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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**THIRD SEMESTER EXECUTIVE M. ARCH. (ADVANCED DESIGN)**  
**DEGREE EXAMINATION – JAN/FEB 2018**  
**SUBJECT: ARM 703 E – NEWER BUILDING MATERIALS**

Monday, January 29, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 50

**✍ Answer any FIVE full questions.**

- 1A. What is Self-Consolidating Concrete? Explain its characteristics.  
1B. What are the development in roofing materials in building construction?  
(5+5 = 10 marks)
- 2A. What are the advantages of modern derivatives of timber? Give examples.  
2B. Explain Building Integrated Photovoltaic system along with its components.  
(5+5 = 10 marks)
- 3A. Write the use of polymer in building construction.  
3B. **Write short note on:**  
i) WPC                      ii) Aerogel  
(5+(2½+2½) = 10 marks)
- 4A. What are the various materials used for building cladding?  
4B. Explain the factors for selection materials for cladding in building construction.  
(5+5 = 10 marks)
5. **Write short notes on:**  
5A. Cross laminate timber  
5B. Laminated glass  
5C. Admixtures used in concrete  
5D. Liquid granite  
(2½+2½+2½+2½ = 10 marks)
6. What is LCA of a building materials? Elaborate on the phases of it for the building materials.  
(2+8 = 10 marks)

