DeducePuzzles

Input output reasoning questions with answers

12 exam-shaped questions with full worked solutions.

For IBPS · SBI · RRB · SSC reasoning.

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The questions

Work them on paper first. Full solutions start after question 12 — the numbering matches.

QUESTION 1

A machine rearranges an input line of words and numbers step by step, following one fixed rule (study the sample below). What is Step II for the New Input?

Sample Input: 19 piano island 79 24 Step I: 19 24 piano island 79 Step II: 19 24 79 piano island Step II is the last step of the sample. New Input: candle 66 72 house 29

A. 66 72 29 house candle
B. 66 72 29 candle house
C. candle house 29 66 72
D. 29 66 candle 72 house
E. 72 66 candle house 29

QUESTION 2

A machine rearranges an input line of words and numbers step by step, following one fixed rule (study the sample below). How many steps does the machine need to complete the arrangement of the New Input?

Sample Input: iron zebra 67 37 66 Step I: 37 iron zebra 67 66 Step II: 37 66 iron zebra 67 Step III: 37 66 67 iron zebra Step III is the last step of the sample. New Input: river 43 pearl 88 18

A. 5
B. 1
C. 2
D. 4
E. 3

QUESTION 3

A machine applies one fixed arithmetic operation to every number at each step (study the sample below). What is Step II for the New Input?

Sample Input: 99 18 55 54 34 Step I: 396 72 220 216 136 Step II: 403 79 227 223 143 Step III: 7 16 11 7 8 Step III is the last step of the sample. New Input: 21 53 87 46 82

A. 84 212 348 184 328
B. 10 12 13 11 11
C. 91 219 355 191 335
D. 73 201 337 173 317
E. 32 4 96 32 48

QUESTION 4

A machine rearranges an input line of words and numbers step by step, following one fixed rule (study the sample below). What is Step II for the New Input?

Sample Input: 74 86 flute mango rock 21 Step I: rock 74 86 flute mango 21 Step II: rock flute 74 86 mango 21 Step III: rock flute mango 74 86 21 Step III is the last step of the sample. New Input: 10 apple 58 47 engine orbit

A. apple orbit 10 58 47 engine
B. apple engine 10 58 47 orbit
C. apple engine 10 orbit 47 58
D. orbit engine 10 apple 58 47
E. 10 apple engine orbit 47 58

QUESTION 5

A machine rearranges an input line of words and numbers step by step, following one fixed rule (study the sample below). What is Step II for the New Input?

Sample Input: 70 yard mirror rock 18 28 Step I: rock 70 yard mirror 18 28 Step II: rock yard 70 mirror 18 28 Step III: rock yard mirror 70 18 28 Step III is the last step of the sample. New Input: 43 cloud 35 house kite 48

A. 35 43 48 cloud house kite
B. cloud house 35 kite 43 48
C. cloud house kite 35 43 48
D. cloud 35 43 house kite 48
E. kite cloud 43 35 house 48

QUESTION 6

A machine rearranges an input line of words and numbers step by step, following one fixed rule (study the sample below). How many steps does the machine need to complete the arrangement of the New Input?

Sample Input: 12 80 91 mango 20 bridge cloud lotus Step I: cloud 12 80 91 mango 20 bridge lotus Step II: cloud lotus 12 80 91 mango 20 bridge (Only the first 2 steps of the sample are shown; the machine continues until the arrangement is complete.) New Input: 95 yard 99 48 33 house river quilt

A. 6
B. 3
C. 5
D. 2
E. 4

QUESTION 7

A machine rearranges an input line of words and numbers step by step, following one fixed rule (study the sample below). What is Step II for the New Input?

Sample Input: pearl wagon 15 candle 41 Step I: pearl 15 candle 41 wagon Step II: 15 candle 41 pearl wagon Step III: 15 41 candle pearl wagon Step III is the last step of the sample. New Input: apple 13 ocean bridge 49

A. apple 13 49 bridge ocean
B. apple 13 bridge 49 ocean
C. apple ocean bridge 13 49
D. 49 13 apple ocean bridge
E. 13 49 apple ocean bridge

QUESTION 8

A machine rearranges an input line of words and numbers step by step, following one fixed rule (study the sample below). What is Step II for the New Input?

Sample Input: 56 cloud 63 57 island Step I: 56 cloud 57 island 63 Step II: 56 cloud island 57 63 Step III: cloud island 56 57 63 Step III is the last step of the sample. New Input: 79 13 jam 48 candle

A. 13 jam candle 48 79
B. candle 13 79 jam 48
C. 13 candle 79 jam 48
D. jam candle 79 13 48
E. candle jam 79 13 48

QUESTION 9

A machine rearranges an input line of words and numbers step by step, following one fixed rule (study the sample below). What is Step III for the New Input?

