

Total No. of Questions : 10]

SEAT No. :

P3549

[Total No. of Pages : 2

[4959] - 1234

B.E. (Automobile)

ALTERNATIVE FUELS AND EMISSION CONTROL

(2012 Pattern) (Semester-II)

Time : 2 1/2 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Use of logarithmic tables, slide rule, electronic pocket calculator is allowed.*

Q1) a) How are SI and CI engine fuels rated? **[4]**

b) Discuss important qualities of SI and CI engine fuel. **[6]**

OR

Q2) a) Write the calorific value & general chemical formula of following fuels. (any 3) **[6]**

i) Petrol

ii) Diesel

iii) LPG

iv) CNG

v) BIO GAS

b) Write a note on biogas as a fuel for IC engine. **[4]**

Q3) a) Explain the properties of hydrogen fuel & give its advantages over conventional fuels. **[4]**

b) Explain any two synthetic fuels with its properties, advantages, disadvantages & handling. **[6]**

OR

Q4) a) Write note on alcohol as fuel for IC engine. **[4]**

b) What are the different synthetic fuels used in IC engines? Explain its effect on engine performance. **[6]**

P.T.O.

- Q5)** a) What is the effect of compression ratio on SI engine emission? [8]
b) What is positive crankcase ventilation? Explain. [8]

OR

- Q6)** a) How will you reduce the NO_x emission in IC engine? [6]
b) Explain effect of design and operating parameters on SI engine emission. [10]

Q7) Explain effect of design and operating parameters on CI engine emission. [16]

OR

- Q8)** a) Why turbocharger is used in automobile engines, explain effects of turbocharging on emission? [8]
b) Describe the sources and causes of soot and particulet formation? [8]

Q9) Write a note on.

- a) Effect of NO_x emission on human as well as on environment. [6]
b) Indian emission norms. [6]
c) Ambient air quality monitoring. [6]

OR

- Q10)** a) List the negative effects of CO emission on human health, what is treatment to CO intoxication person? [9]
b) Explain the remedies for engine emission. [9]

