# Commentary on candidate evidence

Assessors awarded the candidate evidence the following marks for each aspect of the question paper.

## Question 1

### Candidate 1

The candidate was awarded **2 marks**.

The candidate was awarded mark 1 for evidence of the first accumulation.

The candidate was awarded mark 2 for evidence of the second accumulation.

The candidate was not awarded mark 3 since the power on the third accumulation is incorrect.

### Candidate 2

The candidate was awarded **1 mark**.

The candidate was awarded mark 1 for evidence of the first accumulation.

The candidate was not awarded mark 2 since the power on the second accumulation is incorrect.

The candidate was not awarded mark 3 since the multiplier on the third accumulation is incorrect.

### Candidate 3

## Question 2(a)

The candidate was awarded **3 marks**.

The candidate was awarded mark 1 for correctly sequencing the tasks and their durations.

The candidate was awarded mark 2 for correctly completing the forward scan A-F.

The candidate was awarded mark 3 for correctly completing the forward scan for the remaining five tasks.

The candidate was not awarded mark 4 because the backward scan is incorrect, see node J.

The candidate was not awarded mark 5 because the backward scan is incorrect, see node B or E.

## Question 2(c)

The candidate was awarded **0 marks.**

The candidate was not awarded mark 9 as their answer is consistent with their PERT chart; however, the stated units are incorrect.

# Candidate 4

## Question 2(a)

The candidate was awarded **4 marks**.

The candidate was awarded mark 1 for correctly sequencing the tasks and their durations.

The candidate was awarded mark 2 for correctly completing the forward scan A-F.

The candidate was awarded mark 3 for correctly completing the forward scan for the remaining five tasks.

The candidate was awarded mark 4 for correctly completing the backward scan of I, J, K, and H.

The candidate was not awarded mark 5 because the backward scan was incorrect, see node A.

## Question 2(b)

The candidate was awarded **2 marks.**

The candidate was awarded mark 6 for correctly adding task labels and accurately plotting tasks A-E.

The candidate was not awarded mark 7 as they have incorrectly interpreted the start time of task F.

The candidate was awarded mark 8 as a follow through consistent with the error in mark 7.

# Candidate 5

## Question 3(a)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 1, see COR Candidate A

## Question 3(b)(i)

The candidate was awarded **1 mark**.

The candidate was awarded mark 2 for stating the correlation coefficient.

## Question 3(b)(ii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 3 because they have missed the word linear and have not made the statement in context.

## Question 3(c)

The candidate was awarded **1 mark**.

The candidate was not awarded mark 4. See COR Candidate A.

The candidate was awarded mark 5. See COR Candidate A.

## Question 3(d)

The candidate was awarded **1 mark**.

The candidate was not awarded mark 6. See COR Candidate C.

The candidate was awarded mark 7. See COR Candidate C.

# Candidate 6

## Question 3(a)

The candidate was awarded **1 mark**.

The candidate was awarded mark 1 for generating the correct scatterplot.

## Question 3(b)(i)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 2, see note 2.

## Question 3(b)(ii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 3, there is no interpretation of the correlation coefficient.

## Question 3(c)

The candidate was awarded **1 mark**.

The candidate was awarded mark 4 for generating the coefficient and intercept.

The candidate was not awarded mark 5 because the equation is incorrect.

## Question 3(d)

The candidate was awarded **1 mark**.

The candidate was awarded mark 6 because the prediction interval has been generated.

The candidate was not awarded mark 7 because the answer is incorrect.

# Candidate 7

## Question 4(a)

The candidate was awarded **1 mark**.

The candidate was awarded mark 1 for correctly entering 42 and 45 into the diagram.

The candidate was not awarded mark 2 because they have incorrectly completed the diagram.

## Question 4(b)

The candidate was awarded **1 mark**.

The candidate was awarded mark 3 as the answer is correct based on the diagram from part (a)

# Candidate 8

## Question 4(a)

The candidate was awarded **1 mark**.

The candidate was awarded mark 1 for correctly entering 42 and 45 into the diagram.

The candidate was not awarded mark 2 as they did not complete the diagram.

## Question 4(b)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 3 as the probability is incorrect.

# Candidate 9

## Question 5(a)(i)

The candidate was awarded **2 marks**.

