

Total No. of Questions : 12]

SEAT No. :

P756

[Total No. of Pages : 2

[4659] - 380

B.E. (Automobile) (Semester - I)

AUXILIARY ENGINE SYSTEMS

(2008 Pattern) (Elective - II (d))

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer any three questions from each section.*
- 2) *Answers to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*
- 5) *Assume suitable data, if necessary.*

SECTION - I

- Q1)** a) Explain Exhaust Gas Turbocharger along with it's applications. [8]
b) With the help of P - V graph, explain gas exchange process in case of 4 stroke engines. [8]

OR

- Q2)** a) What is the necessity of variable value timing? Explain it in brief. [8]
b) Explain in detail combination supercharging. [8]

- Q3)** a) Write a brief note on turbine used in turbocharging. [10]
b) Explain mechanical centrifugal supercharger and write its applications. [8]

OR

- Q4)** a) Write a note on Ram tube supercharging along with its working principle diagram. [8]
b) Explain Turbocharging and enlist advantages and disadvantages of mechanical turbocharging system. [10]

P.T.O.

- Q5) a)** What is the necessity of cooling the charge air? [8]
b) Differentiate between mechanical supercharger and exhaust supercharger. [8]

OR

- Q6) a)** Explain compressor power in terms of mean piston power. [8]
b) How the exhaust turbocharger affects the efficiency. [8]

SECTION - II

- Q7) a)** Explain in detail transient response. [8]
b) What are the effects of supercharging on exhaust emissions of Diesel and Petrol engines? [8]

OR

- Q8) a)** Explain the exhaust manifold arrangement for various firing sequences of engine. [8]
b) Explain advantages and disadvantages of constant pressure Vs pulse turbocharging. [8]

- Q9) a)** Write a note on Hyprex supercharger. [8]
b) Write a note on comprex supercharger. [8]

OR

- Q10) a)** Write a note on bearing system of exhaust gas turbocharger. [8]
b) Write brief discription about material used for turbine of the supercharger. [8]

- Q11) a)** What is mean by EGR? Explain in detail with neat sketch. [8]
b) Enlist the engine cooling system and explain any one in detail. [10]

OR

- Q12) a)** Explain in brief engine coolants. [8]
b) What is cooling Module Technology? Explain in detail. [10]

