

D 9

TED (15)-5011

(REVISION – (15)

BUILDING MAINTENANCE AND SERVICES

Qt No.	Scoring Indicators	Split Score	Total Score
I. 1)	PART- A		
	Buildings can be vulnerable to climate change, also vulnerable to environmental impacts of air pollution.	2	
2)	Lack of foundation. Temperature influence. Damage due to damp.	2	
3)	Routine Maintenance, also known as preventive, preventative or cyclical maintenance, is an essential part of the on-going care and upkeep of any building.	2	
4)	The sewage can be treated: in a septic tank at each building or in a lagoon itself just before the lagoon in a large septic tank or macerator system	2	
5)	The arrangement employed to prevent a damaged structure, due to either foundation settlement or other reasons form collapse, is called shoring.	2	10
II 1)	PART- B		
	The avoidance of accidents, which may harm people. The continued operation of facility. The protection of the capital investment in the asset. It improves the life of structure. Improved life period gives better return on investment. Better appearance and aesthetically appearing. Leads to quicker detection of defects and hence remedial measures. Prevents major deterioration that leads to collapse. Ensure safety occupants.	1x6	6
2)	Unequal settlement of sub-soil. Unequal settlement of masonry. Sub-soil moisture movement. Lateral pressure on the walls. Lateral Movement of sub-soil		

3)	<p>Weathering of sub-soil due to trees and shrubs. Atmospheric action Cracks in concrete must be repaired as soon as possible.</p> <p>a) Waterproofing</p> <p>Epoxy Grouting: Grouting can be performed in a similar manner as the injection of an epoxy. However the use of an epoxy is the better solution except where considerations for the resistance of cold weather prevent such use in which case grouting is the comparable alternative. The method includes: Cleaning of the crack surface and removing any type of oily dirt or contaminants. Widen the crack just a little to allow the grouting to occur at a faster pace. Fill the epoxy grouting (from Epoxy Injection) and seal the surfaces immediately to prevent epoxy gel from falling off. If Epoxy grouting cannot be done, you can do the same using Plaster of Paris with water, ONLY if the crack is shallow and not widening. When the gel dries up properly, paint the roof to give it a proper finish and to protect it from dust and water.</p> <p>Stitching Method: Holes are drilled at both the ends of the crack and 'stapled' using short-legged u-shaped reinforcement unit. The holes are then filled by epoxy gel or non-shrink grout.</p>	1x6	6
		1	
4)	<p>Defective drainage systems occur in various forms and to different extents in all types of buildings, irrespective of age. Leaking or broken drainage pipes at external wall Rusty internal drainage pipes Unauthorized alteration of drainage system Preventive measures: Regular Inspection</p> <p>Building owners, owners' corporations and building management and maintenance personnel are encouraged to conduct regular inspection on the drainage systems and sanitary fitments of their buildings to ensure that they are properly maintained and in working condition.</p>	3	6
5)	<p>A fitting is used in pipe systems to connect straight pipe or tubing sections, adapt to different sizes or shapes and for other purposes, such as regulating (or measuring) fluid flow.</p> <ul style="list-style-type: none"> • Elbow • Coupling 	4	6

	<ul style="list-style-type: none"> • Union • Nipple • Reducer • Double-tapped bushing • Tee • Diverter tee • Cross • Cap • Plug • Barb • Valve 	<p>½x12</p>	<p>6</p>
<p>6)</p>	<p>-Expensive and inconvenient. -Internal spaces may reduce upon installation of internal wall insulation. -Might cause negative impact to heritage and archaeological assets caused by usage of unproven methods, technologies or instruments. Further research is needed especially on insulation mechanism on walls and the effect on retrofit on buildings fabrics. -More education, training and activities on maintaining and preserving the buildings need to be taught to address issues and to create awareness. -The risk of retrofitting needs to be highlighted, not just focusing on the benefits of retrofitting and discussion between retrofit and refurbishment.</p>	<p>1x6</p>	<p>6</p>
<p>7)</p>	<p>A solid foundation laid below ground level to support or strengthen a building.</p> <p>Soldier Pile and Lagging. Pressure / Chemical Grouting. Soil Nails and Shot-Crete. Hydraulic Shoring. Pneumatic Shoring. A choice of Timber or Aluminium materials.</p>	<p>1x6</p>	<p>6</p>