The candidate was awarded mark 1 for entering 9 and 3 into the correct cells.

The candidate was not awarded mark 2. See COR Candidate A.

The candidate was awarded mark 3. See COR Candidate A.

## Question 5(a)(ii)

The candidate was awarded **2 marks**.

The candidate was awarded mark 4. See COR Candidate A.

The candidate was awarded mark 5. See COR Candidate A.

## Question 5(b)(i)

The candidate was awarded **1 mark**.

The candidate was awarded mark 6, see note 1.

## Question 5(b)(ii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 7, see note 4.

## Question 5(b)(iii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 8 as the value stated is incorrect.

## Question 5(c)

The candidate was awarded **1 mark**.

The candidate was awarded mark 9 because they interpreted the relative error.

The candidate was not awarded mark 10 because the absolute error has not been stated.

# Candidate 10

## Question 5(a)(i)

The candidate was awarded **2 marks**.

The candidate was awarded mark 1 for entering 9 and 3 into the correct cells.

The candidate was not awarded mark 2 because an incorrect formula was used.

The candidate was awarded mark 3 as a follow through.

## Question 5(a)(ii)

The candidate was awarded **1 mark**

The candidate was awarded mark 4 because the graph constructed is consistent with the table.

The candidate was not awarded mark 5 because the labels are missing.

## Question 5(b)(i)

The candidate was awarded **0 marks.**

The candidate was not awarded mark 6 because no model was stated.

## Question 5(b)(ii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 7 because the explanation of the rate of change is insufficient.

## Question 5(b)(iii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 8 because the interpretation of graph or model is incorrect.

## Question 5(c)

The candidate was awarded **2 marks**.

The candidate was awarded mark 9 for interpreting the relative error.

The candidate was awarded mark 10 for calculating the absolute error.

# Candidate 11

## Question 6(a)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 1 because the answer is incorrect.

## Question 6(b)

The candidate was awarded **1 mark**.

The candidate was not awarded mark 2 because 1.8% was used instead of 0.18%.

The candidate was awarded mark 3, as follow through because their answer is consistent with the error in mark 2.

# Candidate 12

## Question 6(a)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 1 because the answer is incorrect.

## Question 6(b)

The candidate was awarded **0 marks.**

The candidate was not awarded mark 2 because the interest, deposit and balance are incorrect.

The candidate was not awarded mark 3 because the interest is incorrect.

# Candidate 13

## Question 7(a)(i)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 1 because the test stated was incorrect.

## Question 7(a)(ii)

The candidate was awarded **1 mark**.

The candidate was awarded mark 2 because they stated the correct null and alternative hypothesis.

## Question 7(b)

The candidate was awarded **2 marks.**

The candidate was awarded mark 3 for correctly interpretating the *p*-value.

The candidate was awarded mark 4 because the *p*-value has been interpreted in relation to the context of the research question.

# Candidate 14

## Question 7(a)(i)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 1 because no test was stated.

## Question 7(a)(ii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 2 because there is no reference to means.

## Question 7(b)

The candidate was awarded **1 mark**.

The candidate was awarded mark 3 because they correctly interpreted the *p*-value.

The candidate was not awarded mark 4 because there is no reference to significance.

# Candidate 15

## Question 8(a)

The candidate was awarded **2 marks**.

The candidate was not awarded mark 1 because the taxable income is incorrect. See COR Candidate B.

The candidate was awarded mark 2 because the taxable income for each band has been calculated.

The candidate was awarded mark 3 because the total tax has been calculated.

The candidate was not awarded mark 4 because the net monthly income calculation has not been completed.

## Question 8(b)

The candidate was awarded **1 mark**.

The candidate was awarded mark 5 because they have correctly calculated the monthly interest rate.

The candidate was not awarded mark 6 because the formula in the Capital Content column was incorrect.

The candidate was not awarded mark 7, see COR Candidate C.

The candidate was not awarded mark 8 because the final balance has been set to 0.

# Candidate 16

## Question 8(a)

The candidate was awarded **4 marks**.

The candidate was awarded mark 1 because the correct taxable income has been calculated.

