**Intra-group transactions - Suggested solutions**

**PART A: Intra-group transactions that affect profits**

**Question 1:**

**Required 1a:**

The machine will be depreciated at a rate of 10% per annum.

The rule is that the asset must be depreciated in a manner that reflects the way it would be used up. So it is irrelevant that the Parent company has a different depreciation rate or that the parent was depreciating the asset at a rate of 20%. The subsidiary company is now in control of the asset and the depreciate rate that it uses will apply.

**Required 1b:**

All profit or loss made on the sale of a depreciable asset would remain ‘unrealised’ until

- the asset is sold to a party external to the group and
- through annual depreciation of the asset.

On 1 January 20X4, all the profit or loss would be unrealised.

| Sale price | 60,000 |
| Carrying amount | 50,000 |
| Unrealised profit | 10,000 |

**Required 1c:**

On 31 December 20X4, one year of depreciation would be recognised. Hence this would be ‘realised’.

Unrealised profit 1 Jan 20X4 10,000

Less: depreciation in 20X4 (1,000) [10,000 X 10%]

Unrealised profit 31 Dec 20X4 9,000

**Required 1d:**

Cost 60,000

Less: Depreciation in 20X4 (6,000) [60,000 x 10%]

Carrying amount 31 Dec 20X4 54,000

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Required 1e:
Carrying amount for group 50,000
Less: Depreciation in 20X4 (5,000) [50,000 x 10%]
Carrying amount 31 Dec 20X4 45,000

Required 1f:
Elimination of profit on sale (10,000)
Realisation of profit through dep 1,000
Decrease of profit (9,000)
Tax (9,000 x 30%) 2,700
Net effect on profit (6,300)

Question 2:
Required 2a:
DR Profit on sale of truck (I/s) 10,000 N1
CR Vehicles (B/s) 10,000 N2
DR Accumulated dep (B/s) 1,000 N2
CR Depreciation (I/s) 1,000 N2
DR Deferred tax asset (B/s) 2,700 N3
CR Tax expense (I/s) 2,700 N3

N1: eliminate the transaction
DR profit on sale 10,000

N2: Account for the unrealised and realised portions
CR equipment 10,000 (it is recorded at 40,000 when it should be 30,000 i.e. the cost for the group)

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The entire 10,000 above is an unrealised profit. The only realised amounts would be through depreciation (or if it was sold to parties external to the group which did not happen in this case).

Depreciation in terms of the group is 3,000 (30,000 x 10%)
Depreciation recorded by Zebra Ltd is 4,000 (40,000 x 10%)
Thus, there is an over depreciation of 1,000

OR

Alternative calculation: 10,000 unrealised profit x 10% depreciation that now gets realised in 20X4 = 1,000

So, the journals in 20X4 would be:

CR Depreciation expense 1,000 (we credit to reduce an expense) when you reduce an expense you increase profits
DR Accumulated dep 1,000 (Accumulated dep is the opposite account for depreciation)

N3: Consider Tax for 20X4

The net effect on profits is a debit of 9,000 (10,000 debit – 1,000 credit).
Thus income tax would be a credit to reduce tax expense.

CR Income tax expense 2,700 (9,000 x 30%)

The net effect on Assets is a credit of 9,000 (10,000 credit – 1,000 debit) This causes CA < TB and so gives rises to a DTA

DR DTA 2,700 (9,000 x 30%)

Required 2b:

DR Retained earnings 6,300 N1
CR Vehicles (B/s) 10,000 N2
DR Accumulated dep (B/s) 2,000 N3
CR Depreciation (I/s) 1,000 N3
DR Tax expense (I/s) 300 N4
DR Deferred tax asset (B/s) 2,400 N4

N1: To carry forward the effects on profits from 20X4 to 20X5, we need to make an adjustment to Retained earning o/b

Total effect is 6,300 (10,000 dr – 1,000 cr – 2,700 cr)
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**N2:** Assets are carried at cost. In 20X5, the cost of the delivery truck will still be carried at its cost of 40,000. However, the cost of the truck for the group is 30,000. Thus we will need to adjust this by reducing the cost of the truck by 10,000.

So the journal is:

CR Vehicles 10,000

**N3:** We need to realise profits through depreciation in 20X5 which is calculated in the same way as Required 2b (N2).

CR Depreciation 1,000
DR Accumulated dep 2,000 (remember that accumulated dep has to carry forward the depreciation from 20X4 + the depreciation from 20X5. (1,000 + 1,000))

**N4:** The effect on profit is a credit of 1,000 (depreciation). So the journal is to increase tax because the profits increased

DR Tax expense 300 (1,000 x 30%)

The net effect on assets is a credit of 8,000 (10,000 cr – 2,000 dr). The causes CA < TB = DTA

Dr Deferred tax asset 2,400 (8,000 x 30%)

**Question 3:**

**Required 3a:**

DR Profit on sale of plant (I/s) 250,000 (600,000 selling price – 350,000 carrying amount)

CR Plant (B/s) 250,000

CR Accumulated dep (B/s) 25,000

CR Depreciation (I/s) 25,000 (60,000 dep by Town Ltd – 35,000 dep by the group)

DR Deferred tax asset (B/s) 67,500

CR Tax expense (I/s) 67,500 ([250,000 – 25,000] x 30%)

**Required 3b:**

DR Retained earnings 157,500 (250,000 dr – 25,000 cr – 67,500 cr)

CR Plant (B/s) 250,000

CR Accumulated dep (B/s) 50,000 (25,000 depreciation for 2 years)

CR Depreciation (I/s) 25,000

DR Tax expense (I/s) 7,500 (25,000 x 30%)

DR Deferred tax asset (B/s) 60,000 ([250,000 cr – 50,000 dr] x 30%)

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Question 4:

Required 4a:
When inventory is sold within the group, all the profit or loss would be unrealised until it is sold to parties external to the group.

