

SECTION – II

Q.3 Attempt ANY THREE of the following: [15]

- a) Write the composition of steel alloy. Discuss the quantitative method for estimation of *cobalt* from the given sample of steel.
- b) What is ore? Write the major and minor constituents of Ilmenite ore. Explain the analytical method for estimation of *Manganese* from the given sample of Ilmenite ore.
- c) Give an account of estimation of *Phosphorus* from given fertilizer sample.
- d) What do you mean by Bronze alloy? Discuss the analytical method of estimation of *Lead* from given Bronze alloy sample.
- e) Give the composition of Monazite sand. Write the experimental procedure for the estimation of *Titanium* from monazite sand sample

Q.4 A) Attempt ANY TWO of the following: [10]

- a) Discuss the quantitative method of determination of *Vanadium* from the given sample of steel.
- b) Give the composition of Portland cement. Explain the analytical procedure for the estimation of *Magnesium* from Portland cement.
- c) What is Chalcopyrite ore? Give an account of estimation of *zinc* from the given sample of chalcopyrite ore.

B) Solve ANY ONE of the following: [05]

- a) In the analysis of zinc from Bronze alloy, 0.450 gm sample was analysed. The weight of $Zn_2P_2O_7$ residue obtained was 0.090 gm. Calculate the % Zn in the given Bronze sample.
- b) 0.530 gm of a fertilizer sample containing phosphorus as $Ca_3(PO_4)_2$ was determined gravimetrically by using molybdate method when the weight of residue obtained was 0.120 gm. Calculate the % Phosphorus in the given fertilizer sample.

[Given Atomic weight : O = 16, P = 31, Ca = 40, Mo = 96]

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