

2008 AMARAVATI UNIVERSITY
B.TECH II SEMESTER REGULAR EXAMINATIONS
CHEMISTRY -II
(AUTOMOBILE ENGINEERING)

NOVE 2007

TIME : 3 HOUR
MARK : 100

ANSWER ALL QUESTIONS

PART A — (10 × 2 = 20 marks)

1. State the phase rule and explain the various terms involved.
2. What is an eutectic system? Give an example and its use.
3. Give the classification of fuels.
4. What is cetane number? What is its significance?
5. Classify the refractories giving one example for each class.
6. Define flash point and fire point with reference to lubricants.
7. Explain the terms BOD and COD and their significance.
8. What is ozone layer? How is it depleted? What is the harmful effect of the depletion of ozone layer?
9. What are the components of a dry cell? What are their functions?
10. Explain the term green house effect.

PART B — (5 × 16 = 80 marks)

11. (i) How is water gas produced? Give its composition, fuel value and uses.
(ii) What are abrasives? Give their classification and one example for each class. How is carborundum prepared?
12. (a) Give a detailed account on the proximate analysis of coal and its importance.
Or
(b) Write in detail the various steps involved in the refining of crude petroleum. Give a list of the fractions obtained and their uses.
13. (a) Discuss in detail the iron-carbon phase diagram.
Or
(b) What is powder metallurgy? Give an account on the various processing steps.
14. (a) Write notes on :
(i) Acid rain and its harmful effects
(ii) Particulates causing air pollution and their effects.
Or
(b) Discuss in detail the primary and secondary treatment of domestic sewage.
15. (a) (i) Give an account of the construction of lead acid battery and the chemistry of discharging and charging cycles.
(ii) Write a note on solid lubricants.
Or
(b) Write notes on (i) Properties of refractories. (ii) Requirements of an explosive.