



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.TECH END SEMESTER EXAMINATIONS, May/June 2023

BASICS OF BUILDING AUTOMATION SYSTEMS [ECE 4301]

Marks: 50

Duration: 180 mins.

A

Answer all the questions.

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

- 1) How would you compare the OSI reference model and the TCP/IP model in terms of their benefits and drawbacks? (4)
 - A)
 - B) What are the key issues with respect to service-based approach for intelligent building? Explain. (3)
 - C) Explain the working of Inductive Sensors. (3)
- 2) Draw and explain the typical automobile control system with CANBUS applied. (4)
 - A)
 - B) What are some advantages of using standard protocols in building automation systems? (3)
 - C) With help of a block diagram, explain the working of a servo motor. (3)
- 3) Discuss the purpose of HVAC system and elaborate on the different components of the same. (5)
 - A)
 - B) Describe with a diagram the working of Ionization Smoke detector. (3)
 - C) Explain the functions of different types of card readers. (2)
- 4) How do Remote Terminal Units contribute to the functionality of a SCADA system, and what types of data do they typically collect and transmit? (5)
 - A)
 - B) Describe the technologies and options employed for energy-effective lighting control. (3)
 - C) What is hysteresis in the context of sensor measurements? (2)
- 5) Explain with a diagram, the working of a direct operated solenoid valve (4)

- A)
- B) Explain the following display types: Group, Trend and Summary. (3)
- C) What are the key benefits of green buildings? (3)

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