**MODULE 1 – EV in Energy Transmission**

1.1 Technology Perspective of EV

Practice Problems

Question 1 Electric Vehicle (EV) is defined as any vehicle propelled by...

* An electric motor draining current from a rechargeable storage battery or from other portable energy storage devices.
* An electric motor and combustion engine.
* A combustion engine with an electric starter

Ans. A

Question 2 Electric cars have a lower total cost of ownership compared to ICE vehicles due to ...

* Lower maintenance costs.
* Lower taxes and government subsidy.
* Cheaper fuel (electricity).
* All the above are correct.

Ans. D

Emission Calculator Quiz

Question 1a Based on U.S. state average, what is the emissions (in pounds of CO2 equivalent) of a gasoline car and an all-electric vehicle?

* 6653 pounds for an all electric car, 10556 pounds for a gasoline car
* 4362 pounds for an all electric car, 11435 pounds for a gasoline car
* 3864 pounds for an all electric car, 8054 pounds for a gasoline car

Ans. B

Question 1b Now compare the values for a gasoline car and an all electric vehicle if you set the state to ‘Wyoming’, where 86% of electricity is produced from coal.

Based on national average, what is the emissions (in pounds of CO2 equivalent) of a gasoline car and an all-electric vehicle?

* 8631 pounds for an all-electric car, 11435 pounds for a gasoline car
* 4453 pounds for an all-electric car, 8582 pounds for a gasoline car
* 8582 pounds for an all-electric car, 13454 pounds for a gasoline car

Ans. A

Question 1c Now compare the values for a gasoline car and an all-electric vehicle if you set the state to ‘Vermont’, where only 0.12% of the electricity is produced from fossil fuels, namely oil and natural gas.

Based on national average, what is the emissions (in pounds of CO2 equivalent) of a gasoline car and an all-electric vehicle?

* 29 pounds for an all-electric car, 11435 pounds for a gasoline car
* 4585 pounds for an all-electric car, 11435 pounds for a gasoline car
* 8591 pounds for an all-electric car, 11435 pounds for a gasoline car

Ans. A

Fuel Economy Tool Quiz

Question 1a What is the combined MPG of the "2017 Honda Civic 4Dr, 2.0L, 4cyl, Automatic"?

* 24
* 34
* 44

Ans. B

Question 1b What is the combined MPGe of the "2017 Tesla Model S AWD - 75D"?

* 83
* 93
* 103

Ans. C

Question 1c By what factor is the electric car more efficient than the gasoline car, based on combined city/highway usage?

* 3
* 5
* 6

Ans. A

Question 1d Which car has a large range with a ‘full tank’ and by what factor?

* Civic 510 miles, Tesla 360 miles, Factor 1.4 more
* Tesla 422 miles, Civic 259 miles, Factor 1.6 more
* Civic 422 miles, Tesla 259 miles, Factor 1.6 more

Ans. C

Question 1e Finally, compare the costs you save in using a electric car based on fuel costs over five years in ‘You save or spend’. What is the 5 year fuel saving costs for both cars?

* Compared to the Honda Civic, the Tesla saves you around 2.5-3.5 times more in fuel costs over a period of 5 years
* Compared to the Honda Civic, the Tesla saves you around 4.5-5.5 times more in fuel costs over a period of 5 years
* Compared to the Honda Civic, the Tesla saves you around 7.5-8.5 times more in fuel costs over a period of 5 years

Ans. A