| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **1** | | for 0.08 × 1200 oe (= 96) **or** 1.08 × 1200 oe (= 1296) | **OR** 1200 × $1.08^3$ | | 3 | M1 | for 0.08 × 1200 oe (= 96) **or** 1.08 × 1200 oe (= 1296) | **OR** M2 for 1200 × $1.08^3$ **or** 1200 × $1.08^4$ (= 1632.59) |
| | | 1.08 × "1296" (= 1399.68) oe 1.08 × "1399.68" (= 1511.6544) oe | | | | M1 | for completing method to find total amount in the account | (M1 for 1200 × $1.08^2$ (= 1399.68)) |
| | | | | 1512 | | A1 | accept 1511 – 1512 | |
| | | | | | | | **SC:** if no other marks gained award M1 for 0.24 × 1200 oe **or** 288 **or** 1488<br><br>accept (1 + 0.08) as equivalent to 1.08 throughout | |
| | | | | | | | | **Total 3 marks** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **2** | a | 1.04 × 3 130 000 oe | | | 3 | M2 | complete method to increase salary by 4% | |
| | | | | | | | M1 for 0.04 × 3 130 000 oe (= 125 200) | |
| | | | | 3 255 200 | | A1 | | |
| | b | for 0.15 × 750 000 oe (=112 500) **or** 0.85 × 750 000 oe (637 500) | **OR** | | 3 | M1 | For method to find depreciation for 1 year or value after 1 year | **OR** M2 for 750 000 × $0.85^3$(= 460 593.75) **or** 750 000 × $0.85^4$ |
| | | 0.85 × "637 500" (= 541 875) oe 0.85 × "541 875" (= 460 593.75) oe | 750 000 × $0.85^3$ | | | M1 | for completing method | **(=** 391 504.69)<br><br>(M1 for 750 000 × $0.85^2$ **(=** 541 875) |
| | | | | 460 594 | | A1 | accept 460 593 – 460 594 | |
| | | | | | | | **SC:** if no other marks gained award M1 for 0.55 × 750 000 oe **(=** 412 500) **or** 0.45 × 750 000 oe **(=** 337 500)<br><br>accept (1 – 0.15) as equivalent to 0.85 throughout | |
| | | | | | | | | **Total 6 marks** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **3** | 20 000 × $0.81^3$ | | | M2 | M1 for 20 000 × 0.81 (= 16 200) or 20 000 × 1.19 (= 23 800) or 20 000 × $1.19^3$ (= 33 703.18)) | |
| | | 10 629 | | A1 | Accept 10 628 → 10.629 | |
| | | | | | | **Total 3 marks** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **4** | (b) | for 0.018 × 120 000 oe **or** 2160 **or** 1.018 × 120 000 oe **or** 122 160 | | 3 | M1 | For finding 1.8% or 101.8% of the value | **OR** M2 for 120 000 × $1.018^3$ **or** 120 000 × $1.018^4$ **or** 128 876.09<br><br>(M1 for 120 000 × $1.018^2$ **or** 124 358.88) |
| | | 1.018 × "122 160" (= 124 358.88) oe **and** 1.018 × "124 358.88" (= 126 597.34) oe | | | M1 | for completing the method | | |
| | | *Working not required, so correct answer scores full marks (unless from obvious incorrect working)*<br><br>*NB: this question is one where students could misread the number of zeros in 120 000 (eg one too many or one too few) in the question, up to M2 could be awarded if a correct method is seen with this misread* | 127 000 | | A1 | or 126 597 – 126 600 (if a correct answer is seen in working and then rounded incorrectly, award full marks) **SC:** if no other marks gained award M1 for 1.054 × 120 000 oe **or** 126 480 **or** 6 480<br><br>accept (1 + 0.018) as equivalent to 1.018 throughout | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **5** | $0.024 \times 50\,000$ (= 1200) oe or<br>$1.024 \times 50\,000$ (= 51 200) oe or<br>$1.024^2 \times 50\,000$ (= 52 428.8) oe or<br>$0.024 \times 50\,000 \times 3$ (= 3600) oe<br>$0.024 \times 50\,000 \times 3 + 50\,000$ (= 53 600) oe | | 3 | M1 | | M2 for<br>$50\,000 \times 1.024^3$ |
| | $0.024 \times (50\,000 +$ '1200') (= 1228.8) oe **and**<br>$0.024 \times (50\,000 +$ '1200' + '1228.8') (= 1258.2912)<br><br>**or**<br><br>'1200' + '1228.8' + '1258.2912' (= 3687.(0912))<br><br>**or**<br><br>$1.024 \times$ '52 428.8' | | | M1 | for completing method to find total amount in the account | |
| | | 53 687 | | A1 | accept 53 687 – 53 688 | |
| | | | | | accept (1 + 0.024) or $\left(1+\frac{2.4}{100}\right)$ as equivalent to 1.024 throughout | |