The candidate was awarded mark 2 because the correct taxable income for each band has been calculated.

The candidate was awarded mark 3 because the total tax has been calculated.

The candidate was awarded mark 4 because the net monthly income calculation is correct.

## Question 8(b)

The candidate was awarded **2 marks**.

The candidate was awarded mark 5, they have correctly calculated the monthly interest rate.

The candidate was not awarded mark 6, due to incorrect formula in Cell E16.

The candidate was not awarded mark 7, adjusted value in cell C39.

The candidate was awarded mark 8, monthly repayment calculated and rounded.

## Question 8(c)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 9, there is no reference to the answer from part (b).

# Candidate 17

## Question 9(a)(i)

The candidate was awarded **1 mark**.

The candidate was awarded mark 1 because the tree diagram has been completed.

The candidate was not awarded mark 2, see note 3.

## Question 9(a)(ii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 3 because two answers have been given, 0.362 and 0.367 and 0.367 was subsequently used in (a)(iii).

## Question 9(a)(iii)

The candidate was awarded **1 mark**.

The candidate was awarded mark 4 because the correct expected cost was calculated using the probability from (a)(ii).

## Question 9(b)(i)

The candidate was awarded **1 mark**

The candidate was awarded mark 5 because the correct expected cost has been calculated using control measure 1.

## Question 9(b)(ii)

The candidate was awarded **1 mark.**

The candidate was awarded mark 6 because the correct expected cost has been calculated using control measure 2.

## Question 9(c)

The candidate was awarded **0 marks.**

The candidate was not awarded mark 7, see note 3a.

# Candidate 18

## Question 9(a)(i)

The candidate was awarded **1 mark**.

The candidate was awarded mark 1 because the tree diagram has been completed.

The candidate was not awarded mark 2 because the probabilities are incorrect.

## Question 9(a)(ii)

The candidate was awarded **0 marks.**

The candidate was not awarded mark 3, see note 1.

## Question 9(a)(iii)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 4 because the calculation is not consistent with the probability calculated in (a)(ii).

## Question 9(b)(i)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 5 because the calculation was incorrect.

## Question 9(b)(ii)

The candidate was awarded **1 mark**.

The candidate was awarded mark 6 because of a repeated error in the calculation.

## Question 9(c)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 7 because the reason given was incorrect.

# Candidate 19

## Question 10(a)

The candidate was awarded **2 marks**.

The candidate was awarded mark 1 because the correct multiplier was stated within context.

The candidate was awarded mark 2 because the minimum deposit was correctly calculated.

## Question 10(b)

The candidate was awarded **1 mark**.

The candidate was awarded mark 3 because they have used appropriate ratios.

The candidate was not awarded mark 4, ‘no’ is incorrect.

## Question 10(c)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 5 because the reason is not valid.

# Candidate 20

## Question 10(a)

The candidate was awarded **1 mark**.

The candidate was not awarded mark 1 because there is an incorrect power in the multiplier.

The candidate was awarded mark 2 because the solution is consistent with the error in mark 1. Subsequent working to the answer is ignored.

## Question 10(b)

The candidate was awarded **1 mark**.

The candidate was awarded mark 3, see COR Candidate A.

The candidate was not awarded mark 4 because ‘no’ is incorrect.

## Question 10(c)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 5 because the reason is not valid.

# Candidate 21

## Question 11(a)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 1. Response is similar to note 2(a).

## Question 11(b)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 2 because the comment is inappropriate.

## Question 11(c)

The candidate was awarded **0 marks.**

The candidate was not awarded mark 3 because no assumption has been made.

The candidate was not awarded mark 4 because no assumption has been made.

The candidate was not awarded mark 5, see note2.

# Candidate 22

## Question 11(a)

The candidate was awarded **1 mark**.

The candidate was awarded mark 1 because an appropriate comment has been made.

## Question 11(b)

The candidate was awarded **0 marks**.

The candidate was not awarded mark 2 because the graph has not been discussed.

## Question 11(c)

The candidate was awarded **2 marks**.

The candidate was awarded mark 3 because an appropriate assumption has been made.

The candidate was awarded mark 4 because an appropriate assumption has been made.

The candidate was not awarded mark 5 because the calculation is incorrect.