The candidate identifies a suitable roof structure but fails to justify the choice made, identifies appropriate repair and remediation work without describing what is to be done, identifies only one or two of the craft operatives required and provides an incomplete and only partially correct list of the tools, equipment, materials and PPE needed by one of the operatives. 4-6 marks: The candidate identifies a suitable roof structure and partially justifies the choice made, clearly and accurately describes a wide range of appropriate repair and remediation work, identifies all of the craft operatives required and provides a list of most of the tools, equipment, materials and PPE needed by one of the operatives. 6-9 marks: The candidate identifies a suitable roof structure and clearly and accurately	Indicative content <ul style="list-style-type: none"> • selection of suitable domestic roof such as trussed rafters, with covering using existing slates, or replaced by clay tiles and slates sold on. • replacement of windows with double-glazed timber, metal or plastic windows. • provision of DPC to walls with rising damp (probably injection method). • need for bricklayers, carpenters, roofers, plasterers and painters and decorators. 	9

	<p>justifies the choice made, describes a comprehensive and coherent range of appropriate repair and remediation work, identifies all of the craft operatives required and provides a clear and accurate list of all of the tools, equipment, materials and PPE needed by one of the operatives.</p>	<ul style="list-style-type: none">• tools, equipment, materials and PPE as appropriate to the selected craft or trade.	
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