



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL
(A constituent unit of MAHE, Manipal)

FOURTH SEMESTER BTECH. (E & C) DEGREE MAKE UP EXAMINATION JUNE 2022

SUBJECT: BASICS OF BUILDING AUTOMATION SYSTEMS (ECE -4301)

TIME: 3 HOURS

MAX. MARKS: 50

Instructions to candidates

- Answer **ALL** questions.
- Missing data may be suitably assumed.

Q. No.	Questions	M*	C*	A*	B*
1A.	With appropriate examples, explain the different Industries involved in design of smart building.	5			
1B.	Explain the basic features of an Intelligent building.	3			
1C.	How important is ESG rating, for a building?	2			
2A.	Explain the different layers of the ISO- OSI model.	5			
2B.	With appropriate diagrams, explain the operation of servomotor.	3			
2C.	Explain the working of Inductive Sensors.	2			
3A.	How can Machine learning contribute in developing occupant centric solutions for an Intelligent building.	5			
3B.	Explain the speciality of HVAC smart systems used in Burj Khaleefa, the tallest building	3			
3C.	What is reinforcement learning? How is it suited for design of smart building.	2			
4A.	Explain the reverse Rankine cycle with appropriate diagrams	5			
4B.	Explain the importance of a) occupancy sensor b) Dimmer				
4C.	Give any two design specialities of CII-Sohrabji Godrej Green Business Center (GBC).	2			
5A.	Explain any three specifications of a sensor, with relevant diagrams. Give comment on how it affects sensor performance.	5			
5B.	Briefly describe the impacts of COVID-19 in Building Automation Industry	3			
5C.	Discuss any one strategy to improve the efficiency of HVAC system	2			

M*--Marks, C*--CLO, A*--AHEP LO, B* Blooms Taxonomy Level