# UPSC CSAT DPP 05 - Reasoning

**Q1** Amit is 40 m South - West of Basu. Chetan is 40 m South - East of Basu. Chetan is in which direction of Amit?

(A) East (B) West
(C) North - East (D) South

**Q2** Rahul is facing South and then he turned right and walk 40 m. Then he turned right again and walks 20 m. Then he turned left and walks 20 m and then turning right walk 20 m. Then he turned right again and walks 80 m. In which direction is Rahul from the starting point?

(A) North (B) North-West
(C) East (D) North-East

**Q3** Sahil walks 7 kilometres towards North. From there, he walks 3 kilometres towards South. Then, he walks 3 kilometres towards East. How far and in which direction is he with reference to his starting point?

(A) 5 km West
(B) 5 km North-East
(C) 7 km East
(D) 7 km West

**Q4** Varsha walks 140 metres towards west, then turns to her right and walks 140 metres and then turns to her left and walks 100 metres. Again, turning to her left, she walks 140 metres. What is the shortest distance (in metres) between her starting point and the present position?

(A) 100 (B) 240
(C) 280 (D) 380

**Directions (5-6) Read the following passage and answer the given questions.**
**Direction for the next 2 (two) items: Answer the questions based on the information given below.**
Vertical line is drawn from 'H' to 'I'; 'I' is in North of 'H'. Horizontal line is drawn from 'G' to 'F'; 'F' is in East of 'G'. 'B' is midpoint of both the lines. 'A' is 5 m North to 'G'. 'E' is 5 m West to 'H'. 'D' is 5 m South to 'F'. 'C' is 5 m East to 'I'. Length to GF and HI is same i.e., 10 m.

**Q5** In which direction is point 'G' with respect to 'C'?

(A) North-East (B) North-West
(C) South-East (D) South-West

**Q6** In which direction is point I with respect to 'F'?

(A) North-East (B) North-West
(C) South-East (D) South-West

**Directions (7-9) Read the following passage and answer the given questions.**
**Direction for the next 3 (three) items: Answer the questions based on the information given below.**
**In the following questions, the symbols $, %, & and * are used with the following meanings as illustrated below:**
Study the give information and answer the following questions:
Note: The directions which are given indicate exact directions.
Y$Z–Z is in the South direction of Y at distance of 5 m.
Y%Z–Z is in the North direction of Y at distance of 4 m.
Y&Z–Z is in the East direction of Y at distance of 3 m.
Y*Z–Z is in the West direction of Y at distance of 6 m.
Y$*Z–Z is in the South-West direction of Y.
Y%&Z–Z is in the North-East direction of Y.

**Q7** If F&C$B*D$E is true, then find the shortest distance between E and F?

(A) $2\sqrt{10}$ m (B) $\sqrt{103}$ m

(C) $5\sqrt{5}$ m (D) $\sqrt{109}$ m

**Q8** If A*B%C&D is true, then find the shortest distance between 'D' and 'A'?

(A) 8 m (B) 5 m

(C) $\sqrt{14}\ m$ (D) 7 m

**Q9** C%&H%I&R, then 'R' is in which direction with respect to 'C'?

(A) North-East (B) North

(C) South-West (D) South-East

**Q10** Point 'B' is 12 m to the West of point 'A'. Point 'C' is 4 m to the North of point 'B'. Point 'D' is 18 m to the South of point 'E'. Point 'F' is 6 m to the West of point 'D'. Point 'A' lies exactly between point 'E' and point 'D'.

What is the shortest distance between point 'B' and point 'E'?

(A) 10 m (B) 12 m

(C) 15 m (D) 17 m

# Answer Key

| | | | |
|---|---|---|---|
| Q1 | (A) | Q6 | (B) |
| Q2 | (D) | Q7 | (D) |
| Q3 | (B) | Q8 | (B) |
| Q4 | (B) | Q9 | (A) |
| Q5 | (D) | Q10 | (C) |

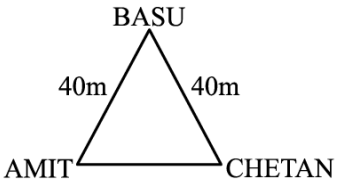
# Hints & Solutions

**Q1 Text Solution:**

**Ans: (a)**

**Explanation:**

It is given that Amit is 40 m South - West of Basu and Chetan is 40 m South - East of Basu.




