

**GURUDAS COLLEGE**  
**CHEMISTRY — GENERAL — PRACTICAL**  
**2021**

**Subject-CEMG, SEM-V**

**Paper- DSE-A-2P**

**(Inorganic Materials of Industrial Importance)**

**Time: 2 Hrs**

**Full Marks: 30**

*The figures in the margin indicate full marks.*

1. For the estimation of the quantity of  $\text{CaCO}_3$  and  $\text{MgCO}_3$  present separately in a given dolomite sample in g :

(a) Write down the principle of dissolution and estimation mentioning all the equations involved and derive the working formula. 10

(b) Using the following data calculate the strength of  $\sim(\text{M}/50)$  EDTA solution :

(i) 1.0874 g of Zn-acetate dihydrate has been accurately weighed transferred to a 250 mL volumetric flask and volume is made up with distilled water in presence of  $\text{NH}_4\text{Cl}$ .

(ii) Standardization of  $\sim(\text{M}/50)$  EDTA by standard Zn-acetate  $2\frac{1}{2}+2\frac{1}{2}$

| No. of Titrations | Volume of Std. Zn-acetate taken (mL) | Burette Reading of EDTA soln (mL) |       |            |                 |
|-------------------|--------------------------------------|-----------------------------------|-------|------------|-----------------|
|                   |                                      | Initial                           | Final | Difference | Average reading |
| 1.                | 25                                   | 0                                 | 26.5  | 26.5       | 26.5            |
| 2.                | 25                                   | 0                                 | 26.4  | 26.4       |                 |
| 3.                | 25                                   | 0                                 | 26.6  | 26.6       |                 |

(c) 0.7680 g of the Dolomite sample has been weighed accurately and after dissolution step, the volume is made up to 250 mL in a volumetric flask.

Using the above data, calculate separately the amount of  $\text{CaCO}_3$  and  $\text{MgCO}_3$  present in the given Dolomite sample in g by using the following specimen results. 5+5

(i) Table for estimation of  $\text{Ca}^{\text{II}}$  and  $\text{Mg}^{\text{II}}$  :

| No. of Titrations | Volume of Stock solution taken (mL) | Burette Reading of EDTA soln (mL) |       |            |                 |
|-------------------|-------------------------------------|-----------------------------------|-------|------------|-----------------|
|                   |                                     | Initial                           | Final | Difference | Average reading |
| 1.                | 25                                  | 0                                 | 35.7  | 35.7       | 35.7            |
| 2.                | 25                                  | 0                                 | 35.6  | 35.6       |                 |
| 3.                | 25                                  | 0                                 | 35.7  | 35.7       |                 |

(ii) Table for estimation of  $\text{Ca}^{\text{II}}$ :

| No. of Titrations | Volume of Stock solution taken (mL) | Burette Reading of EDTA soln (mL) |       |            |                 |
|-------------------|-------------------------------------|-----------------------------------|-------|------------|-----------------|
|                   |                                     | Initial                           | Final | Difference | Average reading |
| 1.                | 25                                  | 0                                 | 18.5  | 18.5       | 18.4            |
| 2.                | 25                                  | 0                                 | 18.4  | 18.4       |                 |
| 3.                | 25                                  | 0                                 | 18.3  | 18.3       |                 |

2. Laboratory Note Book.

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