

### SECTION-B

**Note:** Short answer type questions. Attempt any six questions out of eight questions. (6x5=30)

- Q.11 Write the brief history of Electric Vehicles.
- Q.12 Explain any five requirements of electric motor for Hybrid electric vehicles.
- Q.13 Enlist the disadvantages of electric vehicle over IC engine vehicle.
- Q.14 Give a comparison of all electric vehicle with hybrid electric vehicle.
- Q.15 Explain Power flow control in hybrid electric drive train topology in brief.
- Q.16 Describe the procedure to extract energy from shock absorber.
- Q.17 Discuss the concept of Regenerative Braking using shock absorbers as vibration energy harvesters.
- Q.18 Explain the Social and environmental importance of Electric vehicles.

### SECTION-C

**Note:** Long answer type questions. Attempt any one questions out of two questions. (1x10=10)

- Q.19 Discuss the working of basic electric vehicle with the help of layout and describe the function of each component.
- Q.20 Explain advantages and disadvantages of Hybrid electric drive train topology in detail.

No. of Printed Pages : 2

Roll No. ....

188654

**Level 5 / 1st. Sem. / DVOC**

**Auto Servicing, AMT**

**Subject : Modern Electric and Hybrid Vehicles**

Time : 2 Hrs.

M.M. : 50

### SECTION-A

**Note:** Very short answer type questions. All questions are compulsory (10x1=10)

- Q.1 Give the main difference between electric and hybrid electric vehicle.
- Q.2 Name any two electric drive components used in Hybrid electric vehicles.
- Q.3 Tell the basic property of a Piezoelectric material.
- Q.4 Write any two requirements of electric motor for electric vehicles.
- Q.5 Tell any two manufactures of hybrid electric vehicles.
- Q.6 What are power converters?
- Q.7 The first commercial electric vehicle was launched by Toyota in the year \_\_\_\_\_. (Fill in the blanks)
- Q.8 A motor can also be used as a generator. (True/False)
- Q.9 What is the full form of HEV?
- Q.10 What is Regenerative Braking System?

(00) (2) 188654

(1) 188654