

FIITJEE INTERNAL MOCK TEST-1 PART TEST – I

for

Mukhyamantri Vigyan Pratibha Pariksha **(All Class IX Batches)**

(MAT)

Time: 120 Minutes

Maximum Marks: 100

Please read the instructions carefully.

INSTRUCTIONS

A: General :

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball point pen.
2. Use **Blue/Black Ball Point Pen only** for writing particulars on **Side-1** and **Side-2** of the Answer Sheet. **Use of pencil is strictly prohibited.**
3. Darken the appropriate bubbles with **HB Pencil** only.
4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed.
5. The answer sheet, a machine-gradable Objective Response Sheet (ORS) is provided separately.
6. Do not Tamper/mutilate the **ORS** or this booklet.
7. No additional sheets will be provided for rough work
8. On completion of this test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. **However, the candidates are allowed to take away this Test Booklet with them.**

B: Questions paper format and Marking Scheme :

1. The question paper consists of *100 questions*.
2. For each question you will be **awarded 1 mark** if you darken the bubble corresponding to the correct answer and zero mark if no bubbles is darkened or your response is incorrect.

Enrollment No. : Batch : _____

Name : _____

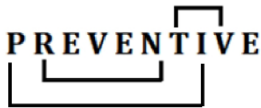
Candidate's Signature _____ Invigilator's Signature: _____

MVPP-Part Test-1-MAT

1. In a certain code language 'DOME' is written as '8943', and 'MEAL' is written as '4321'. What group of letters can be formed for the code '38249'?
- (A) EOADM (B) MEDOA
(C) EMDAO (D) EDAMO

1. D
Sol. If DOME = 8943, MEAL = 4321, 38249 = EDAMO

2. How many such pairs of letters are there in the word "PREVENTIVE", each of which has as many letters between them in the word as in the English alphabet?
- (A) One (B) Two
(C) Three (D) More than three

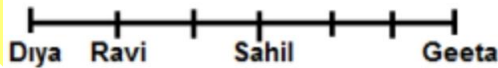
2. C
Sol. 

Directions (3–7): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statement are sufficient to answer the question. Read both the statements and given answer:

- (A) If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
- (B) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
- (C) If the data even in both statements I and II together are not sufficient to answer the question.
- (D) If the data in both statement I and II together are necessary to answer the question.

3. All the persons who are sitting in a row facing north direction. Who sits immediate to the left of Ravi, who is sitting in row?
- I. There are only two persons sitting between Sahil and Geeta. More than three persons sit to the left of Geeta.
- II. Not more than 8 persons can sit in a row. Ravi sits second to the left of Sahil. Diya sits sixth to the left of Geeta.

3. D
Sol. From both the statements I and II we can find that Diya sits immediate to the left of Ravi.



4. Some persons are sitting in a row, all are facing north. How many persons are sitting in a row?
- I. Raman sits second to the right of Mohit, who sits fifth from the right end of the row.
- II. Only one person sits between Mohit and Riya. No one sits to the left of Riya.

4. D
Sol. By combining both the statements together we can find that 7 persons can sit in a row.
Riya ___ Mohit ___ Raman ___

5. How is 'some' written in a code language?
- I. 'some might procedure' is written as 'xm nu zx' and 'might would fight' is written as 'zx zy iz' in that code language.
- II. 'some iconic procedure' is written as 'xm nu zm' in that code language.

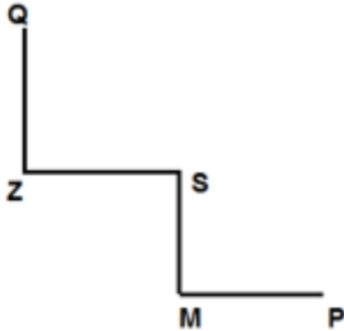
5. C
Sol. From statement I- code of 'some' may be xm/nu.
From statement II- we cannot find exact code of 'some'.

MVPP-Part Test-1-MAT

6. Point P is towards which direction from point Q?
 I. Z is in south of Q and west of S, which is in north of M.
 II. M is south of S and west of P.

6. D

Sol. From both the statements we can find that P is in south-east of Q.



7. P, Q, R, S, T, U are earning different salaries, who among them gets lowest salary?
 I. P earns more than S and T both but less than Q.
 II. R earns more than U but less than S.

7. C

Sol. From both the statements we cannot find that who gets lowest salary, either T or U gets lowest salary.

Directions (8–12): In each of the following question below is given a group of letters followed by three combinations of digits/symbols numbered (A), (B) and (C). You have to find out which of the combinations correctly represents the group of letters based on the following coding system and mark the number of that combination as the answer. If none of the three combinations correctly represents the group of letters, mark (D), i.e. 'None of these', as the answer Note: More than one condition may apply.

Letter	R	G	F	A	P	Q	U	M	E	I	B	J	S	O	L
Codes	#	2	7	μ	%	3	&	9	1	@	5	©	6	8	\$

Conditions:

- (i) If first letter is vowel and last letter is consonant then both are coded with the code of the consonant.
- (ii) If both the 2nd and the last letter is vowel, then their codes are to be interchanged.
- (iii) If the second letter is a consonant and the 2nd last letter is a vowel, both are to be coded as the code for the vowel.
- (iv) If both 1st and fifth letter is consonant then both are coded as the code of third letter.
- (v) If only one condition is applied among the above given, then the code of first letter is interchanged with code of second letter and third letter code interchanged with 4th letter and so on after that applied condition.

8. URBSAQ
 (A) 3#65#3
 (B) 3μ56μ3
 (C) &μ65μ&
 (D) None of these

8. B

Sol. Condition (i) and (iii) is applied

9. LIFPRE
 (A) 771%7@
 (B) 717%@7
 (C) 717%7@
 (D) None of these

9. C

Sol. Condition (ii) and (iv) is applied

10. EUMRJA
 (A) μ1#9&©
 (B) 1μ9#©&
 (C) 9#1μ©&
 (D) None of these

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10. A
Sol. Condition (ii) and (v) is applied

11. MJGLBF
(A) %3%6%7 (B) 3#6%7@
(C) 3%6%7# (D) None of these

11. D
Sol. Condition (iv) and (v) is applied

12. LRQBJ5
(A) %53328 (B) #33536
(C) #35363 (D) None of these

12. C
Sol. Condition (iv) and (v) is applied

Directions (13–17): Study the following information carefully to answer the given questions:

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule.

The following is an illustration of input and rearrangement.

INPUT - 4528 6720 5329 4819 8104 1469

STEP I - 5482 7602 3592 8491 1840 4196

STEP II - 1840 3592 4196 5482 7602 8491

STEP III - 84 59 19 48 60 49

STEP IV - 12 14 10 12 6 13

STEP V - 6 7 5 6 3 6.5

Step V is the last step of the rearrangement. As per the rules followed in the above steps, find out in each of the following questions the appropriate steps for the given input.

Input: 2193 8763 7132 5248 3295 6952

13. What will the addition of the numbers which is third, fifth and sixth from the left end in step IV?
(A) 24 (B) 23
(C) 27 (D) 20

13. C

Sol. In the given Input-output the logic applied is—

For Step I: The first and second digit is interchanged also third and fourth digits are interchanged of each number within the number.

Step II: all the numbers are arranged in ascending order from left end.

Step III: First and last digits are omitted from each number.

Step IV: Sum of the digits of each number.

Step V: Each number is divided by two.

Input: 2193 8763 7132 5248 3295 6952

STEP I: 1239 7836 1723 2584 2359 9625

STEP II: 1239 1723 2359 2584 7836 9625

STEP III: 23 72 35 58 83 62

STEP IV: 5 9 8 13 11 8

STEP V: 2.5 4.5 4 6.5 5.5 4

14. Which of the following would be the difference of the numbers which is 2nd from left end in step I and fourth from right end in Step II?

