

Total No. of printed pages = 5

Sc-203/Chem-II/2nd Sem/M/2013

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 *five* from the rest.

1. (a) Fill in the blanks : 1×10=10
- (i) Full form of the term BOD is _____.
 - (ii) Limestone is an example of _____ flux.
 - (iii) L. D. process is the modification of _____ process of manufacture of steel.
 - (iv) _____ temperature carbonization coke is used in the metallurgy.
 - (v) The name of the best quality of coal is _____.
 - (vi) Lubricating _____ is used in metal cutting.

[Turn over

(vii) Rust is a mixture of Fe_2O_3 and ———.

(viii) The full form of PVC is ———.

(ix) D (+) glucose is an example of ——— isomerism.

(x) Grease is an example of ——— lubricant.

(b) Choose the correct answers : $1 \times 10 = 10$

(i) Gypsum is used in the manufacture of iron / cement.

(ii) Iron is extracted from iron pyrites / haematite ore.

(iii) Water gas is a mixture of $\text{CO} + \text{N}_2$ / $\text{CO} + \text{H}_2$.

(iv) Phenol is a derivative of acetylene / benzene.

(v) The chain reaction between CH_4 and Cl_2 in defused sunlight can be explained by the mechanism — carbanion / free radical.

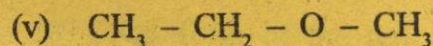
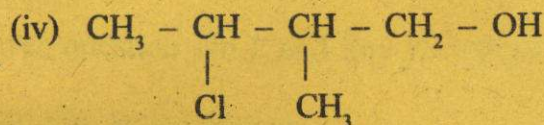
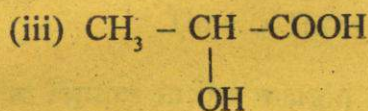
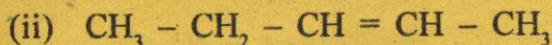
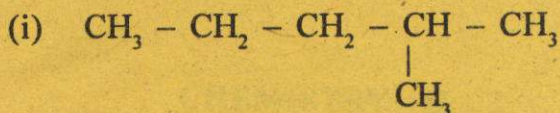
(vi) The stereo-isomerism occurs in $\text{CH}_3-\text{CH}=\text{CH}-\text{CH}_3$ is the type of cis-trans / position isomerism.

- (vii) Bakelite is an example of thermoplastic / thermosetting plastic.
- (viii) The chemical added during the extraction of metal to remove the impurities is called slag / flux.
- (ix) Talc is an example of solid / liquid lubricant.
- (x) The general formula of alkanes is $C_n H_{2n+2}$ / $C_n H_{2n}$.
2. (a) Write what you know about greenhouse effect. 5
- (b) How can you test for sewage contact in a sample of water ? 3
- (c) Define BOD. 2
3. (a) Write the reactions in the blast furnace in the manufacture of cast iron. 5
- (b) What are the advantages of open hearth process over Bessemer process ? 5
4. (a) Give the classification of coal by rank. 3
- (b) Write the different fractions of refining of petroleum with uses. 4
- (c) What is octane number ? 3

5. (a) Write about different types of lubricants with examples. 5
- (b) Explain the rusting of iron by theories. 5
6. (a) Give the classification of isomerism with examples. 5
- (b) Classify the polymers with examples. 4
- (c) Give an example of elimination reaction. 1
7. Distinguish between : $2 \times 5 = 10$
- (a) Thermoplastic and thermo-setting plastics
- (b) Calcination and roasting.
- (c) LTC and HTC.
- (d) Water gas and producer gas.
- (e) Addition and condensation polymerisation.
8. Write short notes on any *two* : $2 \times 5 = 10$
- (a) Colorific value
- (b) Lubricating emulsion
- (c) Polystyrene.

9. (a) Write IUPAC name of the following :

1×5=5



(b) Write the isomers of Heptane with structural formula and IUPAC name. 5.