

## Assessment 2 – detailed marking scheme

1a) 15 points:

- 5 points for calculations on paper - what you need to implement in excel
- 10 points calculations implemented well in excel

1b) 15 points:

- 5 points calculations on paper - what you need to implement in excel
- 10 points excel

1c) 10 points:

- 5 points calculations on paper - what you need to implement in excel
- 5 points excel

2a) 25 points

- 5 points calculations on paper - what you need to implement in excel
- 20 points excel

2b) 20 points

- 10 points for mathematical expressions (calculations on paper)
- 10 points for excel

2c) 15 points

- Mortality increases over time: likelihood of paying benefit increases (4 points)
- Term of the contract decreases: likelihood of paying the claim decreases over time (EPV of benefit decreases with time). (4 points)
- Premiums are decreasing the value of the reserves in each period. (4 points)

The answer should make the connection between the premiums paid, the mortality laws and the likelihood of paying the claim benefit in relation to the individual term of the policy – their trade-offs and which effect dominates (at different time). (3 points)