Machine Input
Solution

Answer (1-2):

The logic is as follows:

Step I: The first two smallest numbers are arranged in ascending order.

Step II: The next two smallest numbers are arranged in ascending order shifting the previously arranged one inward.

Step III: The digits of all the numbers are interchanged

Step IV: Taking a pair of numbers from the left-most side, the first two digits of the number pair are taken to form a number. Similarly, the second two digits of a number pair are taken to form the next number.

Input:

12 46 32 11 19 36 89 41 56 53 75 81

Step I: 11 12

46 32 19 36 89 41 56 53 75 81

Step II:

19 32 11 12 46 36 89 41 56 53 75 81

Step III:

91 23 11 21 64 63 98 14 65 35 57 18

Step IV:

92 13 12 11 66 43 91 84 63 55 51 78

Thus, Step IV is the last step.

1. Answer (C):

There are two numbers between 91 and 21 in Step III, two numbers between 11 and 32 in Sep I, thus in Step four there are two numbers between 92 and 11 in step IV.

Hence, 11 is the correct answer.

2. Answer (B):

The number which is fourth from the left end in step II = 12

The number which is fourth from the right end in step IV = 65

Sum = 12 + 63 = 75

Hence, 75 is the correct answer.

Direction (3-5):

Input: $ F 3 6 N @ 9 K T Q 5 C % 8 B # 7 D S * H 4 W L

Step I: $ F 3 6 N @ K T Q 5 C % B # D S * H 4 W L 7 8 9

Step II: $ 3 F 6 N @ K T 5 Q C % B # D S * H 4 W 7 L 8 9

Step III: $ 3 F 6 @ K T 5 Q % # D * H B C N S 4 W 7 L 8 9

3. Answer: (C)

4. Answer: (C)

5. Answer: (B)

Direction (6-8): In this input output question only numbers is arranged in each step. Let us understand the logic behind it- In each step the numbers are arranged.

In step 1: all the even number (input) are multiplied with 2 and all the even numbers are multiplied with 3.

Step 2: Is given in the pattern as firstly the numbers are subtracted and then added respectively.

Step 3: The resultant of the multiplication of its digits in the previous step.

Step4: The numbers in the previous step is divided by 2.

Input:	**25**	**22**	**93**	**56**	**17**	**74**	**39**
Step 1	**75**	**44**	**279**	**112**	**51**	**148**	**117**
Step 2	**31**	**323**	**167**	**163**	**97**	**265**	
Step 3	**3**	**18**	**42**	**18**	**63**	**60**	
Step 4	**1.5**	**9**	**21**	**9**	**31.5**	**30**	

6. Answer: (B)

7. Answer: (C)

8. Answer: (A)

Direction (9-12):

In this new pattern coding decoding question only one word and one number is arranged in each step. Let us understand the logic behind it- In each step the words and the numbers both are arranged from the left end. For words- The word which has highest place value according to alphabetical series is arranged first and each letter of each word is replaced by its second succeeding letter

according to alphabetical series and same will be followed in each step. For numbers- Numbers are arranged in descending order from left end in such a way that each number is multiplied by two.

Input- olpu htqs 21 73 48 9 xcek bdgv

Step I: zegm 146 olpu htqs 21 48 9 bdgv
Step II: qnrw 96 zegm 146 htqs 21 9 bdgv
Step III: jvsu 42 qnrw 96 zegm 146 9 bdgv
Step IV: dfix 18 jvsu 42 qnrw 96 zegm 146

9. Answer: (C)

10. Answer: (D)

11. Answer: (A)

12. Answer: (B)

Direction (13-17):

The logic followed here is:

Step I: The second and third digits of each number are interchanged with the fifth and sixth digits respectively.

Step II: The numbers are arranged in ascending order.

Step III: In each number, the odd digits are arranged in ascending order followed by the arrangement of even digits in ascending order.

Step IV: The first and last digits are added and their sum is placed as the first digit. This operation is performed with every 6-digit input number.

Step V: The 5-digit numbers obtained in step IV are arranged in ascending order.

Input: 214261 130145 333421 715620 312451 123456

Step I: 261214 145130 321433 720615 351412 156423

Step II: 145130 156423 261214 321433 351412 720615

Step III: 113504 135246 112246 133324 113524 157026

Step IV: 51350 73524 71224 53332 51352 75702

Step V: 51350 51352 53332 71224 73524 75702

13. Answer (A):

Step V is the final arrangement.

Step I: 261214 145130 321433 720615 351412 156423

The extreme left number in step I is 261214.

Sum of the digits = 2 + 6 + 1 + 2 + 1 + 4 = 16.

Hence, the required sum is **16**.

14. Answer (A):

Step V is the final arrangement.

Hence, the fourth number from the left in step II is **321433**.

15. Answer (D):

Clearly, every number in step III is an even number.

Hence, there are **six** even numbers in step III.

16. Answer (D):

The first number from the left in step IV is 51350.

The fourth number from the left in step IV is 53332.

Their difference = 53332 - 51350 = 1982.

Hence, **1982** is the required answer.

17. Answer (E):

Numbers having repeated digits in step IV:

Step IV: **51350** 73524 **71224 53332 51352 75702**

Hence, there are **five** numbers with repeated digits in step IV

Direction (18-20): Logic: Step I: 1st digit is replaced by 6th digit, 2nd digit is replaced by 5th digit and so on until 6th digit is replaced by 1st digit in each number. Step II: numbers are arranged in ascending order from left to right

Step III: first arranged odd digits then even digits in ascending order in each number. Step IV: multiplied 1st and 2nd digit, 3rd and 4th digit, 5th and 6th digit in each number.

Step V: total sum of the numerical value of all digits in each number.

Input: 856347 745982 329584 512379 954267 463512

Step I: 743658 289547 485923 973215 762459 215364
Step II: 215364 289547 485923 743658 762459 973215
Step III: 135246 579248 359248 357468 579246 135792
Step IV: 31024 351832 151832 152848 351824 33518
Step V: 10 22 20 28 23 20

18. Answer: (C)
19. Answer: (E)
20. Answer: (B)