(A) 6113 (B) 4231
(C) 5477 (D) 5470

14. C

Sol. In the given Input-output the logic applied is—

For Step I: The first and second digit is interchanged also third and fourth digits are interchanged of each number within the number.

Step II: all the numbers are arranged in ascending order from left end.

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Step III: First and last digits are omitted from each number.
Step IV: Sum of the digits of each number.
Step V: Each number is divided by two.
Input: 2193 8763 7132 5248 3295 6952
STEP I: 1239 7836 1723 2584 2359 9625
STEP II: 1239 1723 2359 2584 7836 9625
STEP III: 23 72 35 58 83 62
STEP IV: 5 9 8 13 11 8
STEP V: 2.5 4.5 4 6.5 5.5 4

15. Which of the following element will be 3rd to the left of 5th from the left end in step III?
(A) 35 (B) 72
(C) 23 (D) 58

15. B

Sol. In the given Input-output the logic applied is—
For Step I: The first and second digit is interchanged also third and fourth digits are interchanged of each number within the number.
Step II: all the numbers are arranged in ascending order from left end.
Step III: First and last digits are omitted from each number.
Step IV: Sum of the digits of each number.
Step V: Each number is divided by two.
Input: 2193 8763 7132 5248 3295 6952
STEP I: 1239 7836 1723 2584 2359 9625
STEP II: 1239 1723 2359 2584 7836 9625
STEP III: 23 72 35 58 83 62
STEP IV: 5 9 8 13 11 8
STEP V: 2.5 4.5 4 6.5 5.5 4

16. What will be the multiplication of the numbers which is third from left end of Step V and the number which is first from right end of Step IV?
(A) 56 (B) 32
(C) 36 (D) 48

16. B

Sol. In the given Input-output the logic applied is—
For Step I: The first and second digit is interchanged also third and fourth digits are interchanged of each number within the number.
Step II: all the numbers are arranged in ascending order from left end.
Step III: First and last digits are omitted from each number.
Step IV: Sum of the digits of each number.
Step V: Each number is divided by two.
Input: 2193 8763 7132 5248 3295 6952
STEP I: 1239 7836 1723 2584 2359 9625
STEP II: 1239 1723 2359 2584 7836 9625
STEP III: 23 72 35 58 83 62
STEP IV: 5 9 8 13 11 8
STEP V: 2.5 4.5 4 6.5 5.5 4

17. Which of the following element will be 2nd to the right of 3rd from the left end in step II?
(A) 7836 (B) 4367
(C) 2359 (D) 9625

17. A

Sol. In the given Input-output the logic applied is—
For Step I: The first and second digit is interchanged also third and fourth digits are interchanged of each number within the number.
Step II: all the numbers are arranged in ascending order from left end.
Step III: First and last digits are omitted from each number.
Step IV: Sum of the digits of each number.
Step V: Each number is divided by two.

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Input: 2193 8763 7132 5248 3295 6952
STEP I: 1239 7836 1723 2584 2359 9625
STEP II: 1239 1723 2359 2584 7836 9625
STEP III: 23 72 35 58 83 62
STEP IV: 5 9 8 13 11 8
STEP V: 2.5 4.5 4 6.5 5.5 4

Directions (18–19): In each question below is given a statement followed by two Assumptions numbered I and II. You have to assume everything in the statement to be true, then consider the two Assumptions together and decide which of them logically implicit beyond a reasonable doubt from the information given in the statement.

18. **Statement:**

World Health Organisation has decided to double its assistance to various health programmes in India as per-capita expenditure on health in India is very low compared to may other countries.

Assumptions:

I. The enhanced assistance may substantially increase the per capita expenditure on health in India and bring it on par with other countries.

II. The Government funding is less than adequate to provide medical facilities in India.

(A) Only I is implicit

(B) Only II is implicit

(C) Neither I nor II is implicit

(D) Both I and II are implicit

18. D

Sol. The fact that WHO has extended its assistance to India implies that government funding here is not adequate. So, II is implicit. Besides, WHO has decided to provide assistance to health programmes in India keeping in mind the considerably low per-capita expenditure on health. So, I is also implicit.

19. **Statement:**

“A visit of school children to forest to widen their knowledge of natural resources has been arranged.” – A notice in the school.

Assumptions:

I. Forests are full of natural resources.

II. Children are likely to learn from their interaction with the new environment.

(A) Only I is implicit

(B) Only II is implicit

(C) Neither I nor II is implicit

(D) Both I and II are implicit

19. D

Sol. The forests shall be visited to increase the knowledge of natural resources. This means that forests abound in natural resources. So, I is implicit. The children are being taken to forests to help them learn more practically. So, II is also implicit.

Directions (20–24): These questions are based on the following six numbers.

412 646 734 255 536 876

20. If we add 2 to the second digit of each number and subtract 1 from the first digit of each number, then which of the given will become the lowest number?

(A) 646

(B) 536

(C) 255

(D) 412

20. C

Sol. 412 646 734 **255** 536 876

332 566 654 **175** 456 796

21. If all the digits in each of the numbers are written in increasing order within the number, than which of the given number will become the second highest?

(A) 412

(B) 646

(C) 255

(D) 536

21. B

Sol. 412 **646** 734 255 536 876

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124 466 347 255 356 678

22. If the first two digits of each number are interchanged, then which of the following numbers will become the highest number?

- (A) 734 (B) 536
(C) 646 (D) 876

22. D

Sol. 412 646 734 255 536 876
142 466 374 525 356 786

23. In each number, if we subtracted 1 in first digit and added 1 in last digit, then which among these number will be 2nd lowest number?

- (A) 734 (B) 255
(C) 876 (D) 412

23. D

Sol. 412 646 734 255 536 876
313 547 635 156 437 777

24. If we replace all the odd digits in each number with zero, then which of the following number will become the lowest?

- (A) 734 (B) 536
(C) 412 (D) 876

24. A

Sol. 412 646 734 255 536 876
402 646 004 200 006 806

25. Each vowel in the word SURROUND is changed to the next letter in the English alphabet and each consonant is changed to the previous letter in the English alphabet. Which of the following will be the second from the right end in the new arrangement?

- (A) M (B) C
(C) V (D) P

25. A

Sol. S U R R O U N D
R V Q Q P V M C

26. The positions of the first and the second digits of the number 54378926 are interchanged. Similarly, the positions of the third and the fourth digits are interchanged and so on. Which of the following will be the sixth digit from the left end after the rearrangement?

- (A) 6 (B) 8
(C) 9 (D) 7

26. B

Sol. 5 4 3 7 8 9 2 6
4 5 7 3 9 8 6 2

27. If it is possible to make only one meaningful word with the first, third, fifth and the ninth letters of the word 'CURVATURE', which would be the second letter of the word? If more than one such word can be formed, give X as the answer. If no such word can be formed, give K as your answer.

- (A) R (B) C
(C) X (D) E

27. C

Sol. CURVATURE. The letter is = C, R, A, E
We can form two words from above letter = RACE, CARE, ACRE

Directions (28–30): Study the following information to answer the given questions:

Given

A*B means B is 2m east to A

A@B means B is 1m west to A

A#B means B is 2m south to A

A%B means B is 1m north to A

If T#R, Q@P, S*R, Q%S, S%U, holds true, then

28. In which direction is T with respect to U?

(A) South west

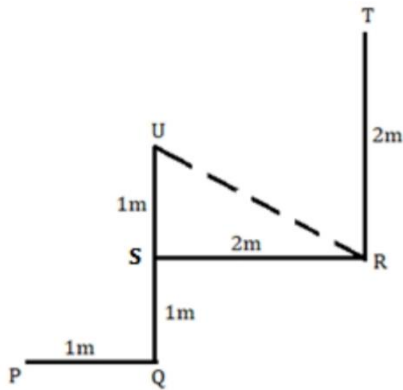
(B) North east

(C) South east

(D) North west

28. B

Sol.