| | | | | | | **Total 3 marks** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **6** | (a) | for $0.035 \times 40\,000$ oe (= 1400)<br>**or** $1.035 \times 40\,000$ oe (= 41 400) | **OR** | | 3 | M1 | for finding 3.5% **or** 103.5% of 40 000 | **OR** M2 for $40\,000 \times 1.035^3$ |
| | | "1.035 × "41 400" oe (= 42 849)<br>"1.035 × "42 849" oe (= 44 348.72) | $40\,000 \times 1.035^3$ | | | M1 | for completing method to find total amount in the account | **or** $40\,000 \times 1.035^4$ (= 45 900.92)<br><br>(M1 for $40\,000 \times 1.035^2$ (= 42 849)) |
| | | | | 44 349 | | A1 | accept 44 348 – 44 349 | |
| | | | | | | | **SC:** if no other marks gained award M1 for $0.105 \times 40\,000$ oe **or** 4200 **or** 44 200<br><br>accept (1 + 0.035) as equivalent to 1.035 throughout | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **7** | $18\,000 \times 0.15$ (= 2700) oe<br>**or** $18\,000 \times 0.85$ (= 15 300) oe | | 3 | M1 | for finding 15% or 85% of 18 000 | M2 for $18\,000 \times 0.85^4$ oe<br>**or** $18\,000 \times 0.85^5$ (= 7986.(69…)) oe |
| | eg $18\,000 \times 0.85^4$ oe<br><br>**or** "15300" × 0.85 × 0.85 × 0.85 oe<br><br>**or** "15300" × 0.85 (= 13005) oe<br>**and** "13005" × 0.85 (= 11054.25) oe<br>**and** "11054.25" × 0.85 oe | | | M1 | (dep) for a complete method | |
| | | 9396 | | A1 | awrt 9396 | |
| | | | | | If no marks awarded, award SCB1 for<br>**or** $18000 \times 0.85^2$ (= 13 005) oe<br>**or** $18\,000 \times 0.85^3$ (= 11 054.(25)) oe<br>**or** $18\,000 \times 0.4$ (= 7200) oe<br>**or** $18\,000 \times 1.15$ (= 20700) oe<br>**or** $18\,000 \times 1.15^4$ (= 31482.(1125)) oe | |
| | | | | | | **Total 3 marks** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **8** | (a) | 1 + 0.04 (= 1.04) **or**<br>100(%) + 4(%) (= 104(%)) **or**<br>$\frac{634\,400}{104}$ (= 6100) oe | | 3 | M1 | | |
| | | 634 400 ÷ "1.04" **or**<br>634 400 ÷ "104" × 100 **or**<br>634 400 × 100 ÷ "104" oe | | | M1 | | |
| | | | No and 610 000 | | A1 dep on M2 for no and 610 000 seen oe<br>E.g. Still (band) B and 610 000 oe | | |
| | (b) | "0.85" × "0.85" (= 0.7225) oe **or**<br>"0.85" – ("0.85" × 0.15) (= 0.7225) **or**<br>$\frac{"85"\times"85"}{100}$ (= 72.25) oe or<br>[0.85 and 85 must come from correct working] | | 3 | M1 allow use of their amount<br>e.g.<br>200 × "0.85" × "0.85" (= 144.5) | M2 for<br>15 + (0.15 × "85")<br>or<br>15 + 12.75 | |
| | | 1 – "0.7225" **or** 0.2775 **or** 100 – "72.25" | | | M1 e.g.<br>$\frac{200-"144.5"}{200}$<br>(×100) | | |
| | | | 27.75 | | A1 oe allow 27.8 or 28 | | |
| | | | | | | | **Total 6 marks** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **9** | 50 000 × 1.013 (=50 650) oe<br>Or 50 000 × 0.013 ( = 650) oe<br><br>(NB: accept $\left(1+\frac{1.3}{100}\right)$ for 1.013 but not (1 + 1.3%)) | | 3 | M1 | For finding 101.3% or 1.3% of 50 000 | M2 for $50000\times1.013^4$ **or** $50000\times1.013^5$ | |
| | "50 650" × 1.013 (=51 308.45)<br>"51 308.45"× 1.013 (=51 975.45...)<br>"51 975.45...× 1.013 | | | M1 | dep for a complete method | | |
| | | 52 651 | | A1 | awrt 52 651<br>if no marks awarded then SCB1 for<br>50 000 × $0.013^n$<br>50 000 × $0.987^4$ (= 47450…..)<br>50 000 × 0.052 (= 2600)<br>50 000 × 1.052 ( (= 52600)<br>$50000\times1.013^2$ ( = 51308.45)<br>$50000\times1.013^3$ (= 51975.45…) | | |
| | | | | | | | **Total 3 marks** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **10** | 7200 × 0.025 (= 180)<br>or 7200 × 1.025 (= 7380) oe<br>or 7200 × 1.075 (= 7740) oe<br>or 7200 × 0.075 (= 540) oe | | 3 | M1 | | M2 for<br>7200 × $(1.025)^3$ |
| | (7200 + '180') × 0.025 (= 184.5)<br>and<br>(7200 + '180' + '184.5') × 0.025 (= 189.1125)<br>and<br>7200 + '180' + '184.5' + '189.1…' (= 7753.6125) | | | M1 NB year end values are<br>7380 and<br>7564.5(0)<br>7753.6125 | | |
