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## GUJARAT TECHNOLOGICAL UNIVERSITY BE- SEMESTER- 1<sup>st</sup> / 2<sup>nd</sup> EXAMINATION - SUMMER 2016

**Subject Code: ENG001** Date:09/06/2016 **Subject Name: ENGINEERING SYSTEM** Time: 02:30 PM to 5:00 PM **Total Marks: 70 Instructions:** 1. Attempt any five questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 (a) Draw the communication system block diagram and explain each block in 07 detail. What is earthing? Describe the importance of earthing. 07 **(b) Q.2** (a) List down the advantages of composite bridges. 07 Briefly discuss various methods which can be used for determining number 07 of light fittings in a room. (a) Enlist types of sensors used in smart home system and explain any one in Q.3 07 List various bridges based on super structure and draw sketch of Balanced 07 cantilever bridge. **Q.4** (a) What is microcontroller? What is the role of microcontroller in home **07** automation system? What is fuse? How does it provide the protection? Discuss the properties of **07 (b)** fuse wire. Define Conduction, convention and radiation. Q.5 07 (a) **(b)** Describe the architecture of the "smart home" control system 07 **Q.6** Why the bubbles of water are formed around the chilled water bottle taken **07** (a) out of refrigerator? Explain feedback phenomenon in detail with necessary block diagram. **(b) 07** 0.7 (a) Draw sketch of T-girder bridge **07** Explain working of window air conditioner with neat sketch. 07 **(b)** 

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