



PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain with neat sketch of engine emission control by three way catalytic controller. (10)
- (ii) Give the advantages of three-way catalytic converter. (6)

Or

- (b) (i) Explain the various components of engine. With neat sketch. (8)
- (ii) How cooling and lubrication system handled in diesel engine? (8)
12. (a) (i) What is the advantage of carburetor and explain working principle of electronic fuel injection system? (6)
- (ii) List out the working principle of multi point injection in Automobile with neat sketch. (10)

Or

- (b) (i) What is the use of lead acid battery? Give its advantages. (8)
- (ii) With a aid of neat sketch, explain the lighting system of a any light commercial vehicle. (8)
13. (a) (i) Explain the function of clutch. Draw any one type of clutch and explain in detail. (6)
- (ii) With neat sketch explain the working principle of fluid fly wheel. (10)

Or

- (b) Give the short notes on the following with a neat sketch.
- (i) Propeller shaft. (5)
- (ii) Slip joint. (5)
- (iii) Universal joint. (6)
14. (a) (i) Explain the various suspension systems available and discuss any one type. (8)
- (ii) What is the working principle of antilock braking system? Explain with neat sketch. (8)

Or

- (b) (i) What is meant by steering geometry and explain any one type of steering gear box. (8)
- (ii) Illustrate the following : (8)
- (1) Power steering
- (2) Types of front axle.

15. (a) Give the short notes on the following :

- (i) Bio diesel (5)
- (ii) L.P.G. (5)
- (iii) Electric vehicles. (6)

Or

- (b) (i) Explain fuel cell with a neat sketch. Give their disadvantages and advantages. (10)
- (ii) What is meant by hybrid vehicle? Give its merits. (6)