CHAPTER-4 Internal Combustion Engine

1. Basics and Air Standard Cycles

1. Compression ratio for diesel may have a range of :
(a) 8 to 10
(b) 16 to 20
(c) 10 to 15
(d) None of these [2008]

2. The two stroke cycle engine has :
(a) One suction value and one exhaust value operated by one cam
(b) One suction value and one exhaust value operated by two cams
(c) Only ports covered and uncovered by piston to effect charging and exhausting
(d) None of these [2008]

3. For the same compression ratio
(a) Otto cycle is more efficiency than the diesel cycle
(b) Diesel cycle is more efficient than the Otto cycle
(c) Both Otto and diesel cycles are equally efficient
(d) Compression ratio has nothing to do with efficiency
[2009]

4. Which of the following is not an internal combustion engine?
(a) 2 – stroke petrol engine
(b) 4 – stroke petrol engine
(c) Diesel engine
(d) Steam engine [2009]

5. Compression ratio of IC engines is :
(a) The ratio of volumes of air in cylinder before compression stroke and after compression stroke
(b) Volume displaced by piston per stroke and clearance volume in cylinder
(c) Ratio of pressure after compression and before compression
(d) Swept volume / cylinder volume
[2010]

6. Number of working strokes per minute for a two stroke cycle engine as compared to speed to the engine in rpm, is
(a) Half
(b) Double
(c) Same
(d) Four time [2011]

7. A compression ignition engine is a:
(a) Steam engine
(b) Diesel engine
(c) Steam turbine
(d) Petrol engine

8. The petrol engine works on:
(a) Joule cycle
(b) Rankine cycle
(c) Carnot cycle
(d) Otto cycle [2012]

9. Processes in thermodynamic cycles are :
I. isentropic
II. constant volume
III. constant pressure
IV. isothermal
Which process (es) is / are not involved in an air standard dual combustion cycle:
(a) II and III only
(b) I only
(c) IV only
(d) I and II only [2012]

10. A carnot engine uses nitrogen as the working fluid. The heat supplied is 53 kJ and adiabatic expansion ratio is 16:1. The receiver temperature is 295 K. The heat rejected in kJ is :
(a) 20.50
(b) 230
(c) 27.75
(d) 17.49 [2012]

11. For the same maximum pressure and peak temperature , which cycle will be most efficient-
(a) Diesel
(b) Dual combustion
(c) Otto
(d) None of the these [2013]

12. For a 4-stroke diesel engine, the compression ratio is 21 : 1 and the cut- off ratio is 2 : 1. What is its expansion ratio ?
(a) 7 : 1
(b) 10.5 : 1
(c) 12 : 1
(d) 19 : 1 [2014]