

Questions

- (7.1) Three different approaches are used to obtain charge stratification viz., spray jet controlled, wall controlled and flow controlled. Discuss the differences in the duration of initial heat release rate (0 to 10%) and heat release rates towards the end of combustion (80 to 90%) with the three methods. What factors are responsible for these differences?
- (7.2) What type of emission control technologies may be employed to reduce HC and NO_x emissions in the DISC engines operating in the different air-fuel ratio regimes?
- (7.3) What are significant differences between CAI and HCCI engine systems from the point of mixture preparation and charge homogeneity?
- (7.4) What are main methods being studied to HCCI combustion in the diesel type engines? Discuss their merits and demerits.
- (7.5) Why is it not possible to build a practical engine to operate in HCCI mode in the whole speed and load range of a SI or CI engine?
- (7.6) Discuss why a HEV is more energy efficient than the vehicles powered by the conventional IC engine.
- (7.7) Discuss why a HEV is more energy efficient than the vehicles powered by the conventional IC engine.
- (7.9) Discuss why the energy efficiency of fuel cells at part loads is much higher than for the IC engines.