Multiple choice section

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

Question 1 [1.1]

D

16 × 2

= (10 + 6) × 2

= 10 × 2 + 6 × 2

Question 2 [1.2]

B

 = 10 × 10 × 10

Question 3 [1.2]

C

Five cubed is:

53 = 5 × 5 × 5

= 25 × 5

= 125

Question 4 [1.3]

D

2000 ÷ 20

= 2000 ÷ 10 ÷ 2

= 200 ÷ 2

= 100

They will need to wash 100 cars.

Question 5 [1.3]

D

20 × 50

= 2 × 5 × 10 × 10

= 1000

Question 6 [1.4]

C

Shirt $43; tie $18; trousers $73

Estimate = 40 + 20 + 70

= $130

Question 7 [1.4]

D

416 ÷ 9

≈ 400 ÷ 10

= 40

Question 8 [1.5]

D

20 – 7 – 3 × 2

= 20 – 7 – 6

= 13 – 6  
= 7

Question 9 [1.5]

B

10 – 62 ÷ (2 + 2)

= 10 – 36 ÷ 4

= 10 – 9

= 1

Question 10 [1.6]

A

Toni: $40

Older brother: Double the amount $40 × 2 = $80

Younger brother: Half the amount $40 ÷ 2 = $20

Difference = 80 – 20 = $60

Multiple-choice total marks: 10

Short answer section

Question 11 4 marks [1.1, 1.2]

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

(b) 27 is a perfect *cube*.

(c) 3 × 3 × 3 × 3 can be written in *index* form as 34 and 3 is called the *base*.

Question 12 4 marks [1.1, 1.2]

= 6 × 6 × 6

= 36 × 6

= 6 × 30 + 6 × 6

= 180 + 36

= 216

Question 13 2 marks [1.1]

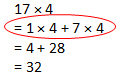
2 × 28 × 5

= 2 × 5 × 28

= 10 × 28

= 280

Question 14 3 marks [1.3]

(a) Jonathon’s working  


(b) Correct working  
17 × 4  
= 10 × 4 + 7 × 4  
= 40 + 28  
= 68

(c) Jonathon split up the ‘ones’ 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 3 marks [1.1]

38 + 53 + 22

= 38 + 22 + 53

= 60 + 53

= 113

Question 16 2 marks [1.1]

41 × 3

= (40 + 1) × 3

= 40 × 3 + 1 × 3

= 120 + 3

= 123

Question 17 3 marks [1.2, 1.3]

2003

= 200 × 200 × 200

= 2 × 100 × 2 × 100 × 2 × 100

= 2 × 2 × 2 × 100 × 100 × 100

= 8 000 000

Question 18 1 mark [1.2]

7 × 7 × 7 × 7 × 7 × 7 = 76

Question 19 1 mark [1.2]

= 4

Question 20 3 marks [1.1, 1.3]

51 × 6

= 51 × 2 × 3

= 102 × 3

= 3 × (100 + 2)

= 3 × 100 + 3 × 2

= 306

Question 21 1 mark [1.4]

8000

Question 22 2 marks [1.4]

32 × 41

≈ 30 × 40

= 1200

Question 23 2 marks [1.5]

25 + 20 ÷ 5

=25 + 4

= 29

Question 24 2 marks [1.5]

9 ÷ (3 + 6) × 4 = 4

Short answer total: 33

Extended answer section

Question 25 6 marks [1.1, 1.3, 1.6]

Shorts:

3 × $24

= 3 × (20 + 4)

= $72

Shirts:

71 × 4

= 71 × 2 × 2

= $284

Ties:

11 × $13

|  |  |  |
| --- | --- | --- |
|  | 10 | 3 |
| 10 | 10 × 10 = 100 | 10 × 3 = 30 |
| 1 | 1 × 10 = 10 | 1 × 3 = 9 |

= 100 + 30 + 10 + 3

= $143

Total:

= 72 + 284 + 143

= 72 + 427

= 499

Ravi spends $499 in total.

Question 26 4 marks [1.2, 1.3, 1.4]

(a) 26 ≈ 30  
262 × 103  
≈ 302 × 103  
= 30 × 30 × 10 × 10 × 10   
3 × 10 × 3 × 10 × 1000  
= 900 000

(b) 26 ≈ 30  
30 is more than 26 and so since our calculation only involves multiplications our estimate will be an overestimate

(c) 262 × 103   
To calculate 262  
= 26 × 26

|  |  |  |
| --- | --- | --- |
|  | 20 | 6 |
| 20 | 20 × 20 = 400 | 20 × 6 = 120 |
| 6 | 6 × 20 = 120 | 6 × 6 = 36 |

26 × 26

= 400+ 120 + 120 + 36

= 676

262 × 103

= 676 × 10 × 10 × 10

= 676 × 1000

= 676 000

Extended answer total: 11

TOTAL test marks: 54