29. In which direction is P with respect to R?

(A) South west

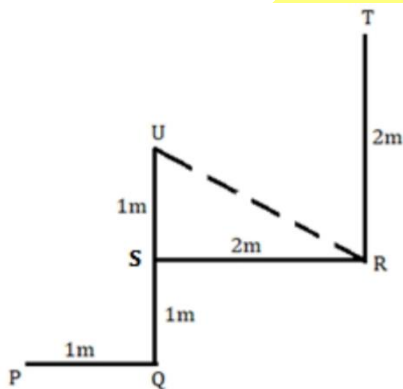
(B) North east

(C) South east

(D) North west

29. A

Sol.



30. What is the shortest distance U and R?

(A) 5m

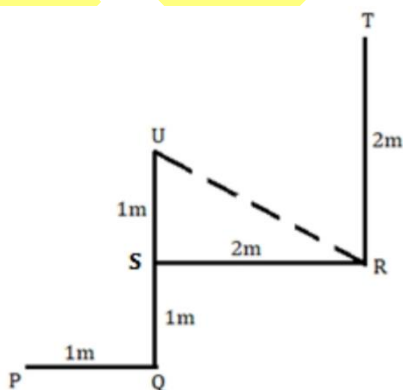
(B) 3m

(C) 4m

(D) None of these

30. D

Sol.



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31. In a certain code language, 'Mink Young Pe' means 'Fruits are ripe'; 'Pe Lao may Mink' means 'Oranges are not ripe' and 'May Pe Nue Mink' means 'Mangoes are not ripe'. Which word in that language means 'Mangoes'?
- (A) May (B) Lao (C) Nue (D) Mink

31. C

Sol. Mink Young Pe → Fruits are ripe
 Pe Lao May Mink → Oranges are not ripe
 May Pe Nue Mink → Mangoes are not ripe
 From statements coded (i) and (ii). Pe mink means are ripe and from statement (ii) and (iii) may means not, so pe mink may means are not ripe and finally from Statement (iii) neu will be mangoes.

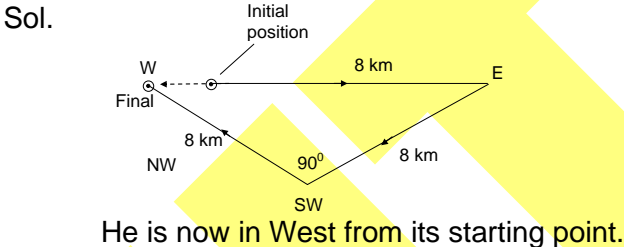
32. If in a certain language, 'oka peru' means 'fine cloth'; 'meta lisa' means 'clear water' and 'dona lisa peru' means 'fine clear weather', which word in that language means 'weather'?
- (A) peru (B) oka (C) meta (D) dona

32. D

Sol. Find cloth – Oka peru ... (i)
 Fine clear weather – dona lisa peru ... (ii)
 ⇒ fine = peru
 By statement (i) and (ii), clear = lisa
 From statement (ii) and (iii) 'Lisa' means 'clear' and from statement (i) and (iii), 'Peru' means 'fine', so 'weather' will be 'dona' with the help of statement (iii).

33. Lalit walks 8 km East, turns South – West and walks another 8 km. He again takes a turn towards North – West and walks another 8 km. In which direction from his starting point, is he standing now?
- (A) North – East (B) South – East (C) West (D) East

33. C



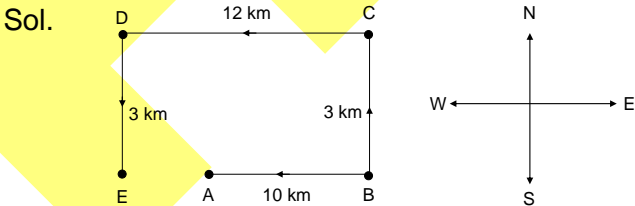
He is now in West from its starting point.

Directions (34–35): Study the information given below carefully and answer the questions that follow.

Anshu started from 'A' and walked 10 km Eastwards to reach 'B', then turned to North and walked 3 km to reach 'C' and then turned West and walked 12 km to reach 'D'. He then again turned South and walked 3 km to reach 'E'.

34. How far is Anshu from his starting point?
- (A) 2 km (B) 3 km (C) 1 km (D) 2.5 km

34. A



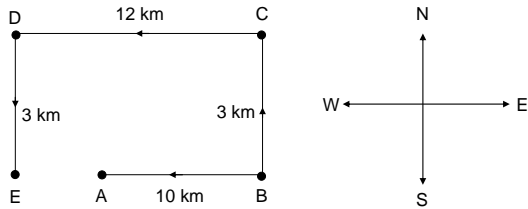
Obviously, Anshu is 2 km West from A, starting point.

35. In which direction is Point 'E' from point 'A'?
- (A) East (B) West (C) North (D) South

35. B

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Sol.



36. In a certain code language, if the word 'PARTNER' is coded as OZQSMDQ, then what is the code for the word 'SEGMENT' in that language?

- (A) TFHNFOU (B) RDFLDMS (C) RDELDMS (D) RDFEDNS

36. **B**

Sol. Word: P A R T N E R
 Logic: -1 -1 -1 -1 -1 -1 -1
 Code: O Z Q S M D Q
 Similar the code for SEGMENT is
 Word: S E G M E N T
 Logic: -1 -1 -1 -1 -1 -1 -1
 Code: R D F L D M S

37. In a certain code language, if the word 'RECTANGLE' is coded as TGEVCPING, then how is the word 'RHOMBUS' coded in that language?

- (A) TJOQDWV (B) TJQNDWU (C) TJQODWU (D) TJQOEWU

37. **C**

Sol. Word: R E C T A N G L E
 Logic: +2 +2 +2 +2 +2 +2 +2 +2 +2
 Code: T G E V C P I N G
 Similarly, the code for RHOMBUS is
 Word: R H O M B U S
 Logic: +2 +2 +2 +2 +2 +2 +2
 Code: T J Q O D W U

38. In a certain code language, if the word 'SPHERE' is coded as EREHPS, then how is the word 'EXHIBITION' coded in that language?

- (A) NOTIBIHXE (B) NOITIDIHXE (C) NOITIBIHWE (D) NOITIBIHXE

38. **D**

Sol. Word: S P H E R E
 Logic: The letters in the given word are reversed.
 Code: E R E H P S
 Similarly, the code for EXHIBITION, is
 Word: E X H I B I T I O N
 Logic: The letters in the given word are reversed.
 Code: N O I T I B I H X E

39. In a certain code language if the word 'IMPRESSION' is coded as IPESOMRSIN, then how will you code the word 'SIGNIFICANT'?

- (A) SGIAITINFIN (B) SGIATINFCN (C) SGTIAIINFCN (D) SGAITINIFCN

39. **B**

Sol. In this alternate letters starting from the first are written followed by the remaining letters. So, SIGNIFICANT is written as SGIATINFCN.

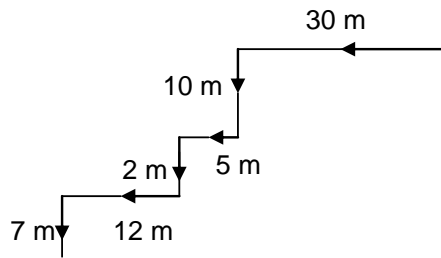
40. My dog Boxer, runs 30 m towards west, turns left and runs 10 m, then turns right, and runs 5 m, then turns left and runs 2 m and again turns right, runs 12 m. Finally it turns left and runs 7 m. In which direction is it running now?

