**Questions**

1. Explain in your own words why accurate pharmaceutical calculations are considered essential for patient safety and therapeutic efficacy. Provide at least two distinct reasons.
2. A prescription is written for 375 mg of a medication. The pharmacy stocks tablets of the same medication in strengths of 125 mg and 250 mg.
3. How many 125 mg tablets are needed to fulfil the prescription? Show your calculation.
4. How many 250 mg tablets are needed to fulfil the prescription? Show your calculation.
5. Discuss whether splitting the 250 mg tablet would be an appropriate option in this scenario and why or why not?
6. A child weighing 18 kg requires a medication at a dose of 7.5 mg/kg per day, to be administered twice daily. The available syrup has a concentration of 40 mg per 5 mL. Calculate the volume of syrup needed for each dose. Show your steps.
7. A vial of cefazolin powder for injection contains 1 gram. The reconstitution instructions state to add 4 mL of sterile water to yield a concentration of 225 mg/mL. Verify if this stated concentration is accurate by performing the calculation.
8. Briefly explain the importance of accurate calculations in the manufacturing or compounding of pharmaceutical products.
9. What is the formula used to calculate the number of tablets needed when the prescribed dose differs from the available tablet strength?
10. Briefly describe one area of pharmaceutical calculations beyond basic dosage adjustments (like percentage strength or dilution) that is important for healthcare professionals to understand.