



Final Examination -2009

Date: 08-03-2009 (Sunday)

Time Allowed: Three(03) hours

**Answer Five (05) questions out of Eight (08) questions.
Answers should be illustrated with sketches and diagrams with assumptions stated,
clearly and neatly**

- (Q1)** (a) Adhesives play different roles and wide variety of applications in the construction Industry. In this context, Polymer adhesives in present day provide wide variety of physical as well as chemical properties.
- Briefly describe the categories of Polymer adhesives that are commonly used in the construction Industry.
 - Explain with examples how the choice of a polymer adhesive is varied with the application.
- (b) Paints and Varnish are few examples for polymer coatings, which are applied over smooth surfaces to provide the required protection from different attacks from moisture and corrosive chemicals.
- Name the basic components of a Polymer coating and explain the functionality of each component.
 - Describe the mechanisms of forming a polymer coating on a solid surface.
- (Q2)** Fiberglass is becoming more integral part in both Construction and Building Industry due to its cost and flexibility in application.
- Compare the advantages and disadvantages of using Fiberglass and Metals in the construction works.
 - What are the basic components of Fiberglass and describe the functionality of each component.
 - Describe the main production methods of producing fiberglass.
 - Briefly discuss the advantages and disadvantages of the products that are produced by using above (iii) mentioned production techniques.
- (Q3)** Concrete as a construction material resembles with rock with most of its mechanical properties, except due to its ability to withstand tensile stresses which is provided by the reinforced iron bars in reinforced concrete structures.
- Explain the process of machine mixing of concrete
 - Discuss the functionality of the gauge box in preparation of concrete.
 - Explain how you would put cement and other aggregates in the bucket during the rainy season as the sand is wet.
 - Discuss how the quantity of water added to a concrete mixture affects quality of the concrete.



- (Q4)** Floor and wall tiling has become very common in most of the construction works in Sri Lanka.
- Explain the factors that will govern the performance of Floor or Wall tiles
 - Discuss the factors that will govern the choice of a flooring tile
 - Name five (05) common defects that can be found in a ceramic wall tile
 - Discuss the factors that will be considered when choosing floor tile for a particular application.
- (Q5)** Bitumen and tar are two basic binding materials that are extensively used in the road construction Industry.
- Discuss the factors that are considered in the choice of Bitumen and Tar
 - Describe types of asphalts and its relevance for Bitumen
 - Compare the advantages and disadvantages of using bitumen emulsions and cutbacks
 - Explain the function that is carried out by the Primers in the road constructions
- (Q6)** Plaster is one of the basic finishing materials used for finishing of walls and sand which makes this plaster plays an important role.
- Briefly describe the role of sand as a material used in Plaster for finishing
 - Explain the essential characteristics of the sand that should be existed when using for plasters.
 - Discuss how the grading of the sand contributes to the quality of the Plaster
 - Propose a mix proportion for mortar for an internal wall
- (Q7)** Paints as a finishing material is having a great variety and flexibility in application in present day constructions.
- Describe the essential components of paints
 - Briefly discuss about the types of wood varnishes and the varnishing process.
 - Briefly explain the steps that should be followed when painting on a new wood work
 - Discuss how the different types of paints are chosen for iron works based on the application and the environment.
- (Q8)** (a) Briefly explain the advantages using Biodegradable Geotextiles in the construction Industry and basic civil engineering applications of these types geotextiles
- (b) Explain how Geotextiles can be used as;
- Separator
 - Erosion Controller

