

## Sequential Output Tracing Questions for SBI PO Mains and IBPS PO Mains Exams.

## Set 37

Directions: Study the following information carefully and answer the questions given beside:
A number arrangement machine arranges two digit numbers in a certain manner. Step-1 is obtained by taking the difference of the numbers given in Input on the basis of given arrows. Each step is obtained by applying an operation different from the previous step. Each step gives output taking input from the previous step.


Step 2:


Step 3:


Step 4:

Using the above illustration solve the following input:

| Input: |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 5 | 8 | 8 | 1 | 1 | 6 | 9 | 0 | 2 | 3 | 7 | 2 |

## Questions:

1. What would be the difference of the sum of the digits of both boxes of step-2?
A. 4
B. 7
C. 11
D. 6
E. 9
2. What would be the sum of both the boxes of step-3?
A. 36
B. 48
C. 16
D. 32
E. 24
3. Which of the following numbers will be present in step-1?
A. 84
B. 62
C. 46
D. Both 84 and 62
E. All of these
4. What would be the sum of the digits present in step-4?
A. 7
B. 16
C. 10
D. 12
E. 9
5. Which of the following combinations correctly represents the 1st digit of 3rd box from right end, 2nd digit of 1st box from left end and 2nd digit of middle box of step-1?
A. $[8|6| 6]$
B. $[2|6| 4]$
C. $[4|8| 2]$
D. $[6|0| 4]$
E. [2|8|6]

## Correct Answers:

| $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :--- | :--- | :--- | :--- |
| A | E | B | D | C |

## Common Explanations:

## Reference:



## Inference:

Studying the above Input and Step-1 we can say that each digit of the Step-1 is the difference of the digits of the boxes connected by arrows.

Here, difference is taken in such manner that to procure $1^{\text {st }}$ digit of $1^{\text {st }}$ box in step 1 we are taking the difference of even digits of box 1 and box 4 , considering the fact that if the first element of the box is even then difference of even digits is taken first and vice versa.

Following the same pattern we can get all the elements of step-1.


Here, step-1 of the given input can be written as:


## Reference:



Step 2:

| 2 | 6 |
| :--- | :--- |


| 8 | 6 |
| :--- | :--- |

## Inference:

Studying the step-2 we can say that each digit of step-2 is obtained by multiplying the digits of step-1.
Now, $1^{\text {st }}$ digit of $1^{\text {st }}$ box in step 2 is obtained by multiplying $1^{\text {st }}$ digit of $1^{\text {st }}$ box and $2^{\text {nd }}$ digit of $2^{\text {nd }}$ box of step- 1 , multiplication is done consecutively till a single digit is obtained.


Following the same pattern step-2 of the given input can be written as:


Reference:


Step 2:


| $8 \mid 6$ |
| :--- | :--- |

Step 3:
10

## Inference:

Studying the step-3 we can say that each number of step-3 is obtained by addition of digits of step-2.
Here, value of $1^{\text {st }}$ box of step 3 is obtained by adding $1^{\text {st }}$ digit of box 1 and $1^{\text {st }}$ digit of box 2 of step- 2 .
Similarly, value of $2^{\text {nd }}$ box of step-3 is obtained by adding $2^{\text {nd }}$ digit of box 1 and $2^{\text {nd }}$ digit of box 2 of step- 2 .


Step 2:


Step 3:

$6+6=12$

Following the same pattern step-3 of the given input can be written as:


Reference:


Step 2:


| 8 | 6 |
| :--- | :--- |

Step 3:

## Inference:

Studying the step-4 we can say that the number of step-4 is obtained by taking the difference of the square of the respective values obtained in boxes of step-3.


Step 2:


Step 4:

44
$(12)^{2}-(10)^{2}=44$

Following the same pattern step-4 of the given input can be written as:


Step 2:


Step 3:
16
8
$6+2=8$
Step 4:

$$
(16)^{2}-(8)^{2}=192
$$

## Answers :

1. Following the final solution we can say that the boxes present in step-2 are [8|6] and [8|2] respectively.

Sum of digits of box $1=8+6=14$ and sum of digits of box $2=8+2=10$

Required difference $=14-10=4$

Hence the correct answer is option A.
2. Following the final solution we can say that the numbers present in step-3 are 16 and 8 respectively.

Required Sum $=16+8=24$.

Hence the correct answer is option E.
3. Following the final solution we can say that 62 will be present in step-1.

Hence the correct answer is option B.
4. Following the final solution we can say that the digits present in step-4 are [192].

Required Sum $=1+9+2=13$
Hence the correct answer is option D.
5. Following the final solution we can say that combination [4|8|2] correctly represents the $1^{\text {st }}$ digits of $3^{\text {rd }}$ box from right end, $2^{\text {nd }}$ digit of $1^{\text {st }}$ box from left end and $2^{\text {nd }}$ digit of middle box of step- 1

Hence the correct answer is option C.

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