We can clearly see that Chetan is in East of Amit.

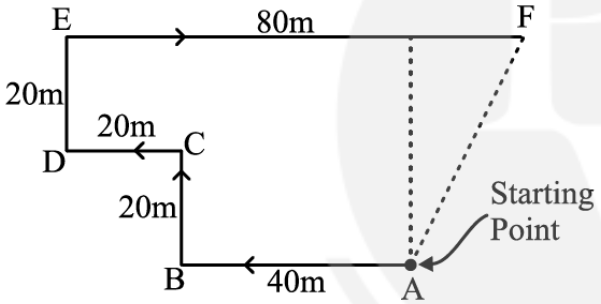
**Hence, option (a) is correct.**

**Q2 Text Solution:**

**Ans: (d)**

**Explanation:**

The movement of Rahul are from A to F, as shown in the figure.




Clearly, the final position of Rahul is F which is North-East of the starting point A.

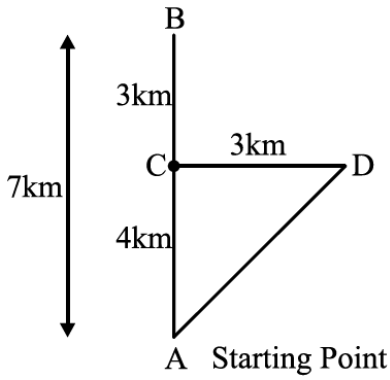
**Hence, option (d) is correct.**

**Q3 Text Solution:**

**Ans: (b)**

**Explanation:**

Let the starting point is A and from there Sahil walks 7 km towards North and reach at point B and from there he walks 3 km towards south and reach at point C and then walks 3 km towards East and reach at point D.




Using Pythagoras theorem in triangle ACD,

$AD^2 = AC^2 + CD^2$

$AD^2 = 4^2 + 3^2$

$AD^2 = 16 + 9$

$AD^2 = 25$

$AD = 5$

So, Sahil is 5 km North - East from starting point.

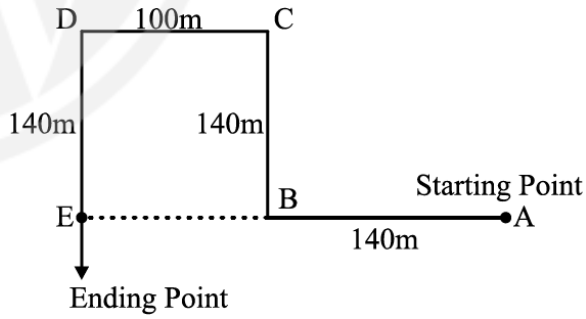
**Hence, option (b) is correct.**

**Q4 Text Solution:**

**Ans. (b)**

**Explanation:**

The movements of Varsha are clearly shown in the figure from A to E.




Varsha's distance from the starting position = AE = $AB + BE = AB + CD$ = 140 + 100 = 240 $m$

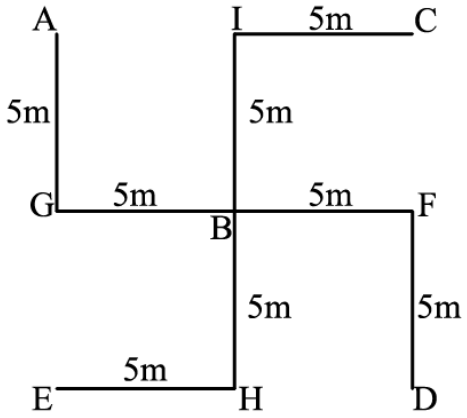
**Hence, option (b) is correct.**

**Q5. Text Solution:**

**Ans: (d)**

**Explanation:**

Following diagram can be drawn based on information provided above:




As we can clearly see that, 'G' is South-West of 'C'.