DR Sales 8,000
CR COGS 6,000
CR Inventory 2,000 (all the profit on intra-group sale of inventory would be unrealised so needs to be eliminated from the cost of the inventory)
DR Deferred tax asset 600 (CA < TB = DTA)
CR Tax expense 600 [(8,000 dr – 6,000 cr) x 30%]

Required 4b:
When inventory is sold within the group, all the profit or loss would be unrealised until it is sold to parties external to the group.

DR Sales 8,000
CR COGS 6,000
CR Inventory 1,000 (2,000 x 50% which was sold and thus realised)
CR COGS 1,000 (realising profit from intra-group sale of inventory)
DR Deferred tax asset 300 (CA < TB = DTA)
CR Tax expense 300 (1,000 x 30%)

NOTE: The journals for COGS can be combined to reflect the net effect. So the combined journals would be as follows:

DR Sales 8,000
CR COGS 7,000 (6,000 + 1,000)
CR Inventory 1,000
DR Deferred tax asset 300
CR Tax expense 300
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**Required 4c:**

DR Retained earnings 700  (carry forward effects of 20X4 profit. (8,000 dr – 7,000 cr – 300 cr)
CR COGS 1,000 (realising profit from intra-group sale of inventory)
DR Tax expense 300  (1,000 x 30%)

**Question 5:**

**Required 5a:**

DR Sales 20,000
CR COGS 15,000
CR Inventory 5,000 (all the profit on intra-group sale of inventory would be unrealised so needs to be eliminated from the cost of the inventory)
DR Deferred tax asset 1,500
CR Tax expense 1,500  ([(20,000 dr – 15,000 cr) x 30%]

**Required 5b:**

When inventory is sold within the group, all the profit or loss would be unrealised until it is sold to parties external to the group.

DR Sales 20,000
CR COGS 15,000
CR Inventory 1,250 (unrealised profit that is included in the cost of the inventory is 5,000. If 75% is sold, it means that the cost of inventory still includes 25% of the 5,000 unrealised profit and thus this needs to be eliminated. 5,000 x 25%)
CR COGS 3,750 (realising profit from intra-group sale of inventory. 5,000 x 75%)
DR Deferred tax asset 375  (1,250 reduction in inventory x 30%)
CR Tax expense 375  (20,000 -15,000 – 3,750) x 30%)

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NOTE: The journals for COGS can be combined to reflect the net effect. So the combined journals would be as follows:

\[
\begin{align*}
DR & \quad Sales \quad 20,000 \\
CR & \quad COGS \quad 18,750 \ (15,000 + 3,750) \\
& \quad Inventory \quad 1,250 \\
& \quad Deferred \ tax \ asset \quad 375 \\
CR & \quad Tax \ expense \quad 375 \\
\end{align*}
\]

**Required 5c:**

\[
\begin{align*}
DR & \quad Retained \ earnings \quad 875 \ (\text{carry forward effects of 20X7 profit.} \ 20,000 \ dr - 18,750 \ cr - 375 \ cr) \\
CR & \quad COGS \quad 1,250 \ (\text{realising profit from intra-group sale of inventory.} \ 5,000 \ x \ 25\%) \\
DR & \quad Tax \ expense \quad 375 \ (1,250 \ x \ 30\%) \\
\end{align*}
\]

**Question 6:**

\[
\begin{align*}
DR & \quad Dividend \ income \quad 13,500 \ (15,000 \ x \ 90\%) \\
& \quad Dividend \ – \ Retained \ earnings \quad 13,500 \\
\end{align*}
\]

Note: The other 10% of dividends were paid to non-controlling interest shareholders and thus are not required be eliminated.

**Question 7:**

\[
\begin{align*}
DR & \quad Dividend \ income \quad 30,000 \\
& \quad Dividend \ – \ Retained \ earnings \quad 30,000 \\
DR & \quad Dividend \ payable \quad 30,000 \\
CR & \quad Dividend \ receivable \quad 30,000 \\
\end{align*}
\]
**Intra-group transactions - Suggested solutions**

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**PART B: Intra-group transactions that DO NOT affect profits**

**Question 8:**

There are **NO journal entries relating to the payment and repayment** of the loan.

When Entity A paid the loan to Entity B, there would be a debit and credit to bank within the same group and for the same amount and thus, no journals are required as the net effect would be zero.

For the loan asset and liability:

- DR Loan payable 20,000
- CR Loan receivable 20,000

**Question 9:**

**Required 9a:**

- DR Management fee income 25,000
- CR Management fee expense 25,000
- DR Management fee payable 6,000
- CR Management fee receivable 6,000

**Required 9b:**

There are **NO tax effects** for the elimination journal entry relating to this transaction.

When consolidating, the management fee income of 25,000 and management fee expense of 25,000 is eliminated. Thus, the net effect on profits is zero. Accordingly, there are no tax effects.

**Question 10:**

Interest for the period 1 Jan 20X3 to 30 June 20X3 is 5,000 (100,000 x 10%) x 6 months/12 months

Journal to eliminate the interest income and expense is as follows:

- DR Interest income 5,000
- CR Interest expense 5,000

The question also indicates that the interest was not yet paid and so we need to eliminate the receivable and payable relating to the interest as well as the original loan amount.

- DR Loan payable 105,000 (100,000 + 5,000)
- CR Loan receivable 105,000

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