Sample Input: 60 hill 81 jungle 83 ocean Step I: hill 60 81 jungle 83 ocean Step II: hill ocean 60 81 jungle 83 Step III: hill ocean jungle 60 81 83 Step III is the last step of the sample. New Input: 39 bridge 86 mango queen 98

A. queen mango bridge 39 86 98
B. 39 86 98 bridge mango queen
C. mango queen bridge 39 86 98
D. 39 86 98 queen mango bridge
E. bridge mango queen 39 86 98

QUESTION 10

A machine applies one fixed arithmetic operation to every number at each step (study the sample below). What is Step III for the New Input?

Sample Input: 49 25 47 36 67 Step I: 98 50 94 72 134 Step II: 102 54 98 76 138 Step III: 96 48 92 70 132 Step III is the last step of the sample. New Input: 69 76 89 23 43

A. 568 624 728 200 360
B. 142 156 182 50 90
C. 148 162 188 56 96
D. 136 150 176 44 84
E. 136 150 176 44 74

QUESTION 11

A machine applies one fixed arithmetic operation to every number at each step (study the sample below). What is Step II for the New Input?

Sample Input: 86 42 39 37 38 Step I: 99 55 52 50 51 Step II: 396 220 208 200 204 Step III: 18 4 10 2 6 Step III is the last step of the sample. New Input: 35 59 41 23 19

A. 48 72 54 36 32
B. 192 288 216 144 128
C. 63 87 69 51 47
D. 56 80 62 44 40
E. 12 18 9 9 11

QUESTION 12

A machine applies one fixed arithmetic operation to every number at each step (study the sample below). What is Step II for the New Input?

Sample Input: 24 75 33 31 29 57 Step I: 72 225 99 93 87 171 Step II: 87 240 114 108 102 186 Step III: 78 42 411 801 201 681 Step IV: 56 8 4 0 0 48 Step IV is the last step of the sample. New Input: 94 64 93 43 81 58

A. 282 192 279 129 243 174

B. 792 702 492 441 852 981

C. 297 207 294 144 258 189

D. 141 96 558 258 486 87

E. 279 189 276 126 240 171

Answers and worked solutions

Each walkthrough is the engine's own elimination order, step for step — not a reconstruction written after the fact.

SOLUTION 1

Answer: **29 66 candle 72 house**

1. The machine's rule: in each step the machine moves the smallest remaining number to the leftmost free position.
2. Check the rule against the sample — it reproduces every shown step, and no other standard rearrangement rule does.
3. Apply it to the new input: candle 66 72 house 29.
4. Step I: 29 candle 66 72 house
5. Step II: 29 66 candle 72 house
6. So Step II of the new input is: 29 66 candle 72 house.

SOLUTION 2

Answer: **3**

1. The machine's rule: in each step the machine moves the smallest remaining number to the leftmost free position.
2. Check the rule against the sample — it reproduces every shown step, and no other standard rearrangement rule does.
3. Apply it to the new input: river 43 pearl 88 18.
4. Step I: 18 river 43 pearl 88
5. Step II: 18 43 river pearl 88
6. Step III: 18 43 88 river pearl
7. The arrangement is complete after Step III, so the machine needs 3 steps.

SOLUTION 3

Answer: **91 219 355 191 335**

1. Sample Step I: each number is multiplied by 4 (99 → 396).
2. Sample Step II: 7 is added to each number (396 → 403).
3. Sample Step III: each number is replaced by the sum of its digits (403 → 7).
4. Each of those is the only standard operation that turns the previous line into the shown one.
5. Apply the same steps to the new input: 21 53 87 46 82.
6. Step I: 84 212 348 184 328
7. Step II: 91 219 355 191 335
8. So Step II of the new input is: 91 219 355 191 335.

SOLUTION 4

Answer: **apple orbit 10 58 47 engine**

1. The machine's rule: in each step the machine moves the shortest remaining word (alphabetical order breaks a length tie) to the leftmost free position.
2. Check the rule against the sample — it reproduces every shown step, and no other standard rearrangement rule does.
3. Apply it to the new input: 10 apple 58 47 engine orbit.
4. Step I: apple 10 58 47 engine orbit
5. Step II: apple orbit 10 58 47 engine
6. So Step II of the new input is: apple orbit 10 58 47 engine.