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

40. **D**

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Sol.

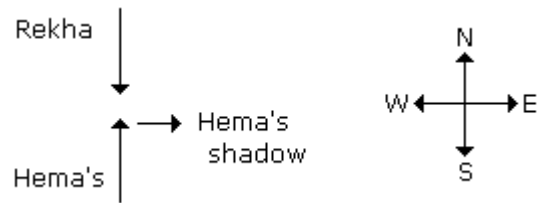


It is running in south direction now.

41. One evening before sunset Rekha and Hema were talking to each other face to face. If Hema's shadow was exactly to the right of Hema, which direction was Rekha facing?
 (A) North (B) South
 (C) East (D) Data is inadequate

41. B

Sol.



In the evening sun sets in West. Hence then any shadow falls in the East. Since Hema's shadow was to the right of Hema. Hence Rekha was facing towards South.

42. One morning after sunrise, Vimal started to walk. During this walking he met Stephen who was coming from opposite direction. Vimal watch that the shadow of Stephen to the right of him (Vimal). To Which direction Vimal was facing?
 (A) East (B) West
 (C) South (D) Data inadequate

42. C

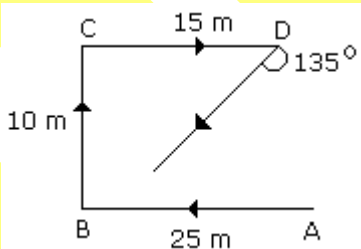
Sol.

Sun rises in the east. So the shadow of a man will always falls towards the west. Since the shadow of Stephen is to the right of Vimal. Hence Vimal is facing towards South.

43. P started from his house towards west. After walking a distance of 25 m. He turned to the right and walked 10 m. He then again turned to the right and walked 15 m. After this he is to turn right at 135° and to cover 30 m. In which direction should he go?
 (A) West (B) South
 (C) South-West (D) South-East

43. C

Sol.



Hence he should go in the South-West direction.

44. In a certain code language, the letters in the English alphabet are coded as follows, based on their place values. Each letter with a multiple of 2 as place value are given 1 as code, and the ones with a multiple of 3 as place value are given 2 as code, in case of a clash, 1 prevails and the rest of the letters are given 3 as code. Then what is the code for the word ALPHABET?

- (A) 31313113 (B) 31113131 (C) 13331313 (D) 31131131

44. B

Sol.

In this coding, the code for the letters B, D, F, H, J, L, N, P, R, T, V, X and Z is 1. The code for the letters C, I, O and U is 2.

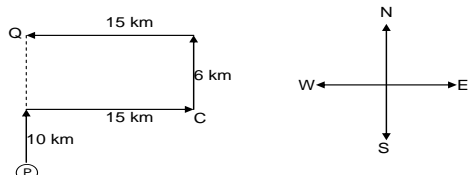
MVPP-Part Test-1-MAT

The code for the letters A, E, G, K, M, Q, S, W and Y is 3.
Hence, the code for ALPHABET is 31113131.

Direction (45–46): Study the following information carefully to answer these questions.
A vehicle starts from point P and runs 10 km towards North. It takes a right turn and runs 15 km. It now runs 6 km after taking a left turn. It finally takes a left turn, runs 15 km and stops at point Q.

45. How far is point Q with respect to point P?
(A) 16 km (B) 25 km (C) 4 km (D) 0 km

45. A
Sol



Distance between points P and Q = 10 + 6 = 16 km

46. Towards which direction was the vehicle moving before it stopped at point Q?
(A) North (B) East (C) South (D) West

46. D
Sol.

Vehicle is in the West direction when it finally stopped

47. How many such pairs of letters are there in the word "REASONING" which has as many letters between them in the words as in the English alphabet?

- (A) 1 (B) 2
(C) 3 (D) 4

47. C

Sol. The pairs that has as many letters between them in the words as in the English alphabet are-ON, GI, AG. So there are three pairs of such alphabets in the word.

48. How many such pairs of letters are there in the word "CHANNEL" which has as many letters between them in the words as in the English alphabet?

- (A) 1 (B) 2
(C) 3 (D) 4

48. B

Sol. In the word CHANNEL, there is H between C and A but in English Alphabets there is B between A and C. Similarly in CHANNEL there is E between N and L but in English Alphabets there is M between N and L. So, there are 2 such pairs.

49. How many such pairs of letters are there in the word "CASTRAPHONE" which has as many letters between them in the words as in the English alphabet?

- (A) 5 (B) 7
(C) 6 (D) 8

49. C

Sol. Looking into the alphabets there are six such pairs namely ON, HONE, ST, TRAPHO, TRAPHON, RAP.

1. ON - NO
2. HONE - EFGH
3. ST - ST
4. TRAPHO - OPQRST
5. TRAPHON - NOPQRST
6. RAP - PQR

So, there are 6 such pairs.

MVPP-Part Test-1-MAT

50. How many meaningful English words can be formed from the letter ADRW, using each letter only once in each word?
 (A) None (B) 1
 (C) 2 (D) 3

50. C
 Sol. Required words = DRAW and WARD

51. Two taps A and B can fill a tank in 12 min and 15 min respectively. If both are opened and A is closed after 3 min, then how long will it take for B to fill the rest of the tank?
 (A) 7 min 45 sec (B) 7 min 15 sec (C) 8 min 5 sec (D) 8 min 15 sec

51. D
 Sol. In 1 min (A + B) fill $\frac{1}{12} + \frac{1}{15} = \frac{9}{60}$ part of the tank

In 3 min, they fill $\frac{9}{60} \times 3 = \frac{9}{20}$ part of the tank.

\therefore Rest of the tank = $1 - \frac{9}{20} = \frac{11}{20}$

So, B will fill the rest of the tank in

$$\frac{11}{20} \times \frac{15}{1} = \frac{33}{4} = 8 \text{ min } 15 \text{ sec.}$$

52. A, B and C together can complete a job in 15 days. After working with B and C for 5 days, A leaves and then B and C take 20 days more to finish that Job. In how many days can A complete the job alone?

(A) 25 (B) 27 (C) 32 (D) None of these

52. D
 Sol. As A, B and C together require 15 days to complete the job. So, they can complete $\frac{1}{3}$ rd of the job in 5 days.

Therefore, amount of work left when A leaves is

$$1 - \frac{1}{3} = \frac{2}{3}$$

It is given that B and C together take 20 days for $\frac{2}{3}$ rd work. Therefore, B and C need 30 days to complete the job.

A's 1 day's work

$$= (A + B + C)'s \text{ 1 day's work} - (B + C)'s \text{ 1 day's work}$$

$$= \frac{1}{15} - \frac{1}{30} = \frac{1}{30}$$

\therefore A can finish the work in 30 days.

53. Six men earn as much as 8 women, 2 women earn as much as 3 boys and 4 boys can earn as much as 5 girls. If a girl earns Rs.50 a day, then each man earns

(A) Rs. 115 (B) Rs.135 (C) Rs.125 (D) Rs.150

53. C
 Sol. Initials used
 Man \rightarrow M, Women \rightarrow W, Girl \rightarrow G, Boy \rightarrow B

Now, according to the question

$$6M = 8W$$

$$2W = 3B$$

$$4B = 5G$$

$$\text{Thus, } M = \frac{8}{6} \times \frac{3}{2} \times \frac{5}{4} \times G = \frac{5}{2} \times 50 = \text{Rs.125.}$$

54. A can finish a work in 18 days and B can do the same work in half the time taken by A. Then working together what part of the same work they can finish in a day?