| | | 7754 | | A1 answer in range 7753 – 7754 | | |
| | | | | | | **Total 3 marks** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **11** | (a) | for 0.04 × 2000 oe (= 80)<br>**or** 1.04 × 2000 oe (= 2080) | **OR**<br><br>2000 × $1.04^3$ oe | | 3 | M1 | for finding 4% **or** 104% of 2000 | **OR** M2 for<br>2000 × $1.04^3$ oe<br>**or** 2000 × $1.04^4$ oe<br>(= 2339.72) |
| | | 1.04 × "2080" oe (= 2163.2)<br>1.04 × "2163.2" oe | | | | M1 | for completing method to find total amount in the account at the end of 3 years | |
| | | *Correct answer scores full marks (unless from obvious incorrect working)* | | 2250 | | A1 | accept 2249 – 2250 | |
| | | | | | | | **SC:** if no other marks gained award M1 for<br>0.12 × 2000 oe **or** 240 **or** 1.12 × 2000 oe **or** 2240<br><br>accept (1 + 0.04) as equivalent to 1.04 throughout | |
| | (b) | eg 1365 ÷ (1 – 0.09)<br>**or** 1365 ÷ 0.91 | | | 3 | M2 | for a complete method | |
| | | | | | | (M1) | for 1365 ÷ (100 – 9) (= 15)<br>**or** (100 – 9)% = 1365 **or** 91% = 1365<br>**or** eg (1 – 0.09)$T$ = 1365<br>**or** eg $T$ – 0.09$T$ = 1365 | |
| | | *Correct answer scores full marks (unless from obvious incorrect working)* | | 1500 | | A1 | | |
| | | | | | | | | **Total 6 marks** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **12** | $\frac{2.9}{100} \times 5000 (=145)$ oe **or** $1.029 \times 5000$ (=5145) oe **or**<br>$1.029^2 \times 5000$ (= 5294….) oe **or** $0.058 \times 5000$ ( = 290) oe<br>**or** $1.058 \times 5000$ ( = 5290) | | | 4 | M1 **Bank H** | |
| | 5000 × 0.016 oe (= 80) oe<br>**or** 5000 × 1.016 oe (= 5080) oe<br>**or** 5000 × 0.032 ( = 160) oe<br>**or** 5000 × 1.032 (= 5160) oe | M2 for $5000 \times 1.016^2$ (= 5161.28) | | | M1 **Bank G** | |
| | (80 + 5000) × 0.016 (= 81.28) oe<br>**or** 5080 × 1.016 (= 5161.28) oe | | | | M1 **Bank G** | |
| | *Correct answer scores full marks (unless from obvious incorrect working)* | | 16.28 | | A1 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **13** | 0.12 × 700 000 oe (= 84 000)<br>**or**<br>0.88 × 700 000 oe (= 616 000)<br>**or**<br>700 000 × $0.88^2$ oe (= 542 080) | | 3 | M1 | for finding 12% **or** 88% of 700 000 | M2 for 700 000 × $0.88^3$ **or** 700 000 × $0.88^4$ (= 419 786.75) |
| | 0.88 × "616 000" oe (= 542 080)<br>**and**<br>0.88 × "542 080" oe (= 477 030.4) | | | M1 | for completing method to find the value of the car | |
| | *Correct answer scores full marks (unless from obvious incorrect working)* | 477 030 | | A1 | accept 477 030 – 477 031 | |
| | | | | | **SC:** if no other marks gained award M1 for 0.36 × 700 000 oe **or** 252 000<br>**or** 0.64 × 700 000 oe **or** 448 000<br><br>accept (1 − 0.12) as equivalent to 0.88 throughout | |
| | | | | | | **Total 3 marks** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **14** | for 0.04 × 680 oe **( = 27.2)**<br>**or** 1.04 × 680 oe **( = 707.2)** | | 3 | M1 | For finding 4% or 104% of the value | **or** M2 for $680 \times 1.04^3$<br>**or** $680 \times 1.04^4$<br>**or** 795.5(0…..) |
| | 1.04 × "707.2" (= 735.488) oe **and**<br>1.04 × "735.488" (= 764.90752) oe<br>**or**<br>0.04 ×(680 + "27.2") = 0.04 ×"707.2" = 28.288 **and**<br>0.04 ×"(707.2 +28.288 )"= 0.04 ×"735.488" = 29.41952 **and**<br>"735.488" + "29.41952" (= 764.90752….) | | | M1 | for completing the method | |
| | *Correct answer scores full marks (unless from obvious incorrect working)* | 765 | | A1 | or 764 – 765<br>(if a correct answer is seen in working and then rounded incorrectly, award full marks)<br>**SC:** if no other marks gained award M1 for 1.12 × 680 oe **or** 761.6(0) (or 762) **or**<br>0.12 × 680 oe **or** 81.6(0) (or 82) **or**<br>$0.96^3 \times 680$ oe **or** 601.62… (or 602)<br><br>(accept (1 + 0.04) as equivalent to 1.04 throughout but not (1 + 4%)) | |