Multiple-choice section

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Answer | B | B | C | B | A | C | B | D | B | C |

Question 1 [1.1]

B

18 × 6

= (10 + 8) × 6

= 10 × 6 + 8 × 6

Question 2 [1.2]

B

35 = 3 × 3 × 3 × 3 × 3

Question 3 [1.2]

C

Cube root of 27 = 3

Question 4 [1.3]

B

360 ÷ 30

= 36 ÷ 3

= 12

$12 per student

Question 5 [1.3]

A

|  |  |  |  |
| --- | --- | --- | --- |
| Option A | Option B | Option C | Option D |
| 480 ÷ 8 | 480 ÷ 8 | 480 ÷ 8 | 480 ÷ 8 |
| = 4 ÷ 8 + 8 ÷ 8 + 0 ÷ 2 | = 480 ÷ 2 ÷ 2 ÷ 2 | = 400 ÷ 8 + 80 ÷ 8 | = 48 ÷ 8 × 10 |
| = 0.5 + 1 + 0 | = 240 ÷ 2 ÷ 2 | = 50 + 10 | = 6 × 10 |
| = 1.5 | = 120 ÷ 2 | = 60 | = 60 |
|  | = 60 |  |  |

Question 6 [1.4]

C

Shirt $48; tie $21; trousers $64

Estimated total ≈ 50 + 20 + 60 ≈ $130

Question 7 [1.4]

B

108 × 21

≈ 100 × 20

= 100 × 2 × 10

= 200 × 10

= 2000

Question 8 [1.5]

D

5 + 27 \* 3 = 14

Option A:5 + 27 + 3 = 35

Option B:5 + 27 – 3 = 29

Option C:5 + 27 × 3 = 86

Option D:5 + 27 ÷ 3 = 14

Question 9 [1.5]

B

10 + 62 ÷ (7 + 5)

= 10 + 36 ÷ 12

= 10 + 3

= 13

Question 10 [1.6]

C

Tara: $32

Older brother: Double the amount $32 × 2 = $64

Younger brother: Half the amount $32 × 0.5 = $16

Difference = 64 – 16 = $48

Multiple-choice total marks: 10

Short answer section

Question 11 3 marks [1.2, 1.3]

(a) The *quotient* is the result of a division calculation.

(b) In index notation, the index tells us how many times the *base* will appear when written in *expanded form*.

Question 12 2 marks [1.1]

The commutative law states that the order in which you add or multiply any two numbers does not change the result of a calculation. For example: 7 + 8 = 15 and 8 + 7 = 15

5 × 6 = 30 and 6 × 5 = 30

Question 13 2 marks [1.1]

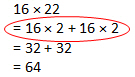
2 × 24 × 5

= 2 × 5 × 24

= 10 × 24

= 240

Question 14 3 marks [1.3]

(a) Jonathon’s working  


(b) Correct working  
16 × 22  
= 16 × 20 + 16 × 2  
= 320 + 32  
= 352

(c) Jonathon split up the ‘units’ place value correctly but has forgotten that the first digit in the number he is splitting is in the ‘tens’ place-value column.

Question 15 2 marks [1.1]

116 + 28 + 24

= 116 + 24 + 28

= 140 + 28

= 168

Question 16 2 marks [1.1]

312 × 4

= 312 × 2 × 2

= 624 × 2

= 1248

Question 17 4 marks [1.2]

|  |  |
| --- | --- |
| (a) 26 = 2 × 2 × 2 × 2× 2 × 2 = 64 | (b) 104 = 10 × 10 × 10 × 10 = 10 000 |

Question 18 2 marks [1.2]

|  |  |
| --- | --- |
| (a) 4 × 4 × 4 × 4 × 4 = 45 | (b) 80 × 80 × 80 = 803 |

Question 19 2 marks [1.2]

23 – = 8 – 3

= 5

Question 20 2 marks [1.3]

270 ÷ 6

= 270 ÷ 3 ÷ 2

= 90 ÷ 2

= 45

Question 21 3 marks [1.3]

|  |  |  |  |
| --- | --- | --- | --- |
|  | 20 | 1 |  |
| 80 | 1600 | 80 | 1680 |
| 7 | 140 | 7 | + 147 |
|  |  |  | 1827 |

Question 22 2 marks [1.3]

28000 ÷ 400

= 280 ÷ 4

= 70

Question 23 1 mark [1.4]

8000

Question 24 4 marks [1.4]

|  |  |
| --- | --- |
| (a) 62 × 31 = 60 × 30 = 1800 | (b) 8565 ÷ 53 = 9000 ÷ 50 = 900 ÷ 5 = 180 |

Question 25 4 marks [1.5]

|  |  |
| --- | --- |
| (a) 8 × (9 – 5) ÷ 2 = 8 × 4 ÷ 2 = 32 ÷ 2 = 16 | (b) 28 + 16 ÷ 2 – 6 = 28 + 8 – 6 = 30 |

Question 26 2 marks [1.5]

|  |  |
| --- | --- |
| (a) (8 + 10) ÷ (2 + 4) = 3 | (b) 37 + 8 ÷ (10 – 6) = 39 |

Short answer total: 40

Extended answer section

Question 27 4 marks [1.3, 1.4, 1.6]

(a) 30 000

(b) 30 000 × 44  
= 30 000 × 40 + 30 000 × 4  
= 1 200 000 + 120 000  
= $1 320 000

Question 28 6 marks [1.1, 1.4, 1.6]

(a) First call: 35 + 90 = 125  
Second call:  
35 + 4 × 90  
= 35 + 360  
= 395  
Third call:  
0 + 65 × 10 = 650  
Total cost = 125 + 395 + 650  
= 1170 cents

(b) Remaining credit  
= Credit – Total cost of calls  
= 1500 – (35 + 90 + 35 + 4 × 90 + 65 × 10)  
= 1500 – 1170  
= 330 cents

Extended answer total: 10

TOTAL test marks: 60