

Part D

$$n(\text{CO}_2) = n(\text{C}) = \frac{3.506}{44.01} = 0.07966 \text{ mole}$$

$$m(\text{C}) = 0.956 \text{ out of } 1.25 \text{ g}$$

$$\%(\text{C}) = 76.54 \%$$

by mass

$$n(\text{H}) = 2 \times n(\text{H}_2\text{O}) = 2 \times \frac{0.9596}{18.016} = 0.1065 \text{ mole}$$

$$m(\text{H}) = 0.1074 \text{ g}$$

$$m(\text{O}) = 0.885 - (0.1074 + (0.7654 \times 0.885))$$

$$m(\text{O}) = 0.1002 \text{ g} \quad \therefore n(\text{O}) = 0.006264 \text{ mole}$$

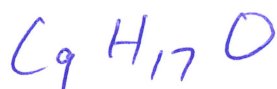
$$n(\text{C}) = \frac{(0.7654 \times 0.885)}{12.01} = 0.0564 \text{ mole}$$

$$\text{C} : \text{H} : \text{O}$$

$$\frac{0.0564}{0.006264} : \frac{0.1065}{0.006264} : \frac{0.006264}{0.006264}$$

$$9 : 17 : 1$$

EF



$$\text{EM} = 141.226$$

$$\text{MF} = \frac{\text{MM}}{\text{EM}} = \times 2 \quad \therefore \text{MF} = \underline{\text{C}_{18} \text{H}_{34} \text{O}_2}$$