Multiple-choice section

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

Question 1 [1.1]

C

7 – 10 = -3

Question 2 [1.1]

D

-4 – 12 = -16

Question 3 [1.2]

B

2 × -5 = -10; a positive multiplied by a negative gives a negative number.

Question 4 [1.5]

A

(-3)2 = -3 × -3 = 9

Question 5 [1.3]

B

5

Question 6 [1.4]

C

-1 + (2 × -2) +2

= -1 + -4 + 2

= -3

Question 7 [1.4]

D



= 4 – 4 × -1

= 4 + 4 = 8

Question 8 [1.5]

C

(-3)2 +22

= 9 + 4 = 13

Question 9 [1.6]

B

40 + 80 = 1 + 1 = 2

Question 10 [1.4]

D

Need to multiply, not add.

Multiple-choice total marks: 10

Short answer section

Question 11 2 marks [1.1]

(a) -9 (b) -4

Question 12 1 mark [1.1]

4, 2, 0, -1, -3

Question 13 5 marks [1.4]

|  |  |
| --- | --- |
| (a) -2 + (-4) + (-1) = -2 – 4 – 1 = -7 | (b) -5 × -4 = 20 |
| (c) 22 – (4)2 +(-1)2  = 4 – 16 + 1   = -11 | (d) 21 ÷ -7 = -3 |

Question 14 4 marks [1.1]

(a) Friday -3 °C

(b) Thursday 5 °C

(c) From Thursday to Friday, a drop of 8 °C

Question 15 2 marks [1.2]

Loss for each hockey stick is -$90 + $60 = -$30

Loss for four hockey sticks is 4 × -$30 = -$120. The loss for the store is $120.

Question 16 2 marks [1.2]

One B, three Es

1 × -3 + 3 × 3

= -3 + 9 = 6

Question 17 2 marks [1.3]

-$1530 ÷ 3 = -$510

Question 18 2 marks [1.3]

-$2 040 000 ÷ 12 = -$170 000

Question 19 2 marks [1.3]

From 6 pm to 4 am the next day is 10 hours.

The temperature change is a drop of 8 °C – (-2 °C) = 10 °C . This can also be expressed as -10 °C.

The average change in temperature per hour = -10 °C ÷ 10 hours = -1 °C per hour.

Question 20 4 marks [1.4]

|  |  |
| --- | --- |
| (a) (10 – 4)  (-4 + 3) = 6 × -1 = -6 | (b) -3 × -4 – (-15 ÷ -5) + (-6) = 12 – 3 – 6 = 3 |

Question 21 3 marks [1.4]

5 × -$6 million + 7 × $4 million

= -$30 million + $28 million = -$2 million

The company made a loss of $2 million for the year.

Question 22 4 marks [1.5]

(a) (-3)2  (2)3  
= 9 × 8 = 72

(b) (23  34) ÷ (22  33)  
= 23 - 2 × 34 - 3  
= 21 × 31  
= 2 × 3 = 6

Question 23 4 marks [1.5]

(a) 

(b)



Question 24 2 marks [1.6]

(a) 80 = 1 (b) (33)2 = 3(3 × 2) = 36 = 3 × 3 × 3 × 3 × 3 × 3 = 729

Question 25 2 marks [1.6]

24 = 2 × 2 × 2 × 3 = 23 × 3

Short answer total marks: 41

Extended answer section

Question 26 9 marks [1.4]

(a) There is one more black counter than white counters.

(b) (i) ● ● (ii) ● ● 🔾 = -1

(c) ● + (● ● → 🔾 🔾) = ● 🔾 🔾 = +1, so -1 – -2 = +1

(d) 🔾 + (● ● → 🔾 🔾)= 🔾 + 🔾 🔾 = 🔾 🔾 🔾, so +1 – -2 = +3

(e) 🔾 🔾 + 🔾 🔾 = +4

Extended answer total marks: 9

TOTAL test marks: 60