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220951

5th Sem/ Electrical
Subject : Electric Vehicle Technology

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)

Q.1 Which of the following is a key benefit of using Electric Vehicles (EVs)? (CO1)

a) Higher carbon emissions
b) Low operating costs
c) Limited range
d) High fuel prices

Q.2 Which battery type is predominantly used in modern electric vehicles? (CO4)

a) Zinc Chloride b) Lead Acid
c) Lithium-Ion d) Nickel-Cadmium

Q.3 Which of the following is a type of Electric Vehicle? (CO1)

a) Internal Combustion Engine Vehicle
b) Plug-in Hybrid Electric Vehicle
c) Gasoline Vehicle
d) Diesel Vehicle

Q.4 What is the main purpose of an Electric Vehicle Charger? (CO3)

a) To increase the vehicle's speed
b) To store energy in the battery
c) To control the vehicle's temperature
d) To recharge the battery

Q.5 What is an Electric Vehicle (EV)? (CO1)

a) A vehicle that runs on gasoline
b) A vehicle powered by electricity
c) A vehicle powered by hydrogen
d) A vehicle with a solar panel

Q.6 What is the primary purpose of a Battery Management System (BMS) (CO4)

a) To increase the speed of the vehicle
b) To monitor and manage battery performance
c) To recharge the battery faster
d) To enhance the cooling of the battery.

Section-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 What is one major regulatory policy affecting electric vehicles in India. (CO1)

Q.8 Charging Electric Vehicles using solar energy is known as _____ charging. (CO3)

Q.9 Name of advantage and one disadvantage of using Lithium-Ion batteries in EVs. (CO4)

Q.10 Describe the role of an inverter in an electric vehicle drive system. (CO2)

Q.11 Identify one significant difference in the operational mechanisms of Simple EVs versus Hybrid EVs.(CO5)

Q.12 What is the primary function of a regenerative braking system in an EV? (CO4)

Section-C

Note: Short answer type Question. Attempt any eight questions out of Ten Questions. (8x4=32)

Q.13 Describe the advantages of using Electric Vehicles over traditional vehicles. (CO2)

Q.14 Compare the advantages and disadvantages of Brushless DC motor and Switched Reluctance motors in electric vehicles. (CO2)

Q.15 Discuss the main components of an EV charge and their functions. (CO3)

Q.16 Analyze the construction and working of Lithium-Ion batteries, focusing on their advantages for electric vehicles. (CO4)

Q.17 Explain how safety precautions can mitigate risks associated with charging electric vehicles. (CO3)

Q.18 Describe the various types of Hybrid Electric Vehicles and how they differ in operation and efficiency.(CO5)

Q.19 What are the environmental benefits of using Electric Vehicles compared to traditional fossil fuel vehicles? (CO1)

Q.20 Discuss the challenges associated with implementing widespread EV charing infrastructure. (CO3)

Q.21 Explain the significance of battery cooling systems in prolonging the lifespan of EV batteries. (CO4)

Q.22 Describe the environmental benefits of Electric Vehicles. (CO1)

Section-D

Note: Long answer questions. Attempt any two question out of three Questions. (2x8=16)

Q.23 Describe the history and evolution of Electric Vehicles. How has the industry grown in recent years? (CO1)

Q.24 Explain the working principles and construction of any two types of motors used in Electric vehicles. (CO2)

Q25 Write a detailed note on different types of batteries used in Electric Vehicles and their respective advantages and disadvantages. (CO4)