**Hence, option (d) is correct.**

**Q6. Text Solution:**

**Ans: (b)**

**Explanation:**

As we can clearly see from the diagram, 'I' is North-west of 'F'.

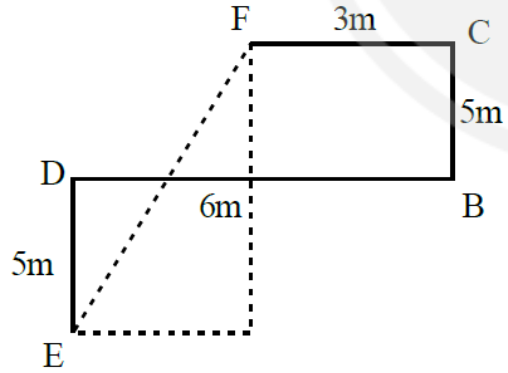
**Hence, option (b) is correct.**

**Q7. Text Solution:**

**Ans: (d)**

**Explanation:**

Using the given directions F&C$B*D$E, we make the following path.




The shortest distance between E and F is EF.

Using Pythagoras Theorem,

$EF^2 = (6 - 3)^2 + (5 + 5)^2 = 3^2 + 10^2$

$= 9 + 100 = 109$

$\mathrm{EF} = \sqrt{109}\ \mathrm{m}$

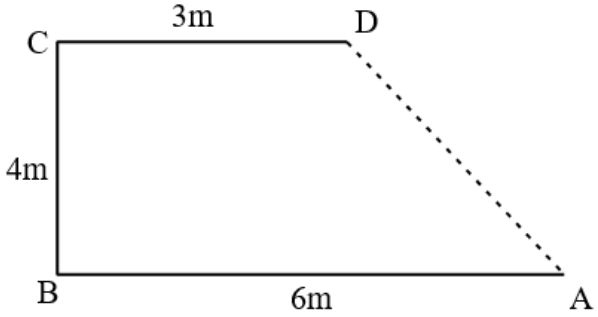
**Hence, option (d) is correct.**

**Q8. Text Solution:**

**Ans: (b)**

**Explanation:**

Using the given directions if A*B%C&D, we make the following path.




We have to find the shortest distance between D and A.

Using Pythagoras Theorem,

$DA^2 = 4^2 + (6 - 3)^2 = 16 + 9 = 25$

DA = 5 m

So, the shortest distance between 'D' and 'A' = 5 m.

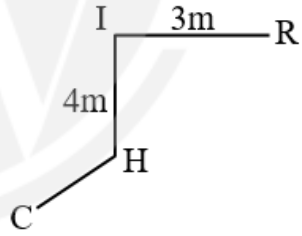
**Hence, option (b) is correct.**

**Q9. Text Solution:**

**Ans: (a)**

**Explanation:**

Using the given directions C%&H%I&R, we make the following path.




We can clearly see that 'R' is in North-East of 'C'.

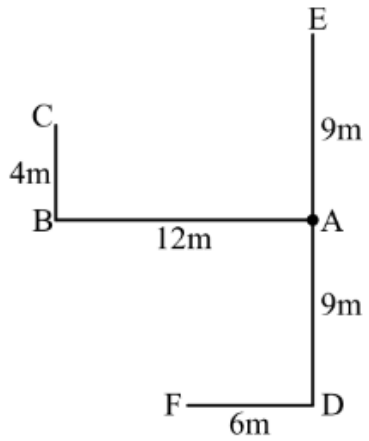
**Hence, option (a) is correct.**

**Q10 Text Solution:**

**Ans: (c)**

**Explanation:**

Using the given information, we can make the following diagram.




We have to find the shortest distance between points 'B' and 'E'.

Using Pythagoras theorem,

$\mathrm{BE}^2 = \mathrm{BA}^2 + \mathrm{AE}^2$ = 144 + 81 = 225

$\mathrm{BE} = \sqrt{225}$

$\mathrm{BE} = 15\ \mathrm{m}$

So, the shortest distance between point 'B' and point 'E' = 15 m

**Hence, option (c) is correct.**