Mark scheme UNIT 11

This test is divided into non-calculator (20 minutes) and calculator (30 minutes) sections which can be delivered separately.

The following marks are awarded for each question.

B	Unconditional accuracy mark
M	Method mark – the correct method must be shown but there may be an arithmetic error; the sight of the value given in brackets implies the award of the method mark
A	Accuracy mark – unless the question specifies that working **must** be shown then the sight of the correct answer implies the award of full marks (unless the answer clearly comes from incorrect working)
C	Communication mark
P	Process mark to show correct process for problem solving. Any other process of a similar standard to achieve an accurate result is acceptable to achieve this mark
FT	Incorrect values may be **followed through** from one step to the next **provided** that the correct method is seen in each step and the only errors are arithmetic. This is shown in mark schemes by putting a number in inverted commas
OE	Or equivalent answer mark

Non-Calculator			
Q	**Answer**	**Mark**	**Comment**
1	3:5	M1	15:25
		A1	award one mark for 5:3
3	16	M1	3×4 (= 12)
		A1	
5	3:7	M1	18:42 or method to divide 1.8 and 4.2 by a common factor that would result in a whole number, e.g. ÷ 0.6
		A1	

7	£14 and £21	M1	$35 \div 5$ (= 7)
		A1	condone missing £ signs

🖩 **Calculator**			
9	1.2:1 or n = 1.2	B1	accept $\frac{6}{5}$:1 or $1\frac{1}{5}$:1
11a	500 g	M1	300 ÷ 3 (= 100)
		A1	
11b	butter = 225 g, flour = 375 g	M1	600 ÷ (3 + 5) (= 75)
		M1	3 × "75" or 5 × "75"
		A1	must have both and must show which is butter and which is flour
13	Medium or 400 g or £2.10 jar	P1	for process to find the cost of 1 unit or the amount of marmalade you would get for 1 unit (or other multiple, e.g. 10) (£ or p) for one item, e.g. $\frac{340}{1.9}$ (= 178.947..), $\frac{400}{2}$ .10 (= 190.476...), $\frac{520}{2.8}$ (= 185.714...) or $\frac{190}{340}$ (= 0.5588...), $\frac{210}{400}$ (= 0.525), $\frac{280}{520}$ (= 0.538..)
		P1	For process to find the cost of 1 unit or the amount of marmalade you would get for 1 unit (£ or p) for two items – must be able to be compared
		A1	for process to compare all three sizes
		C1	correct jar selected FTt dep on P2 (note, there are many ways of doing this)

15a	350	M1	for a fully correct method to find amount, e.g. $(140 \div 24) \times 60$
		A1	
15b	96	M1	for a fully correct method to find max number, e.g. $(1000 \div 250) \times 24$ OE
		A1	
17	105°	M1	$180 \div 12 \ (= 15)$ or $7 \div 12 \ (= 0.5833...)$
		M1	"15" $\times 7$ or "0.5833..." $\times 180$
		A1	

Non-Calculator			
Question	**Topic**	**Step**	**Mark**
1	Use ratio notation	4th	2
3	Use the unitary method to solve simple word problems involving ratio and direct proportion	5th	2
5	reduction to simplest form	5th	2
7	Divide a quantity into two parts in a given ratio, where ratio given in ratio notation	6th	2

🖩 Calculator			
9	Reduce ratios to their simplest form, including three-part ratios	5th	1
11a	Divide a given quantity into two parts in a given part:part or part:whole ratio	6th	2
11b	Divide a given quantity into two parts in a given part:part or part:whole ratio	6th	3
13	Solve problems using constant rates and related formulae	7th	4
15a	In a table of values, recognise the values are in direct proportion if the ratio between the values is constant	8th	2
15b	In a table of values, recognise the values are in direct proportion if the ratio between the values is constant	8th	2

17	Divide a quantity into more than two parts in a given ratio, Derive and use the sum of angles in a triangle and a quadrilateral	7th	3