Total No. of printed pages = 5

Sc-203/Ch-2/2nd Sem/2013/N

CHEMISTRY – II

Full Marks – 70

Pass Marks – 21

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No.1 and any *six* from the rest.

1. (a) Fill in the blanks : 1×5=5

(i) Grease is a ——— lubricant.

(ii) Polyethene is a polymer of ———.

(iii) Producer gas is a mixture of CO and ———.

(iv) A mineral used in the extraction of metal is called ———.

(v) Organic gas used in welding is ———.

[Turn over

(b) Write down the true and false statements out of the following : 1×5=5

(i) Natural rubber is a polymer of isoprene.

(ii) Brass is an alloy of Cu and Sn.

(iii) Heavy oil is cracked for the production of diesel.

(iv) In grey cast iron, carbon present mostly in graphite form.

(v) Earth is protected from UV–radiations by oxygen layer.

2. (a) What are the different types of fuels ? What are the characteristics of a good fuel ? 2+3=5

(b) Write down the process of refining of petroleum. 3

(c) What is the difference between gross calorific value and net calorific value of fuel ? 2

3. (a) Define ore, flux and gangue. 3

(b) Write down the percentage composition and uses of the following alloys. (any *two*) : 2+2=4

Stainless steel , Bell metal, Bronze, Brass.

(c) Distinguish between carbon reduction and self reduction process. 3

4. (a) What are the raw materials necessary for the manufacture of Portland cement ? 2

(b) Describe the wet process for manufacture of Portland cement. 5

(c) What is setting and hardening of cement ? 3

5. (a) What is polymerisation ? Differentiate between addition and condensation polymerisation. 1+4=5

(b) How are corrosion prevented by treatment of metal ? 5

6. (a) What do you mean by lubricant and lubrication ? Why lubricant is essential for moving parts under friction ? 2+3=5

(b) Write down the formation and uses of the following plastics : 2½×2=5

(i) Polystyrene

(ii) Bakelite

7. (a) Write down the general formula of homologus series of alkene, alkyne and monocarboxylic acid. 3

(b) Write the cis-trans isomer of

$CH_3–CH = CH–CH_3$ 2

(c) Give structural formula of the following compounds : $1\times5=5$

(i) 3,5 – dimethyl hexane

(ii) But – 2 – ene

(iii) 2, 2, 4–trimethyl pentane

(iv) 3–Methyl pentyne–I

(v) 2, 4 – Dimethyl – 3 – hexene

8. (a) How acetylene is prepared in the laboratory ? What is the polymerisation product of acetylene ? $4+1=5$

(b) Write down the possible isomers of C_2H_6O. 3

(c) What do you mean by substitution reaction ? Give one example. $1+1=2$

9. Write short notes on any *four* : $2\frac{1}{2} \times 4 = 10$

(i) Octane number

(ii) L. P. G.

(iii) Functional isomerism

(iv) Froth floatation process

(v) Carbonisation of coal

(vi) Acid rain.