Toppersnotes
Unleash the topper in you

DRDO-MTS

DEFENCE RESEARCH & DEVELOPMENT ORGANISATION

REASONING

Contents

ALPHABET TEST

Alphabet :-

There are 26 letters in an English Alphabet, A to Z.

Left →   ← Right

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

(when counted from Z to A)

Place Value

Reverse order

First half (A to M) →

	1	2	3	4	5	6	7	8	9	10	11	12	13
	A	B	C	D	E	F	G	H	I	J	K	L	M →13

Reverse of the letters

Second half (N to Z) →

	Z	Y	X	W	V	U	T	S	R	Q	P	O	N →13
	26	25	24	23	22	21	20	19	18	17	16	15	14

E	J	O	T	Y
5	10	15	20	25

Remember 'EJOTY'

C	F	I	L	O	R	U	X
3	6	9	12	15	18	21	24

'CFILORUX'

Vowels →

A	E	I	O	U
1	5	9	15	21

...when at the left of the left letter or right of the right letter is asked, we'll find the difference of their sequence (for same side).

r example :- Which is the 7th letter from the left of the 10th letter from letter from left in english alphabet?

Sol.ⁿ   Left   left

$$10 - 7 = 3rd \text{ letter}$$

$$3rd \text{ letter} = C$$

. when at the left of the right letter or right of the left letter is asked, we'll find the sum of their sequences (for two difference side's sequence)

example :- (a) which will be the 8th letter at the right from 12th letter from left.

Sol.ⁿ   Left   +   Right

$$12 + 8 = 20th \text{ letter} = T$$

T will be the 20th letter from left in the english alphabet.

b) which will be the letter in english Alphabet, which is 7th at left from 12th from right.

ⁿ. Here for 2 different sides we add sequence no. of the letters

i.e   Right   +   left

$$12 + 7 = 19$$

So, 19th letter from Right side, we subtract 19 from 27.

$$27 - 19 = 8th$$

8th letter from left side is 'H'

* == When position of letter is asked from right side (Z), we minus from 27. ==

Like 1. R is 18 from left side then what is the position from right side.

Sol^n $$27 - 18 = 9$$

R is 9th from Right side in English Alphabet.

Example :- which will be the letter in English alphabet, which is 6th at right from 22nd from right ?

Sol^n   Right   -   Right
          22   6   = 16

So, 16th letter from right means

$$27 - 16 = 11th \text{ from left. and}$$

K is the 11th letter from left.

Example :- which letter is 10th to Right of 19th letter from Right.

Sol^n   Right   -   Right
          19   10   = 9

So, $$27 - 9 = 18 = R$$

In short

$=$ At the right from right] (-)
At the left from left

At the left from Right] (+)
At the right from left

↳ 2. When a series of letter symbol digit is given :

Example : Study the following arrangement carefully and answer the following questions :

R4PIJMθ3%Tθ☺UKSVIω$Y2BE6#9DHθG*ZN

Q.1. which is 6th at the left of 15th from the left in above arrangement.

Sol^m   Left   -   Left

         15   -   6   = 9th from left

So answer = %.

Q2: In the above arrangement; how many numbers are such which are produced by consonant and not followed by a letter ?

Sol^n.   Answer = one

         Q   3   % →   not letter.
         ↓   ↓
    Consonant Number

↳ 3. Arrangement according to Dictionary :
                                          In
this arrangement, we arrange the letters in the

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Order in which they appear in the English alphabet.

For example :- 1. Choose the one that comes at the second place According to Dictionary.

   A. Bathing   B. Banking

   c. Backing   D. Banishing

   E. Barricading.

Sol^n. According to English Dictionary.

Backing , Banishing , Banking , Barricading , Bathing
  1   2   3   4   5

So, banishing is at second place.

* 2. How many letters pairs in the word PARADISE are such pairs, which contain the same no. of letters between them as they have in the English Alphabet ?

Sol^n.   P A R A D I S E
        19 1 21 1 4 9 22 5

we have 3 letter pairs here.

* 3. If the 2nd half of the English alphabet is written in reverse order, then which letter will be the 13th at right from 8th from left ?

Explanation :-

   According to Question A → MZ → N

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A B C D E F G H I J K L M N Z Y X W V U T S R Q P O N

Now $\overset{L}{8} + \overset{R}{13} = 21$

So, 21 letters, 13 are form A to M, remaining 8 should be counted from Z to N, which is 'S'.