(A) $\frac{1}{6}$ (B) $\frac{2}{5}$ (C) $\frac{1}{9}$ (D) $\frac{2}{7}$

MVPP-Part Test-1-MAT

54. A

Sol. A's 1 day's work = $\frac{1}{18}$
B's 1 day's work = $\frac{1}{9}$
 \therefore (A + B)'s 1 day's work
 $= \frac{1}{18} + \frac{1}{9} = \frac{1+2}{18} = \frac{3}{18} = \frac{1}{6}$

55. 2 men and 3 boys can do a piece of work in 10 days while 3 men and 2 boys can do the same work in 8 days. In how many days can 2 men and 1 boy do the work?

- (A) 8 days (B) 7 days (C) $12\frac{1}{2}$ days (D) 2 days

55. C

Sol. According to the question,
 $20 \text{ men} + 30 \text{ boys} = 24 \text{ men} + 16 \text{ boys}$
 $\therefore 4 \text{ men} = 14 \text{ boys}$
 $\therefore 2 \text{ men} = 7 \text{ boys}$
 $\therefore 2 \text{ men} + 1 \text{ boy} = 8 \text{ boys}$
 $2 \text{ men} + 3 \text{ boys} = 10 \text{ boys}$
 $\therefore M_1 D_1 = M_2 D_2$
 $\Rightarrow 10 \times 10 = 8 \times D_2$
 $\Rightarrow D_2 = \frac{10 \times 10}{8} = \frac{25}{2}$
 $= 12\frac{1}{2}$

Directions (56–57): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.

Read both the statements and give answer:

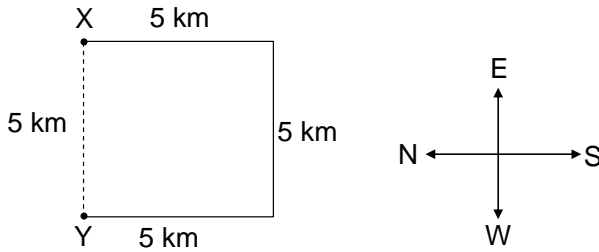
- (A) If the data in Statement-I alone are sufficient to answer the question, while the data in Statement-II alone are not sufficient to answer the question.
(B) If the data in Statement-II alone are sufficient to answer the question, while the data in Statement-I alone are not sufficient to answer the question.
(C) If the data given in both Statement-I and II together are not sufficient to answer the question, and
(D) If the data in both Statement-I and II together are necessary to answer the question.

56. Point X is in which direction with respect to Y?

- I. Point Z is at equal distance from both point X and point Y.
II. Walking 5 km to the East of point X and taking two consecutive right turns after walking 5 kms before each turn leads to point Y.

56. B

Sol. From Statement-I:
Z \rightarrow equidistant from X and Y.
So, directions are unknown.
Therefore, Statement-I is not sufficient.
From Statement-II:
Distances and directions have been given properly.



So, 'X' is to the 'North' of 'Y'.
Therefore, Statement-II is sufficient.

57. How is 'come' written in a code language?
I. 'come and go' is written as 'pit ka ja' in that code language.
II. 'go and tell' is written as 'ja ma ka' in that code language.

57. D

Sol. From Statement-I:

Word	Code	
Come and go	→ pit ka ja	...(i)
go and tell	→ ja ma ka	...(ii)
From (i) & (ii), we get		
and go	→ ka ja	...(iii)
Using (iii) in (i), we get		
'come'	→ ^{code} 'pit'	

Therefore, the data in both the statements I and II together are necessary to answer the given question.

58. Salaries of Ravi and Sumit are in the ratio 2:3. If the salary of each is increased by Rs. 4000, the new ratio becomes 40:57. What is Sumit's salary?
(A) 38000 (B) 46800
(C) 36700 (D) 50000

58. A

Sol. Let the original salaries of Ravi and Sumit be Rs. 2x and Rs. 3x respectively.

Then,

$$\frac{2x + 4000}{3x + 4000} = \frac{40}{57}$$

$$\Rightarrow 57 \times (2x + 4000) = 40 \times (3x + 4000)$$

$$\Rightarrow 6x = 68,000$$

$$\Rightarrow 3x = 34,000$$

$$\text{Sumit's present salary} = (3x + 4000) = \text{Rs.}(34000 + 4000) = \text{Rs. } 38,000$$

Directions (59–60): In each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.

59. What will be the total weight of 10 poles, each of the same weight?
Statements:
I. One-fourth of the weight of each pole is 5 kg.
II. The total weight of three poles is 20 kilograms more than the total weight of two poles.
(A) I alone is sufficient while II alone is not sufficient
(B) II alone is sufficient while I alone is not sufficient
(C) Either I or II is sufficient
(D) Neither I nor II is sufficient

59. C

Sol. From I, we conclude that weight of each pole = (4 x 5) kg = 20 kg.

So, total weight of 10 poles = (20 x 10) kg = 200 kg.

From II, we conclude that:

$$\text{Weight of each pole} = (\text{weight of 3 poles}) - (\text{weight of 2 poles}) = 20 \text{ kg.}$$

MVPP-Part Test-1-MAT

So, total weight of 10 poles = (20×10) kg = 200 kg.

60. On which date of the month was Anjali born in February 2004?

Statements:

I. Anjali was born on an even date of the month.

II. Anjali's birth date was a prime number.

(A) I alone is sufficient while II alone is not sufficient

(B) II alone is sufficient while I alone is not sufficient

(C) Neither I nor II is sufficient

(D) Both I and II are sufficient

60. D

Sol. From I and II, we conclude that Anjali was born in February 2004 on a date which is an even prime number. Since the only even prime number is 2, so Anjali was born on 2nd February, 2004.

61. In a row of girls facing North, Tanu is 10th to the left of Priyanka, who is 21st from the right end. If Twinkle, who is 17th from the left end, is 4th to the right of Tanu, how many girls are there in the row?

(A) Data inadequate

(B) 43

(C) 44

(D) None of these

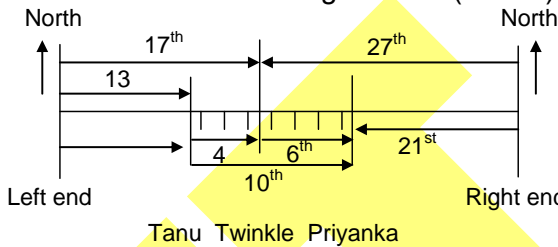
61. B

Sol. Priyanka's rank from the right end = 21st

Tanu's rank from the left end = 13th

Twinkle's rank from the left end = 17th

Twinkle's rank from the right end = $(21 + 6) = 27^{\text{th}}$



So, total number of girls in the given row $(17 + 27) - 1 = 43$.

62. The ratio of speeds of A and B is 4:7 and A loses the race by 270 m, then what is the length of the race course?

(A) 680 m

(B) 720 m

(C) 630 m

(D) 730 m

62. C

Sol. When B moves 7 m, A moves only 4 m. Hence, A loses the race by 3 m.

Now, since B loses by 3 m in the race of 7 m,

\therefore B will lose 270 m in the race of 630 m.

Directions (63–67): Study the following information and answer the questions.

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and arrangement.

Input: 73 52 dreams landmine 19 school flash 27

Step I: 19 73 52 dreams landmine school flash 27

Step II: 19 school 73 52 dreams landmine flash 27

Step III: 19 school 27 73 52 dreams landmine flash

Step IV: 19 school 27 landmine 73 52 dreams flash

Step V: 19 school 27 landmine 52 73 dreams flash

Step VI: 19 school 27 landmine 52 flash 73 dreams

As per rules followed in the above steps, find out in each of the following questions, the appropriate step for the given input.

