Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 09

B.Voc. (Automobile Servicing) (Sem.–1)

MODERN ELECTRIC AND HYBRID VEHICLES

Subject Code : 5.GV.04

M.Code : 77016

Date of Examination : 17-01-2023

Time : 3 Hrs. **Max. Marks : 30**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.**
2. **SECTION-B contains FIVE questions carrying $2^1/_2$ (Two and Half) marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying FIVE marks each and students has to attempt any TWO questions.**

SECTION-A

l. Answer Briefly :

a. What are hybrid vehicles?

b. Write the advantages of Regenerative Breaking System (RBS).

c. What is the function of shock absorbers?

d. What is the role of power converters?

e. What is the function of vibration energy harvesters?

f. Define Generator.

g. Write the environmental importance of electric vehicles.

h. What do you understand by hybrid traction?

i. List the disadvantage of electric drive train topologies.

j. What are hydrocarbons?

SECTION-B

2. Explain the impact of modern Drive Trains on Energy Supplies.

3. Write about the one of the environmental unburned Hydro Carbons.

4. Discuss Sensor less Techniques of PMMC Machine.

5. List the basic requirement of electric motor in electric vehicles.

6. Explain how piezoelectric materials useful in regenerative breaking system?

SECTION-C

7. Explain the Series - Parallel Configurations of Electric Drive train with Neat Diagram.

8. Describe the basic principle of Super Capacitors based Energy Storage System in Hybrid Electric Vehicles.

9. Discuss the need, concept and working of Regenerative Breaking System (RBS).

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.