

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024

**Subject Code:3151711**

**Date:25-11-2024**

**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.

	<b>Marks</b>
<b>Q.1</b> (a) Explain similarity between green building and smart building.	<b>03</b>
(b) Draw any four ASHARE symbols.	<b>04</b>
(c) Write short note on architecture and components of BMS.	<b>07</b>
<b>Q.2</b> (a) List out basic function of control panel. Explain it for access control.	<b>07</b>
(b) Explain the different types of fire sensors and smoke detectors, along with their functions and classifications.	<b>07</b>
<b>OR</b>	
(b) Explain vapor compression cycle for the chiller system.	<b>07</b>
<b>Q.3</b> (a) Categorize boiler according to heating method and explain its operation.	<b>03</b>
(b) Discuss the points to increase efficiency of HVAC system.	<b>04</b>
(c) Explain IP and POE-Powered access control system with its advantages.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) List outdoor related peripheral devices for the access control	<b>03</b>
(b) Explain RFID enabled access control with components.	<b>04</b>
(c) What are the main components of an Air Handling Unit? Describe the function of each component with suitable diagram.	<b>07</b>
<b>Q.4</b> (a) Give Difference between Green Building and smart Building.	<b>03</b>
(b) Write short note on Fire Standards.	<b>04</b>
(c) Explain about lighting control system with basic instruments.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) List out the Different Methods for Energy Saving.	<b>03</b>
(b) What are the fundamental principles of green building? Please explain each in detail.	<b>04</b>
(c) Explain the architecture of a Fire Alarm System with its key components and their functions.	<b>07</b>
<b>Q.5</b> (a) Describe concept of Vertical Farming.	<b>03</b>
(b) Explain Video surveillance networked (DVR) Systems.	<b>04</b>
(c) Provide examples of successful Air Handling Unit installations in different types of buildings. What challenges were faced, and how were they addressed?	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) Write short note on different communications used in ACS.	<b>03</b>
(b) Explain operations and types of camera.	<b>04</b>
(c) Compare the performance of a commercial office building versus a hospital for HVAC system. What factors influence the choice of HVAC type?	<b>07</b>

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