MVPP-Part Test-1-MAT

Input: alphabet tool 46 72 23 look finder 39

63. Which of the following will be step III?
(A) 23 tool alphabet 46 72 look finder 39 (B) 46 23 tool alphabet 72 look finder 39
(C) 23 46 tool alphabet 72 look finder 39 (D) 23 tool 39 alphabet 46 72 look finder

63. D

Sol. In this input output question, the machine rearranges one number and one word in each alternative step from left to right.

First, it rearranges numbers in ascending order, then.

Words are arranged in reverse alphabetical order according to the first letter.

Input: alphabet tool 46 72 23 look finder 39

Step I: 23 alphabet tool 46 72 look finder 39

Step II: 23 tool alphabet 46 72 look finder 39

Step III: 23 tool 39 alphabet 46 72 look finder

Step IV: 23 tool 39 look alphabet 46 72 finder

Step V: 23 tool 39 look 46 alphabet 72 finder

Step VI: 23 tool 39 look 46 finder alphabet 72

Step VII: 23 tool 39 look 46 finder 72 alphabet

64. Which of the following step will be the penultimate step?
(A) Step I (B) Step VI
(C) Step VII (D) Step V

64. B

Sol. In this input output question, the machine rearranges one number and one word in each alternative step from left to right.

First, it rearranges numbers in ascending order, then.

Words are arranged in reverse alphabetical order according to the first letter.

Input: alphabet tool 46 72 23 look finder 39

Step I: 23 alphabet tool 46 72 look finder 39

Step II: 23 tool alphabet 46 72 look finder 39

Step III: 23 tool 39 alphabet 46 72 look finder

Step IV: 23 tool 39 look alphabet 46 72 finder

Step V: 23 tool 39 look 46 alphabet 72 finder

Step VI: 23 tool 39 look 46 finder alphabet 72

Step VII: 23 tool 39 look 46 finder 72 alphabet

Because penultimate step means second last step.

65. Which step give following output-
"23 tool 39 look 46 alphabet 72 finder"
(A) Step IV (B) Step VI
(C) Step III (D) Step V

65. D

Sol. In this input output question, the machine rearranges one number and one word in each alternative step from left to right.

First, it rearranges numbers in ascending order, then.

Words are arranged in reverse alphabetical order according to the first letter.

Input: alphabet tool 46 72 23 look finder 39

Step I: 23 alphabet tool 46 72 look finder 39

Step II: 23 tool alphabet 46 72 look finder 39

Step III: 23 tool 39 alphabet 46 72 look finder

Step IV: 23 tool 39 look alphabet 46 72 finder

Step V: 23 tool 39 look 46 alphabet 72 finder

Step VI: 23 tool 39 look 46 finder alphabet 72

Step VII: 23 tool 39 look 46 finder 72 alphabet

66. Which element would be at the fifth position from right end in step IV?
(A) 39 (B) 46
(C) alphabet (D) None of these

MVPP-Part Test-1-MAT

66. D

Sol. In this input output question, the machine rearranges one number and one word in each alternative step from left to right.

First, it rearranges numbers in ascending order, then.

Words are arranged in reverse alphabetical order according to the first letter.

Input: alphabet tool 46 72 23 look finder 39

Step I: 23 alphabet tool 46 72 look finder 39

Step II: 23 tool alphabet 46 72 look finder 39

Step III: 23 tool 39 alphabet 46 72 look finder

Step IV: 23 tool 39 **look** alphabet 46 72 finder

Step V: 23 tool 39 look 46 alphabet 72 finder

Step VI: 23 tool 39 look 46 finder alphabet 72

Step VII: 23 tool 39 look 46 finder 72 alphabet

67. How many elements are between '23' and '46' in step VI of the given input?

(A) Three

(B) Two

(C) Four

(D) None of these

67. A

Sol. In this input output question, the machine rearranges one number and one word in each alternative step from left to right.

First, it rearranges numbers in ascending order, then.

Words are arranged in reverse alphabetical order according to the first letter.

Input: alphabet tool 46 72 23 look finder 39

Step I: 23 alphabet tool 46 72 look finder 39

Step II: 23 tool alphabet 46 72 look finder 39

Step III: 23 tool 39 alphabet 46 72 look finder

Step IV: 23 tool 39 look alphabet 46 72 finder

Step V: 23 tool 39 look 46 alphabet 72 finder

Step VI: **23 tool 39 look 46** finder alphabet 72

Step VII: 23 tool 39 look 46 finder 72 alphabet

Directions (68–69): In each question below is given a statement followed by two assumptions numbered I and II. You have to consider the statement and the following assumptions and decide which of the assumptions is implicit in the statement.

Give answer

(A) If only assumption I is implicit

(B) If only assumption II is implicit

(C) If neither I nor II is implicit

(D) If both I and II are implicit

68. Statement: "If you trouble me, I will slap you." - A mother warns her child

Assumptions:

I. With the warning, the child may stop troubling her.

II. All children are basically naughty.

68. A

Sol. The mother warns her child with the expectation that he would stop troubling her. So, I is implicit. The general nature of children cannot be derived from the statement. So, II is not implicit.

69. Statement: It is desirable to put the child in school at the age of 5 or so.

Assumptions:

I. At that age the child reaches appropriate level of development and is ready to learn.

II. The schools do not admit children after six years of age

69. A

Sol. Since the statement talks of putting the child in school at the age of 5, it means that the child is mentally prepared for the same at this age. So, I is implicit. But nothing about admission after 6 years of age is mentioned in the statement. So, II is not implicit.

Direction (70–76): In each question below is given a statement followed by two conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

Give answer:

- (A) If only conclusion I follows
- (B) If only conclusion II follows
- (C) If neither I nor II follows
- (D) If both I and II follow.

70. **Statements:** In a one day cricket match, the total runs made by a team were 200. Out of these 160 runs were made by spinners.

Conclusions:

- I. 80% of the team consists of spinners.
- II. The opening batsmen were spinners.

70. C

Sol. According to the statement, 80% of the total runs were made by spinners. So, I does not follow. Nothing about the opening batsmen is mentioned in the statement. So, II also does not follow.

71. **Statements:** Population increase coupled with depleting resources is going to be the scenario of many developing countries in days to come.

Conclusions:

- I. The population of developing countries will not continue to increase in future.
- II. It will be very difficult for the governments of developing countries to provide its people decent quality of life.

71. B

Sol. The fact given in I is quite contrary to the given statement. So, I does not follow. II mentions the direct implications of the state discussed in the statement. Thus, II follows.

72. **Statements:** The manager humiliated Sachin in the presence of his colleagues.

Conclusions:

- I. The manager did not like Sachin.
- II. Sachin was not popular with his colleagues

72. C

Sol. The manager might have humiliated Sachin not because of his dislike but on account of certain negligence or mistake on his part. So, I does not follow. Also, nothing about Sachin's rapport with his colleagues can be deduced from the statement. So, II also does not follow.

73. **Statements:** Jade plant has thick leaves and it requires little water.

Conclusions:

- I All plants with thick leaves require little water.
- II Jade plants may be grown in places where water is not in abundance.

73. B

Sol. The statement talks of jade plants only and not 'all plants with thick leaves'. So, I does not follow. Also, since jade plants require little water, so they can be grown in places where water is not in abundance. So, II follows.

74. **Statements:** Use "Kraft" colours. They add colour to our life. - An advertisement.

Conclusions:

- I. Catchy slogans do not attract people.
- II. People like dark colours.

74. C

Sol. The slogan given in the statement is definitely a catchy one which indicates that catchy slogans do attract people. So, I does not follow. Nothing about people's preference for colours can be deduced from the statement. Thus, II also does not follow.

MVPP-Part Test-1-MAT

75. **Statements:** Money plays a vital role in politics.

