No. of Printed Pages : 2

BEY–004

BACHELOR OF SCIENCE (APPLIED SCIENCE–ENERGY) (BSCAEY)

Term-End Examination

June, 2025

BEY-004 : ZERO EMISSION VEHICLES

Time : 3 Hours *Maximum Marks : 70*

Note : *(i) Attempt any* ***seven*** *questions.*

(ii) All questions carry equal marks.

1. (a) What is power train ? Explain. 3

   (b) Discuss the need of zero emission vehicles in detail. 7

2. Discuss any *five* properties important for the selection of a fuel. 10

3. Describe the fuel induction techniques for hydrogen fueled engine. 10

4. Explain in brief the principles of power flow control in electric drive train. 10

Downloaded from www.IGNOUBABA.com

5. What are DC motor drives ? Discuss the advantages of DC motor drives in Electric Vehicles (EV) applications. 10

6. Describe Plug-in Hybrid Vehicles (PHEVs) with their relative advantages and limitations. 10

7. (a) Explain the working principle a fuel cell with a neat sketch. 5

   (b) Describe the working principle of battery swapping. Write down the advantages and challenges associated with this technology. 5

8. Discuss any *two* most promising innovations in battery technology for zero emission vehicles. 10

9. Write short notes on any *two* of the following : 5 each

   (a) Spark Ignition Engine

   (b) Oil burners

   (c) Layout and design of charging stations

   (d) Learning based energy management approach

× × × × ×

Downloaded from www.IGNOUBABA.com