SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

AN AUTONOMOUS INSTITUTION

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

VII Semester

B.E-Computer Science Engineering

19OE212 – Building Automation

Regulations 2019

QUESTION BANK FOR IAE 1

	PART A
1	What does HVAC stand for, and what is its primary purpose?
2	Summarize the purpose of temperature sensors in an HVAC system.
3	Differentiate pneumatic and electric actuators.
4	How does a thermostat function as a feedback controller in residential HVAC systems?
5	Define thermal radiation, and how is it relevant in HVAC system design?
6	List the factors affecting the energy efficiency of an HVAC system.
7	Pressure sensors are crucial in HVAC system. Jestify.
8	How do programmable controllers contribute to energy efficiency in HVAC system?
9	State the importance of thermal insulation in preventing heat loss or gain in HVAC ducts and pipes.
10	How does a feedback control loop maintain a desired temperature range in a room or building?
	PART B & C
1	Interpret how do temperature sensors work, and what are the basic principles underlying their ability to measure temperature accurately?
2	Illustrate the basic functions of an HVAC system in a building, and why is it considered a critical component of modern construction?
3	Describe the primary components of a typical HVAC system, including the roles of the thermostat, evaporator, condenser, and air ducts with a neat sketch.
4	With a neat sketch explain the principles behind different types of level sensors, such as ultrasonic, capacitance, and float-type sensors, and describe their specific applications.
5	How do pH sensors work, and what are the underlying principles of pH measurement?
6	What are flow sensors, and how do they operate to measure the rate or volume of fluid flow in pipelines and systems?
7	Illustrate with neat schematic diagram how the differential pressure sensors used to monitor airflow in HVAC systems and ensure optimal ventilation rates in commercial buildings?
8	Compare and illustrate the difference between electric, pneumatic, and hydraulic actuators used in HVAC control systems. Also list the factors for selection of actuators.
9	Describe the components of a typical feedback loop in HVAC control, including sensors, controllers, and actuators.
10	List and explain the three primary modes of heat transfer, and can you provide examples of each in HVAC applications?
11	Given a scenario, illustrate how you would use a specific instrument to measure heat transfer accurately.
12	With a neat block diagram explain how the temperature, humidity and pressure is controlled using feedback control loops.