



12. a) Explain with a sketch the functioning of a capacitive discharge ignition system. List its merits over a transistorized coil ignition system.

(OR)

- b) With the help of an illustration, explain the working of a port fuel injection system in a SI engine. Mention its merits and demerits with regard to throttle body injection.

13. a) State the need for a clutch in an automobile. Describe the diaphragm operated clutch system with a sketch.

(OR)

- b) What is the function of a rear axle? Draw a schematic of a rear axle of a bus/truck.

14. a) Describe with an illustration the steering geometry and how it affects motion of an automobile. Mention the difference between manual and power assisted steering.

(OR)

- b) What is the need for a suspension system? Draw a schematic of a front suspension system, indicate the parts and their function.

15. a) Compare the performance and emission characteristics of a vehicle fuelled with Bio-ethanol with that of a neat gasoline fuelled vehicle.

(OR)

- b) Explain the necessary engine modifications for a CI engine to be fuelled with natural gas. Support your answer with its significance and how it affects the functioning of the engine.

PART - C

(1×15=15 Marks)

16. a) Discuss the working and salient features of the following with a neat sketches.

i) Hotchkiss drive. (7)

ii) Transfer box mechanism. (8)

(OR)

b) i) Explain the working principle, merits and demerits of a fuel cell with schematic diagrams. (10)

ii) Compare the merits of a pure electric vehicle over conventional automotive vehicle. (5)