Conclusions:

I. The poor can never become politicians.

II. All the rich men take part in politics.

75. C

Sol. Neither the poor nor the rich, but only the role of money in politics is being talked about in the statement. So, neither I nor II follows.

76. **Statements:** Any student who does not behave properly while in the school brings bad name to himself and also for the school.

Conclusions:

I. Such student should be removed from the school.

II. Stricter discipline does not improve behaviour of the students.

76. C

Sol. Clearly, I cannot be deduced from the statement. Also, nothing about discipline is mentioned in the statement. So, neither I nor II follows

77. Which letter in the word EXPENDITURE occupies the same position as it does in the English alphabet?

(A) E

(B) N

(C) I

(D) None

77. D

Sol. No such letter present in word EXPENDITURE occupies the same position in the English alphabet.

78. In this questions, choose one word which can be formed from the letters of the given word.

INVESTMENTS

(A) Mention

(B) Statement

(C) Invest

(D) Install

78. C

Sol. Invest can be formed from the letters of INVESTMENTS

79. If the letters in the word POWERFUL are rearranged as they appear in the English alphabet, the position of how many letters will remain unchanged after the rearrangement?

(A) None

(B) One

(C) Two

(D) Three

79. B

Sol. Sequence in the word:

P O W E R F U L

Sequence in English alphabet:

E F L O P R U W

Clearly, the position of letter U remains unchanged. Hence, the answer is B.

80. Akash ranks seventh from the top and twenty-sixth from the bottom in a class. How many students are there in the class?

(A) 31

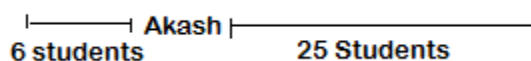
(B) 32

(C) 33

(D) 34

80. B

Sol. Clearly, the whole class consists of:



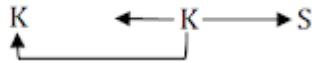
So, total students = $(6 + 1 + 25) = 32$ students.

MVPP-Part Test-1-MAT

81. In a row of 40 girls, when Kanika was shifted to her left by 4 places her number from the left end of the row became 10. What was the number of Swati from the left end of the row if Swati was three places to the right of Kanika's original position?
 (A) 18 (B) 20
 (C) 19 (D) None of these

81. D

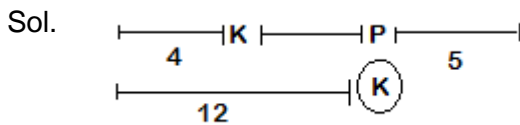
Sol. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17



Swati is 3 places to the right of Kanika's original position.
 Clearly, Swati is 17th from the left end.

82. In a row of girls, Kanya is fifth from the left and Preeti is sixth from the right. When they exchange their positions, then Kanya becomes thirteenth from the left. What will be Preeti's position from the right?
 (A) 7th (B) 11th
 (C) 14th (D) 18th

82. C



Thus, the row consists of $(12 + 1 + 5) = 18$ girls.
 Now, Preeti's new position is Kanya's earlier position which is 5th from the left.
 Number of girls to the right of Preeti = $(18 - 5) = 13$
 So, Preeti's new position is 14th from the right.

83. If Atul finds that he is twelfth from the right in a line of boys and fourth from the left, how many boys should be added to the line such that there are 28 boys in the line?
 (A) 12 (B) 13
 (C) 14 (D) 20

83. B

Sol. Clearly, number of boys in the line = $(11 + 1 + 3) = 15$
 \therefore Number of boys to be added = $(28 - 15) = 13$.

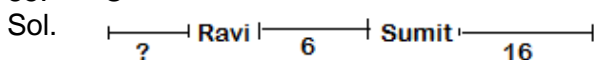
84. In a class of 60, where girls are twice that of boys, Kamal ranked seventeenth from the top. If there are 9 girls ahead of Kamal, how many boys are after him in rank?
 (A) 3 (B) 7
 (C) 12 (D) 23

84. C

Sol. Let the number of boys be x .
 Then, number of girls = $2x$
 $\therefore x + 2x = 60$ or $3x = 60$ or $x = 20$
 So, number of boys = 20 and number of girls = 40
 Number of students behind Kamal in rank = $(60 - 17) = 43$
 Number of girls ahead of Kamal in rank = 9
 Number of girls behind Kamal in rank = $(40 - 9) = 31$
 \therefore Number of boys behind Kamal in rank = $(43 - 31) = 12$

85. Ravi is 7 ranks ahead of Sumit in a class of 39. If Sumit's rank is seventeenth from the last, what is Ravi's rank from the start?
 (A) 14th (B) 15th
 (C) 16th (D) 17th

85. C



So, Ravi is 24th from the last.

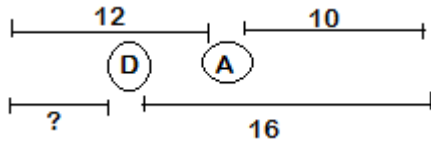
MVPP-Part Test-1-MAT

Number of students ahead of Ravi in rank = $(39 - 24) = 15$
 So, Ravi is 16th from the start.

86. In a row of boys, A is thirteenth from the left and D is seventeenth from the right. If in this row A is eleventh from the right then what is the position of D from the left?
 (A) 6th (B) 7th
 (C) 10th (D) 12th

86. B

Sol.

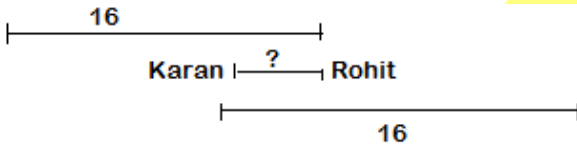


So, number of boys in the row = $(12 + 1 + 10) = 23$
 Now, D is 17th from the right
 D's position from left = $(23 - 16) = 7$ th

87. Rohit is seventeenth from the left end of a row of 29 boys and Karan is seventeenth from the right end in the same row. How many boys are there between them in the row?
 (A) 3 (B) 5
 (C) 6 (D) Data inadequate

87. 3

Sol.



Total number of boys = 29
 Number of boys to the left of Karan = $(29 - 17) = 12$
 So, Karan is 13th from the left end. Also, Rohit is 17th from the left end.
 Clearly, there are 3 boys between Rohit and Karan.

88. Forty boys are standing in a row facing the North. Amit is eleventh from the left and Deepak is thirty-first from the right end of the row. How far will Shreya, who is third to the right of Amit in the row, be from Deepak?
 (A) 2nd (B) 3rd
 (C) 4th (D) 5th

88. C

Sol.

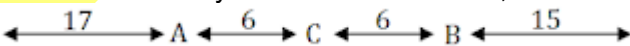
Number of boys to the left of Deepak = $(40 - 31) = 9$
 So, Deepak is 10th from the left end.
 Shreya is third to the right of Amit. So Shreya is 14th from the left end
 Clearly, Shreya is fourth to the right of Deepak.

89. In a queue, A is eighteenth from the front while B is sixteenth from the back. If C is twenty-fifth from the front and is exactly in the middle of A and B, then how many persons are there in the queue?
 (A) 45 (B) 46
 (C) 47 (D) 48

89. C

Sol.

A is 18th from front and C is 25th
 Number of persons between A and C = 6
 Since C is exactly in middle of A and B, so number of persons between C and B = 6



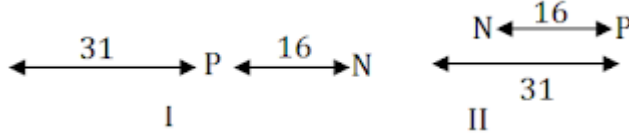
\therefore Number of persons in the queue = $(17 + 1 + 6 + 1 + 6 + 1 + 15) = 47$.

