② T

③ T

④ T

⑤ T

⑥ F

$$4 - (-4) = 4 + 4 = 8 \neq -8$$

⑦ F

The smallest integer is not possible.

⑧ T

⑨ T

⑩ T

All negative integers greater than -5 are

$$-4, -3, -2, -1$$

Their sum $= (-4) + (-3) + (-2) + (-1)$

$$= -4 - 3 - 2 - 1 = -10$$

④

Value Based Questions:

①

(a) $2 + 5 = 7$

(b) $2 - 5 = -3$

(c) $2 + 2 + 3(-1) = 4 - 3 = 1$

(d) $2 + 4(-1) + 1 = 2 - 4 + 1 = 3 - 4 = -1$

②

(a) The minimum temperature was lowest on Thursday.

(b) The maximum temperature was lowest on Saturday.

(c) Required difference $= 1°c - (-3°c) = 1°c + 3°c$

$$= 4°c$$

Mental maths

① F

opposite of -10 is $+10$.

Solution (d): The smallest integer is not
possible.

(7)

Solution (b): $-|-15| = -15$.

(8)

Solution (a): The absolute value of an integer
is always positive.

(9)

Solution (c):

4 less than $-2 = -2 - 4 = -6$

(10)

Solution (d):

Let the required number be 'n'.

$$n + (-10) = 10 \implies n - 10 = 10$$
$$\implies n = 10 + 10 = 20$$

Value Based Questions:

(1)

Multiple Choice Questions:

①

Solution (b): $8°c$ below freezing point means

$$0°c - 8°c = -8°c$$

②

Solution (a): On the number line integers on the left is less than the integers on the right

Thus $-8 > -10$

③

solution (c): Zero is neither positive nor negative.

④

Solution (b): The smallest positive integer is 1.

⑤

Solution (c): The greatest negative integer is -1.

⑥

Solution (d): The smallest integer is not possible.

(i) The distance between the cars after 2
hours if they are moving in same direction=
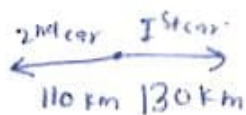
$(2 \times 65) - (2 \times 55) = 130 - 110 = 20 km$

(ii)

Distance covered by first car in two hours

$= (2 \times 65) = 130 km$

Distance covered by the second car in two

hours $= (2 \times 55) = 110 km$

Thus the difference between them when they
are moving in opposite directions =

$130 km + 110 km = 240 km$.   2nd car   I stcar

110 km 130 km
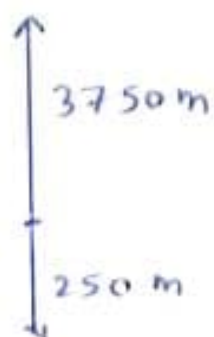
(15)

The temperature was fall by $1°c - (-4°c)$

$= 1°c + 4°c$

$= 5°c$

(12) Profit made by selling a chair = + ₹ 85

Loss made by selling a table = − ₹ 125

Final outcome = + ₹ 85 − ₹ 125 = − ₹ 40

Thus, Salman made a loss of ₹ 40 in this whole transaction.

(13)

Since Pilot and Submarine both are in different directions.

Thus, distance will add.

∴ the difference between the pilot and submarine = + 3750 + 250 = 4000 m.

```
          ↑
          | 3750 m
          |
          ⊢
          | 250 m
          ↓
```

(14)

(i) The distance between the cars after 2 hours if they are moving in same direction =

$(2 \times 65) - (2 \times 55) = 130 - 110 = 20$ km

(9)

(i) $-36 + (-21)$ ⊟= $-21 + (-36)$

(ii) $-23 + (+22)$ ⊡> $-23 + (-22)$

(iii) $50 + (-46)$ ⊡< $40 - (-50)$

(iv) $0 - (-7)$ ⊡> $(-7) + 0$

(10)

Total cost price of pencils and pens

$$= ₹30 + ₹90 + ₹25 = ₹145$$

Total selling price of pencils and pens

$$= ₹20 + ₹70 = ₹90$$

Here $CP > SP$. It means Loss occurs.

Thus $Loss = ₹145 - ₹90 = ₹55$

(11) Opposite of the greatest 2-digit number
$$= -99$$
Greatest 1-digit number $= 9$
Required difference $= -99 - 9 = -108$

5 Additive inverse of 15 is -15.

So, $15 + (-15) = 15 - 15 = 0$

Additive inverse of 70 is -70.

So, $70 + (-70) = 70 - 70 = 0$

Additive inverse of -30 is 30.

So, $-30 + 30 = 0$

Additive inverse of 45 is -45.

So, $45 + (-45) = 45 - 45 = 0$

Additive inverse of 100 is -100.

So, $100 + (-100) = 100 - 100 = 0$

⑧ The required pairs are given below in which the first number is the additive inverse of the second number.

$(40, -40), (20, -20), (-450, 450), (-17, 17)$

$(10, -10), (50, -50)$

(iv) $350 - (-18)$

$= 350 + 18 = 368$

(v) $-87 - (-13)$

$= -87 + 13 = -74$

(vi) $-825 + (-75) - (+25)$

$= -825 - 75 - 25$

$= -825 - 100 = -925$

(vii) $1 + 2 - 3 + 4 - 5 + 6 - 7 + 8$

$= 1 + 2 + 4 + 6 + 8 - 3 - 5 - 7$

$= 21 - 15 = 6$

(viii)

$0 - 1 + 2 - 3 + 4 - 5 + 6 - 7 + 8$

$= 0 + 2 + 4 + 6 + 8 - 1 - 3 - 5 - 7$

$= 20 - 16 = 4$

⑦

(1) Additive inverse of -13 is 13.

so, $-13 + 13 = 0$

④

(iii) -135 from -250

$-250 - (-135) = -250 + 135 = -115$

(iv) -2768 from -287

$-287 - (-2768) = -287 + 2768 = 2481$

(v) 68 from -37

$-37 - 68 = -105$

(vii) 6240 from -271

$-271 - 6240 = -6511$

⑥ Calculate:

(i) $-52 + (-42)$

$= -52 - 42 = -94$

(ii) $-390 + (+560)$

$= -390 + 560 = 1$

(iii) $291 + (-480)$

$= 291 - 480 = -189$