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School of University Polytechnic

Diploma in Electrical Engineering
Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem IV - N1DJ401B - Electrical Vehicles Controls and DrivesGeneral Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Explain the main types of electric motors. K2 (2)
- 2) Define BLDC motor. K1 (3)
- 3) Explain the differences between AC and DC motors. K2 (4)
- 4) Explain the purpose of a motor controller in an electric motor system. K2 (6)
- 5) Illustrate the advantages and disadvantages of BLDC motor in Evs. K3 (6)
- 6) Illustrate the importance of proper wiring and cable sizing in motor installations. K3 (9)
- 7) Compare and contrast the operating principles and applications of synchronous reluctance motors and permanent magnet synchronous motors. K4 (8)
- 8) Analyze the advantages and limitations of using a switched reluctance motor in high-speed applications compared to traditional motor types. K4 (12)

OR

Analyze the environmental sustainability of different controller solutions for electric vehicle conversions, considering aspects such as material sourcing, manufacturing processes, energy efficiency, and end-of-life disposal/recycling. K4 (12)