GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2023

Subject Code:3151711   **Date:05-12-2023**
Subject Name: Building Automation
Time:10:30 AM TO 01:00 PM   **Total Marks:70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Enlist important aspects of building automation.	**03**
	(b)	Draw block diagram of BMS (Building Management System)	**04**
	(c)	Compare green building and smart building concept, explain architecture of IBMS	**07**
Q.2	**(a)**	Draw and explain fire triangle.	**03**
	(b)	Draw fire panel diagram and explain in brief.	**04**
	(c)	Write short note on various fire sensors.	**07**
		OR	
	(c)	Write short note on various fire detectors	**07**
Q.3	**(a)**	How access control helpful in residential and commercial building?	**03**
	(b)	Compare NVR and DVR with various points.	**04**
	(c)	Write short note on CCTV and its application	**07**
		OR	
Q.3	**(a)**	Briefly explain type of security system used in commercial building.	**03**
	(b)	Enlist various types of lances and cable used in CCTV.	**04**
	(c)	Write short note on RFID enabled and finger print enable access control	**07**
Q.4	**(a)**	Compare Smart cards and Proximity cards	**03**
	(b)	Differentiate between VAV and CAV.	**04**
	(c)	Explain working principle of HVAC system and explain its architecture with all components.	**07**
		OR	
Q.4	**(a)**	What is ASHRAE? Explain any four symbols associated with it	**03**
	(b)	Write concept and utility of home automation devices used currently.	**04**
	(c)	Discuss DDC in HVAC. How different types of hazard and their level are identified using NFPA rating?	**07**
Q.5	**(a)**	Which are the parameter required for measurement, monitoring and control as a part of overall Building Automation System?	**03**
	(b)	Enlist industrial standards of fire.	**04**
	(c)	Explain typical Air Handling Unit with basic operation. Also explain in brief Chillers used in HVAC.	**07**
		OR	
Q.5	**(a)**	List out the key areas measured by LEED in green buildings?	**03**
	(b)	Briefly explain concept of intelligent and smart lighting system	**04**
	(c)	Explain energy Management system with reference to building automaton and LEED certification	**07**

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