Direction (1-3): Study the following information carefully and answer the questions given below.

A%B (7)- A is 12m in north of B
A$B (12)- A is 17m in south of B
A#B (32)- A is 37m in east of B
A&B (14)- A is 19m in west of B
M%K (33), J#K (9), G%J (19), H&G (23), N$H (25)

1. K is in which direction with respect to G?
(**A**) North   (**B**) West
(**C**) North-west   (**D**) East
(**E**) South-west

2. If Z is the midpoint of the line formed between H and G, then what is the distance between H and Z?
(**A**) 12m   (**B**) 14m
(**C**) 16m   (**D**) 17m
(**E**) 30m

3. If X is in west of J and lies on the line formed by H and N, then what is the distance between X and N?
(**A**) 10m   (**B**) 24m
(**C**) 6m   (**D**) 16m
(**E**) 14m

4. **Direction:** Read the following information carefully and answer the question that follow:
The coding language used to indicate the positions of points is as follows:
P 20@ Q means P is 5 m north to the point Q
P 7$ Q means P is 22 m east to the point Q
P 30% Q means P is 15 m south to the point Q
P 9& Q means P is 24 m west to the point Q
P 3@ Q means P is 18 m north to the point Q
P 20$ Q means P is 5 m east to the point Q

P 20* Q means P is 5 m northeast to the point Q
P 17# Q means P is 22 m southwest to the point Q
A 28@B, B 9% C, C 7$ D, D 26%E, E 18& F, F 11&G, G 24& H.
Which of the following is true?
(**A**) F 5* A   (**B**) C 9@ B
(**C**) A 7$ B   (**D**) G 12@ D
(**E**) None of the above

Direction (5-7): Read the following information carefully and answer the given questions.

A @ B means A is to the north of B at a distance of either 7 m or 12 m
A # B means A is to the west direction of B at a distance of either 5 m or 14 m
A $ B means A is to the south direction of B at a distance of either 7 m or 12 m
A & B means A is to the east direction of B at a distance of either 5 m or 14 m
A @& B means A is to the north-east of B
A $& B means A is to the south-east direction of B
Statement
A@B, B#C, C$D@&A, D#E@F@&C, F@G$&C, G&H$C

5. In which direction is B with respect to G?
(**A**) North   (**B**) East
(**C**) North-East   (**D**) North-West
(**E**) None of these

6. If distance between B and C is same as the distance between D and E and this distance is less than the distance between A and B then what is the shortest distance between C and E.
(**A**) 13 m   (**B**) 28 m
(**C**) Either a or b (**D**) 5 m

(E) 14 m

7. What is the total distance between E and G?
(A) 12 m   **(B)** 17 m
(C) 19 m   **(D)** 21 m
(E) None of these

Direction (8-12): In the following questions, the symbols #, &, @ and $ are used with the following meanings as illustrated below. Study the following information and answer the given questions:

Note: The directions which are given indicates exact directions.
P#Q - Q is in the south direction of P.
P@Q - Q is in the north direction of P
P&Q - Q is in the east direction of P at distance of either 12m or 6m
P$Q - Q is in the west direction of P at distance of either 15m or 3m.
P#&Q - Q or P is in the southeast direction of P or Q.
P@&Q - P or Q is in the northeast direction of Q or P.

8. If A&B#&C$D&E@F are related to each other such that F is placed exactly between A and B on line AB. Similarly D and A are vertically inline then what is the possible shortest distance between F and B when DE (length of segment DE) < DC/2 and EC< 10m?
(A) 12m   **(B)** 5 m
(C) 4 m   **(D)** 6m
(E) None of these

9. If A&B#&C$D&E@F are related to each other such that D@&B then what is the probable direction of A with respect to F?
(A) North-west   **(B)** West
(C) South-west   **(D)** east
(E) Can't be determined

10. K#&T$M#&S&K&Z are related to each other such that K is in north of M then what is the probable direction of Z with respect to M?
(A) North-east   **(B)** West
(C) South-west   **(D)** east
(E) Can't be determined

11. K#&T$M#&S&K&Z are related to each other such that K is in north of M . M and K are inline vertically when MT>SK then what is the distance between S and Z When KZ=12 m?
(A) 24m
(B) 18m
(C) 15m
(D) Either (A) or (B)
(E) None of these

12. K#&T$M#&S&K&Z are related to each other such that K is in north of M . M and K are inline vertically when MT>SK then what is the sum of SK and MT?
(A) 27m   **(B)** 21m
(C) 15m
(D) Either (A) or (B)
(E) Either (B) or (C)

13. P@Q means the person is turning to his right side from point P and reaching point Q
P # Q means the person is turning to his left side from point P and reaching point Q
P@5Q means the person is turning to his right side from point P and after walking for 5 km reaches point Q
A person standing at A is looking in the North direction.
A@5B, B@6C, C#8D
What is the direction of starting point with respect to the end point?
(A) North – West   **(B)** South – West
(C) South   **(D)** North
(E) None of These

Direction (14-16): Study the following information carefully and answer the question based on it.

If A # B: B is 5 m to the right of A.
If A $ B: B is 5 m to the south of A.
If A @ B: B is 5 m to the left of A.
If A % B: B is 5 m to the north of A.
Assume that the first person is facing towards north.

14. If J @ K % M % L # W, How far is W with respect to J?
(**A**) 5 m   (**B**) 20 m
(**C**) 10 m   (**D**) 15 m
(**E**) 25 m

15. If M % N @ O $ P, in which direction is P with respect to M?
(**A**) West   (**B**) South
(**C**) East   (**D**) South-west
(**E**) North

16. If U % V # W # R % S, then which of the following is definitely true?
(**A**) R # V   (**B**) U @ V
(**C**) V $ U   (**D**) W $ S
(**E**) None of these

Direction (17-18): Study the following information carefully and answer the questions given below:

A & B means A is 15 m to the north of B
A @ B means A is 23 m to the east of B
A # B means A is 20 m to the south of B
A % B means A is 12 m to the west of B

17. If P % Q # R & S @ T # U is true and Point X is 5m to the south of T, then what is the shortest distance between point X and point P?

(**A**) 6m   (**B**) 8m
(**C**) 10m   (**D**) 11m
(**E**) None of these

18. What is the shortest distance between Point P and Point S?
(**A**) 11m   (**B**) 12m
(**C**) 13m   (**D**) 14m
(**E**) None of these

Direction (19-20): Study the following information carefully and answer the questions.

Clubs (♣), diamonds (♦), hearts (♥) and spades (♠)
A ♠ B means A is to the East of B
A ♦ B means A is to the West of B
A ♥ B means A is to the North of B
A ♣ B means A is to the South of B
There are 3 buses travelling from Z to Y.
Bus 1: K 15 ♦ Z, J 10 ♣ K, M 10 ♦ J, D 18 ♥ M, C 29 ♠ D, P 9 ♥ C, Y 4 ♦ P
Bus 2: E 36 ♣ Z, F 6 ♦ E, G 14 ♥ F, H 19 ♦ G, L 39 ♥ H, Y 25 ♠ L
Bus 3: N 33 ♠ Z, Q 4 ♥ N, S 9 ♦ Q, T 4 ♥ S, C 20 ♦ T, U 4 ♦ C, U 4 ♣ V, Y 5 ♥ V

19. What is the distance between L and P?
(**A**) 29m   (**B**) 39m
(**C**) 30m   (**D**) 40m
(**E**) None of these

20. What is the shortest distance and direction of Y with respect to E?
(**A**) 49m, South   (**B**) 55m, West
(**C**) 53m, North   (**D**) 45m, East
(**E**) None of these