29. 1 litre of a molar solution contains 1 mole of sodium chloride per litre. Therefore, there are 58.44 g of sodium chloride per litre. **Answer**: e (58.44 g)

30. 1 mole of sodium bicarbonate contains 84 g. Therefore, 1 mmol contains 0.084 g (84 mg) sodium bicarbonate. Therefore, 0.5 mmol contains 42 mg. Therefore 150 ml of a 0.5 mmol/ml solution contains 150 × 42 = 6300 mg (6.3 g). **Answer**: c (6.3 g)

31. 1 mole of Sodium Chloride BP contains 58.44 g. Therefore, 1 mmol contains 0.05844 g (58.44 mg). Therefore, 2 mmol contains 116.88 mg. Therefore, 100 ml of a 2 mmol/ml solution contains 116.88 × 100 = 11688 g (11.688 mg). **Answer**: c (11.69 g)

32. 1 mole of Sodium Bicarbonate BP contains 84 g. Therefore, 1 mmol contains 0.084 g (84 mg) Sodium Bicarbonate BP. Therefore 75 ml of a 1 mmol/ml solution contains 75 × 84 = 6300 mg (6.3 g). **Answer**: c (6.3 g)

33. Sodium Bicarbonate Solution 0.5 mmol/ml

1. Used to treat chronic acidotic states (*British National Formulary* 51st edn, p 477).
2. This patient has been recently discharged from hospital and the hospital states that the recommended dose for a child 1 month–2 years is 1–2 mmol/kg daily in 1–2 divided doses. In order to confirm the dose on the prescription is safe and suitable, the weight of the child would be required. The parent would be able to provide this information: this would be more accurate than the average weight listed in the *British National Formulary*. In this case the child weighs 5 kg, therefore the dose that would be safe is 5–10 mmol daily in divided doses and the amount ordered on the prescription concurs with this.
3. In order to prepare the product formula, we need to consider the molecular weight of Sodium Bicarbonate BP, which is 84.

   1 mol Sodium Bicarbonate BP = 84 g
   1 mol = 1000 mmol = 84 g
   200 ml of a 0.5 mmol solution is required
   Therefore 200 × 0.5 mmol required = 100 mmol
   100 mmol = 84/1000 × 100 = 8.4 g Sodium Bicarbonate BP

	Master	**200 ml**
Sodium Bicarbonate BP	4.2 g	8.4 g
Freshly boiled and cooled purified water	to 100 ml	to 200 ml

4.

a. Sodium Bicarbonate BP in soluble 1 in 11 in water. Therefore to dissolve 8.4 g Sodium Bicarbonate BP a minimum of 8.4 × 11 = 92.4 ml of water would be required.
b. Freshly boiled and cooled purified water would be used as the solution is intended to be administered to a baby with renal problems.
c. None added.
d. Not appropriate.