SOLUTION 5

Answer: **kite cloud 43 35 house 48**

1. The machine's rule: in each step the machine moves the shortest remaining word (alphabetical order breaks a length tie) to the leftmost free position.
2. Check the rule against the sample — it reproduces every shown step, and no other standard rearrangement rule does.
3. Apply it to the new input: 43 cloud 35 house kite 48.
4. Step I: kite 43 cloud 35 house 48
5. Step II: kite cloud 43 35 house 48
6. So Step II of the new input is: kite cloud 43 35 house 48.

SOLUTION 6

Answer: **4**

1. The machine's rule: in each step the machine moves the shortest remaining word (alphabetical order breaks a length tie) to the leftmost free position.
2. Check the rule against the sample — it reproduces every shown step, and no other standard rearrangement rule does.
3. Apply it to the new input: 95 yard 99 48 33 house river quilt.
4. Step I: yard 95 99 48 33 house river quilt
5. Step II: yard house 95 99 48 33 river quilt
6. Step III: yard house quilt 95 99 48 33 river
7. Step IV: yard house quilt river 95 99 48 33
8. The arrangement is complete after Step IV, so the machine needs 4 steps.

SOLUTION 7

Answer: **apple 13 49 bridge ocean**

1. The machine's rule: in each step the machine moves the alphabetically last remaining word to the rightmost free position.
2. Check the rule against the sample — it reproduces every shown step, and no other standard rearrangement rule does.
3. Apply it to the new input: apple 13 ocean bridge 49.
4. Step I: apple 13 bridge 49 ocean
5. Step II: apple 13 49 bridge ocean
6. So Step II of the new input is: apple 13 49 bridge ocean.

SOLUTION 8

Answer: **13 jam candle 48 79**

1. The machine's rule: in each step the machine moves the largest remaining number to the rightmost free position.
2. Check the rule against the sample — it reproduces every shown step, and no other standard rearrangement rule does.
3. Apply it to the new input: 79 13 jam 48 candle.
4. Step I: 13 jam 48 candle 79
5. Step II: 13 jam candle 48 79
6. So Step II of the new input is: 13 jam candle 48 79.

SOLUTION 9

Answer: **mango queen bridge 39 86 98**

1. The machine's rule: in each step the machine moves the shortest remaining word (alphabetical order breaks a length tie) to the leftmost free position.
2. Check the rule against the sample — it reproduces every shown step, and no other standard rearrangement rule does.
3. Apply it to the new input: 39 bridge 86 mango queen 98.
4. Step I: mango 39 bridge 86 queen 98
5. Step II: mango queen 39 bridge 86 98
6. Step III: mango queen bridge 39 86 98
7. So Step III of the new input is: mango queen bridge 39 86 98.

SOLUTION 10

Answer: **136 150 176 44 84**

1. Sample Step I: each number is multiplied by 2 (49 → 98).
2. Sample Step II: 4 is added to each number (98 → 102).
3. Sample Step III: 6 is subtracted from each number (102 → 96).
4. Each of those is the only standard operation that turns the previous line into the shown one.
5. Apply the same steps to the new input: 69 76 89 23 43.
6. Step I: 138 152 178 46 86
7. Step II: 142 156 182 50 90
8. Step III: 136 150 176 44 84
9. So Step III of the new input is: 136 150 176 44 84.

SOLUTION 11

Answer: **192 288 216 144 128**

1. Sample Step I: 13 is added to each number (86 → 99).
2. Sample Step II: each number is multiplied by 4 (99 → 396).
3. Sample Step III: each number is replaced by the sum of its digits (396 → 18).
4. Each of those is the only standard operation that turns the previous line into the shown one.
5. Apply the same steps to the new input: 35 59 41 23 19.
6. Step I: 48 72 54 36 32
7. Step II: 192 288 216 144 128
8. So Step II of the new input is: 192 288 216 144 128.

SOLUTION 12

Answer: **297 207 294 144 258 189**

1. Sample Step I: each number is multiplied by 3 (24 → 72).
2. Sample Step II: 15 is added to each number (72 → 87).
3. Sample Step III: the digits of each number are reversed (87 → 78).
4. Sample Step IV: each number is replaced by the product of its digits (78 → 56).
5. Each of those is the only standard operation that turns the previous line into the shown one.
6. Apply the same steps to the new input: 94 64 93 43 81 58.
7. Step I: 282 192 279 129 243 174
8. Step II: 297 207 294 144 258 189
9. So Step II of the new input is: 297 207 294 144 258 189.

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