



12. (a) (i) What are the main functions of ECU? (4)  
(ii) Describe the construction details of distributor type Diesel fuel injection pump with sketch. (12)

Or

- (b) (i) What are the types of electronic ignition systems used in S.I. engine? (2)  
(ii) Draw and explain the circuit diagram of electronic ignition system using a magnetic pick-up method. (14)
13. (a) (i) What are the functions of the transmission system? (8)  
(ii) Sketch and explain the working method of fluid flywheel. (8)

Or

- (b) Describe the line diagram of Synchromesh unit and mention the component (spring with ball type system). (16)
14. (a) (i) What are the functions of steering system? (4)  
(ii) Discuss in detail working method of steering linkage system with suitable sketches. (12)

Or

- (b) (i) What are the requirements of a good braking system? (8)  
(ii) Explain the merits of independent suspension system. (8)
15. (a) What are the engine modification to be undertaken in the S.I. engine for Alcohols or Ethanol as alternate Fuel? (16)

Or

- (b) (i) What are the advantages of Hybrid electric vehicle? (8)  
(ii) Explain the construction and working of the PEM fuel cell with sketch. (8)