Total No. of printed pages = 5

Sc-203/Chem-II/2nd Sem/2016/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 : 5×1=5

(i) The value of B.O.D is ——— than that of C.O.D.

(ii) CaO is an example of ——— flux.

(iii) ——— make the cement quick setting.

(iv) Full form of C.N.G is ———.

(v) ——— is an example of solid lubricant.

[Turn over

(b) Choose the correct answers : 1×5=5

(i) Backelite is an example of thermo-plastic / thermosetting polymer.

(ii) Natural rubber is a polymer of isoprene / ethylene / acetylene.

(iii) An isomeric structure of dimethyl ether is ethyl alcohol / propyl alcohol.

(iv) Galvanization is a process of coating iron article with zinc / lead / tin.

(v) Most used vulcanizing agent is sulphur / nitrogen / oxygen.

2. (a) What is meant by pollution ? Name four important causes of pollution. 2+2=4

(b) Suggest three measures for controlling water pollution. 3

(c) What is greenhouse effect ? 2

(d) Give one example of particulate pollutant. 1

3. (a) Why is roasting or calcination necessary in metallurgy ? 2

(b) Neatly draw the diagram of blast furnace and label the chemical reactions that take place in manufacturing cast iron. 5

(c) Compare open-hearth process and Bessemer process for manufacturing steel. 3

4. (a) Give the average composition of Portland cement. 3

(b) Describe how Portland cement is manufactured by wet process. 4

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

5. (a) Mention the important characteristics of a good fuel. 3

(b) Differentiate between high temperature carbonisation (H.T.C) and low temperature carbonisation (L.T.C). 3

(c) What is gross calorific value and net calorific value ? 2

(d) Define flash point and fire point of a fuel. 2

6. (a) Classify the lubricant on the basis of their physical state with example. 3

(b) Name three properties which are to be considered while selecting a lubricant. 3

(c) Give the mechanism of rusting of iron on the basis of electro-chemical theory. 3

(d) What is galvanic corrosion ? 1

7. (a) Differentiate between addition polymerisation and condensation polymerisation with suitable example. 3

(b) State the monomers used for making the following polymers : $1 \times 3 = 3$

(i) Terylene

(ii) Bakelite

(iii) Teflon

(c) What is homologous series ? Write its characteristics. 3

(d) Define catenation. 1

2.

8. (a) Write the structural formula of the following compounds : 2

(i) 3 ethyl, 4 methyl, hex 2 ene

(ii) 1, 3 butadiene.

(b) Give the IUPAC names of the following compounds : $1\times3=3$

(i) CH_3CHO

(ii) $CH_2(OH)-CH(OH)-CH_2(OH)$

(iii) $CH_3-CH(OH)-CH_2-CH_2-COOH$

(c) Write down the cis-trans isomerism of 2- butene. 2

(d) How methane is prepared in the laboratory ? 2

(e) What is aromatic hydrocarbon ? 1