MVPP-Part Test-1-MAT

90. In a row of girls, there are 16 girls between Priya and Natasha. Priya is thirty-second from the left end of the row. If Priya is nearer than Natasha to the right end of the row, then how far away is Natasha from the left end of the row?
 (A) Data inadequate (B) 14th
 (C) 15th (D) 16th

90. C

Sol. There are two possible arrangements:



But since Priya is nearer than Natasha to the right end of the row, so only arrangement II follows.

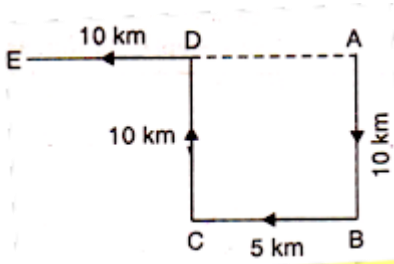
Number of girls to the left of Natasha in II = $[31 - (1 + 16)] = 14$

Clearly, Natasha is 15th from the left end of the row.

91. One day, Hemant left home and cycled 10 km southwards, turned right and cycled 5 km and turned right and cycled 10 km and turned left and cycled 10 km. He is in which direction from the starting point?
 (A) East (B) West
 (C) North (D) South

91. B

Sol.

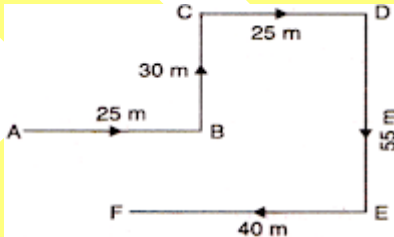


DE is in west direction with respect to A (starting point).

92. Rizwan faces towards north. Turning to his right, he walks 25 metres. He then turns to his left and walks 30 metres. Next he moves 25 metres to his right. He then turns to his right again and walks 55 metres. Finally, he turns to the right and moves 40 metres. In which direction is he now from his starting point?
 (A) South-west (B) South
 (C) North-west (D) South-east

92. D

Sol.

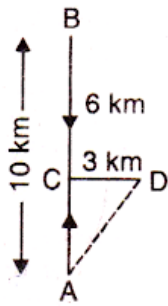


F is to the South-east of A. So, he is to the south-east from his starting point.

93. Avika walks 10 km towards North. From there she walks 6 km towards South. Then, she walks 3 km towards East. How far is she from her starting point?
 (A) 5 km (B) 6 km
 (C) 5.5 km (D) 6.5 km

93. A

Sol.



$$AC = (AB - BC) = (10 - 6) = 4 \text{ km};$$

$$CD = 3 \text{ km}$$

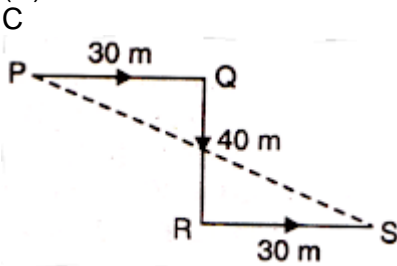
So, Avika's distance from starting point A

$$= AD = \sqrt{AC^2 + CD^2} = \sqrt{4^2 + 3^2} = 5 \text{ km}$$

94. Akshat walked 30 metres towards East, took a right turn and walked 40 metres. Then he took a left turn and walked 30 metres. In which direction is he now from the starting point?

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

94. Sol.

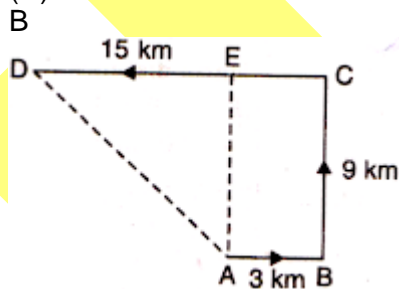


Akshat final position is S which is to the South-east of the starting point P.

95. A person starts from a point A and travels 3 km eastwards to B and then turns left and travels thrice that distance to reach C. He again turns left and travels five times the distance he covered between A and B and reaches his destination D. The shortest distance between the starting point and the destination is

- (A) 12 km (B) 15 km
(C) 16 km (D) 18 km

95. Sol.



Draw $AE \perp CD$

Then, $CE = AB = 3 \text{ km}$ and

$AE = BC = 9 \text{ km}$

$$DE = (CD - CE) = (15 - 3) \text{ km} = 12 \text{ km}$$

$$\text{In } \triangle AED, AD^2 = AE^2 + DE^2$$

$$\Rightarrow AD = \sqrt{9^2 + 12^2} \text{ km} = \sqrt{225} \text{ km} = 15 \text{ km}$$

96. A and B together have Rs. 1210. If $\frac{4}{15}$ of A's amount is equal to $\frac{2}{5}$ of B's amount, how much amount does B have?

- (A) Rs. 460 (B) Rs. 484
(C) Rs. 550 (D) Rs. 664

96. B

MVPP-Part Test-1-MAT

Sol. $\frac{4}{15}A = \frac{2}{5}B$

$$\Rightarrow A = \left(\frac{2}{5} \times \frac{15}{4}\right)B$$

$$\Rightarrow A = \frac{3}{2}B$$

$$\Rightarrow \frac{A}{B} = \frac{3}{2}$$

$$\Rightarrow A : B = 3 : 2$$

$$\therefore \text{B's share} = \text{Rs.} \left(1210 \times \frac{2}{5}\right) = \text{Rs.} 484$$

97. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets Rs. 1000 more than D, what is B's share?

(A) Rs. 500

(B) Rs. 1500

(C) Rs. 2000

(D) None of these

97. C

Sol. Let the shares of A, B, C and D be Rs. 5x, Rs. 2x, Rs. 4x and Rs. 3x respectively.

$$\text{Then, } 4x - 3x = 1000$$

$$\Rightarrow x = 1000$$

$$\therefore \text{B's share} = \text{Rs. } 2x = \text{Rs. } (2 \times 1000) = \text{Rs. } 2000$$

98. Seats for Mathematics, Physics and Biology in a school are in the ratio 5 : 7 : 8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats?

(A) 2 : 3 : 4

(B) 6 : 7 : 8

(C) 6 : 8 : 9

(D) None of these

98. A

Sol. Originally, let the number of seats for Mathematics, Physics and Biology be 5x, 7x and 8x respectively.

Number of increased seats are (140% of 5x), (150% of 7x) and (175% of 8x)

$$\Rightarrow \left(\frac{140}{100} \times 5x\right), \left(\frac{150}{100} \times 7x\right) \text{ and } \left(\frac{175}{100} \times 8x\right)$$

$$\Rightarrow 7x, \frac{21x}{2} \text{ and } 14x.$$

$$\therefore \text{The required ratio} = 7x : \frac{21x}{2} : 14x$$

$$\Rightarrow 14x : 21x : 28x$$

$$\Rightarrow 2 : 3 : 4$$

99. If $0.75 : x :: 5 : 8$, then x is equal to:

(A) 1.12

(B) 1.2

(C) 1.25

(D) 1.30

99. B

Sol. $(x \times 5) = (0.75 \times 8) \Rightarrow x = \left(\frac{6}{5}\right) = 1.20$

100. The sum of three numbers is 98. If the ratio of the first to second is 2:3 and that of the second to the third is 5 : 8, then the second number is:

(A) 20

(B) 30

(C) 48

(D) 58

100. B

Sol. Let the three parts be A, B, C. Then,

MVPP-Part Test-1-MAT

$$A : B = 2 : 3 \text{ and } B : C = 5 : 8 = \left(5 \times \frac{3}{5}\right) : \left(8 \times \frac{3}{5}\right) = 3 : \frac{24}{5}$$

$$\Rightarrow A : B : C = 2 : 3 : \frac{24}{5} = 10 : 15 : 24$$

$$\Rightarrow B = \left(98 \times \frac{15}{49}\right) = 30$$