



6. (a) What are the qualities of a good fuel ?
(b) What are synthetic fuels ? Give one example.
7. (a) Give any two differences between addition polymerization and condensation polymerization.
(b) Define polymerization. (5 × 6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) State Pauli's exclusion principle. Calculate the de-Broglie wave length for an electron moving with a velocity of 10^3 m s^{-1} ($h=6.625 \times 10^{-34} \text{ Kg m}^2\text{s}^{-1}$, $m=9.1 \times 10^{-31}\text{Kg}$) 6
(b) State octet rule. Explain the bond formation in NaCl. 5
(c) What is a co-ordinate bond ? Give two examples. 4

OR

- IV (a) State Heisenberg's uncertainty principle. Calculate the uncertainty in the velocity of an electron, if the uncertainty in position is 10^{-10}m .
($h = 6.625 \times 10^{-34} \text{ Kg m}^2 \text{ s}^{-1}$, $m_e = 9.1 \times 10^{-31}\text{Kg}$) 6
(b) How is a covalent bond formed ? Give three examples. 5
(c) Differentiate between orbit and orbital. 4

UNIT — II

- V (a) Explain the process of electrolysis by taking molten NaCl as an example. 6
(b) What is a salt bridge ? Give the functions of salt bridge. 5
(c) What are secondary cells ? Give two examples. 4

OR

- VI (a) What are the factors that influence rate of corrosion ? Explain. 6
(b) What is electrochemical theory of corrosion ? 5
(c) How is corrosion prevented by cathodic protection method ? Explain. 4

UNIT — III

- VII (a) Distinguish between Thermoplastics and Thermosetting plastics. 6
(b) What are refractories ? Give their functions. 5
(c) Mention four characteristics of refractories. 4

OR



| | Marks |
|--|-------|
| VIII (a) Define vulcanization ? Give any four properties of vulcanized rubber. | 6 |
| (b) What is optical fibre ? Give three uses of it. | 5 |
| (c) Explain homo polymer and co-polymer with one example for each. | 4 |

UNIT — IV

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| IX (a) Compare solid, liquid and gaseous fuels. | 6 |
| (b) Define pollutant. Explain the major sources of water pollution. | 5 |
| (c) What are primary fuels ? Give two examples. | 4 |

OR

| | |
|--|----------------|
| X (a) What do you understand by Green house effect ? What are its consequences ? Mention two ways to reduce it. | 6 |
| (b) Give the major components present in the following fuels. | |
| (i) L P G | (iv) Water gas |
| (ii) Producer gas | (v) CNG |
| (iii) Natural gas | 5 |
| (c) Write a short note on ozone layer depletion. | 4 |
