­­­­Multiple-choice section

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

Question 1 [1.4]

C

(-5 × 4) + 

= -20 – 5

=-25

Question 2 [1.5]

D

-(-7)3 = -(-7 × 7 × 7)  
 = 343

Question 3 [1.4]

B



Question 4 [1.4]

D

-14 + 21  -4 + 35

= -14 + -84 + 35

= -14 – 84 + 35  
= -63

Question 5 [1.4]

A



Question 6 [1.4]

C

-52 +32 × (-4 – 8)

= -25 + 9 × -12

= -25 – 108 = -133

Question 7 [1.5]

C

(26 -22) ÷ -24

= -2(6 + 2)  ÷ -24

= -28  ÷ -24

= 2(8 - 4)

= 24

= 16

Question 8 [1.6]

C



Question 9 [1.4]

B

(2  3)2 ÷ (3  4)2

= 62 ÷ 122

= 36 ÷ 144 = 

Question 10 [1.1]

C

22 + 13 – 17 = 18

Multiple-choice total marks: 10

Short answer section

Question 11 2 marks [1.1]

(a) +40 (b) -50

Question 12 2 marks [1.1]

|  |  |
| --- | --- |
| (a) -30 + (-16) + (-19) = -30 – 16 – 19 = -65 | (b) -21 – (-12) + (-11) = -21 +12 – 11 = -20 |

Question 13 4 marks [1.1]

(a) Saturday -38 °C (b) Tuesday 12 °C

(c) From Friday to Saturday, a drop of 59 °C

Question 14 2 marks [1.2]

(a) 51 × -13 = -663 (b) -32 × -21 = 672

Question 15 2 marks [1.2]

|  |  |
| --- | --- |
| (a) (-11)2 – (31)2   = 121 – 961 = -840 | (b) (-11)2 – (18)2 + (-31)2  = 121 – 324 + 961 = 758 |

Question 16 3 marks [1.2]

Loss for each Wilson tennis racquet is -$91 + $78 = -$13

Loss for each Head tennis racquet is is -$114 + $88 = -$26

Loss for 17 Wilson tennis racquets plus the loss for 21 Head tennis racquets is:  
17 × -$13 + 21 × -$26 = -$767.   
The loss for the store is $767.

Question 17 2 marks [1.2]

Two As, two Bs, three Es and 1 F

2 × 2 + 2 × -7 + 3 × 8 + 1 × -18

= 4 – 14 +24 – 18 = -4

Question 18 2 marks [1.3]

(a) -189 ÷ -7 = 27 (b) 152 ÷ -8 = -19

Question 19 2 marks [1.3]

From 10 pm to 4 am the next day is 6 hours. The temperature change is a drop of   
7 °C – (-2 °C) = 9 °C . This can also be expressed as -9 °C. The average change in temperature per hour = -9 °C ÷ 6 hours = -1°C per hour.

Question 20 4 marks [1.4]

|  |  |
| --- | --- |
| (a) (-7 – 2 – 6)  (-8 – 4 – 5) = -15 × -17 = 255 | (b) -117 ÷ -9 + (-78) ÷ 3  = -13 + -26 = -39 |

Question 21 4 marks [1.4]

|  |  |
| --- | --- |
| (a) (7 – 24)2 – 3 × = (-17)2 – 3 × 17 = 289 – 51 = 238 | (b) -3 × -12 – (-60 ÷ -3) + (-11)  = 36 – 20 – 11 = 5 |

Question 22 3 marks [1.4]

4 × -$8.5 million + 8 × $3.5 million = -$34 million + $28 million = -$6 million  
The company made a loss of $6 million for the year.

Question 23 4 marks [1.5]

(a) 154 ÷ (-15)2= 154  ÷ 152= 15(4 - 2)= 152= 15 × 15 = 225

(b)   


Question 24 3 marks [1.6]

(a) 3*x*÷ 37 = 1

*x* = 7

(b) 3x ÷ (32 )3 = 39

Question 25 2 marks [1.6]

225 = 3 × 3 × 5 × 5 = 32 × 52

Short answer total marks: 41

Extended answer section

Question 26 4 marks [1.1]

(a) 0 + (-29) + (+17) + (-14)

(b) -26 m, or 26 m below the surface of the water

(c) -16 + (-17) + (+9) = -24, or 24 m below the surface of the water

(d) The second submarine is 2 m above the first.

Question 27 5 marks [1.2]

(a) 3 × 22 + 7 × 32 = 290. This means that the credit card balance (amount owed) increased by $290.

(b) 6 × (-28) + 5 × (-13) + 13 × 62 = 573. This means that the credit card balance (amount owed) increased by $573.

Extended answer total marks: 9

TOTAL test marks: 60