Q.1 If the second half of the English Alphabet is reversed then which letter will be 4th to the right of 20th letter from the right?

sol:

Right   -   Right

$\Rightarrow$ 20   -   4   =   16th from Right

So   27 - 16 = 11th from left = K

| 16th from Right = 11th from Right |

Q.2 which letter is in the middle between the 9th letter from the right and 8th letter from the left in the English Alphabet?

sol: A $\longrightarrow$ Z

8th from left = H   9th from the right $(27-9 = 18 = R)$

So middle letter $= \dfrac{8 + 18}{2} = 13\text{th} = M.$

Q.3 A E C B % 7 D $ E B 5 C ? 3 D E 9 @ 2 #. If all the vowels are dropped from the above arrangement which of the following will be the 12th from the left end of the above arrangement?

sol: After dropping Vowels we have

C B % 7 ⓓ $ B 5 C ? 3 D 9 @ 2 #
   ↑
            Ans

Q.4 If the sequence of the English alphabet is reversed then which is 7th to the left of second vowel. From the right of English Alphabet in the new series?

sol:

Second Vowel from the right of reversed English alphabet is E and 7th letter to the left of E in the new series is L.
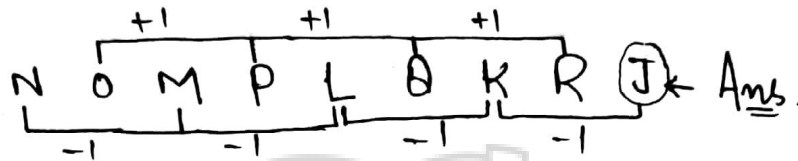
Q.5 How many pairs of letter are there. in the word 'HORIZON' which have as many letters between them in the word as in the English Alphabet?

sol:

$$H \quad O \quad R \quad I \quad Z \quad O \quad N = 4 \text{ pairs of letters.}$$
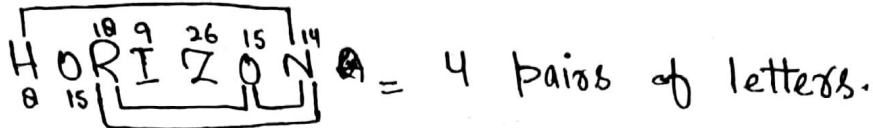
Q.6 What is the next letter of the following sequence N, O, M, P, L, Q, K, R, ?

sol:

$$N \quad O \quad M \quad P \quad L \quad Q \quad K \quad R \quad \text{(J)} \leftarrow Ans.$$

Q.7 If the first and second letters in the word 'MISFORTUNE' were interchanged, also the third and the fourth letters, the fifth and sixth letters and so on, which letter would then be the eight letter counting to your left?

sol:

New Sequence = I M F S R O U (T) E N

Ans. = T.

Q.8 Arrange the given words in alphabetical order and choose the one that comes in the middle?

sol: According to alphabet order →

shout , skirt. slaughter , specify , straight

middle word = Slaughter.

Q.9 If NAMO = 172 and OM = 56, then SHIVAY = ?

sol:

$$NAMO = 14 + 1 + 13 + 15 = 43 * 4 = 172$$

$$OM = 15 + 13 = 28 \times 2 = 56$$

$$SHIVAY = 19 + 8 + 9 + 22 + 1 + 25 = 84 \times 6$$
$$= 504$$

Directions(10-14): Study the following arrangement of numbers, letters and symbols carefully and answer the questions given below.

R @ 2 9 T V A Y 5 © # J I P 8 Q $ E 3 * H % 6 W 4 I δ U Z

Q.10 Four of the following five are alike in a certain way based on their positions in the above arrangement, and so form a group. Which is the one that does not belong to the group?

JP©, E*Q, WI%, 9V@, I#8

sol:

J P C   E * Q   W I %   9 V @   I # 8
+2 -4   +2 -4   +2 -4   +2 -4   -2 +16

Ans I # 8

Q.11 Which of the following is the fifth to the right of the 19th element from the right end?

P, V, W, 8, Q

sol:
19 - 5 = 19th element from the right end = Q.

Q.12 How many such number are these in the given arrangement, each of which is immediately preceded by the consonant and immediately followed by a symbol?

sol:
Y S © ⟶ 1 pair

Q.13 If the positions of the last 18 elements in the given arrangement are reversed, which will be the 17th from the left end?

sol: After arrangement
R @ 2 9 T V A Y S @ # 2 U S I Y W 6 % H * 3 E $ Q 8 P I J
Ans: W

Q.14 How many such vowels are there in the given arrangement, each of which is either immediately followed by a symbol?

sol:
3 Vowels = E, I and U

Q.15 How many meaningful words can be formed from the 3rd, 4th, 6th and 8th letter of the word 'CONTROVERSIAL'?

sol:
C O N T R O V E R S I A L
   3rd 4th 6th 8th

N, T, O, E → 2 words : Note, TONE
can formed

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ANALOGY

Analogy refers to comparison in which an idea or a thing is compared to another thing that is quite different from it.

Here every question has a different relation and on the basis of that relation questions are solved with same logic.

Eg :- 4 : 8 :: 16 : ?

Here in this question 4 and 8 shares a kind of relation that 8 is double of 4 so that 16 has also same relation and answer will be "32" means it also double of 16.

Eg : Male : Maldives :: ? : France

Here in this question examiner has given the relation between Male and Maldives and we have to understand the relation and it is the capital and country relation so answer is "paris"

eg : Doctor : ? :: Sculptor : chisel

Here in this question, chisel is a instrument used by Sculptor, in the same way answer will be a instrument used by doctor it can be stethoscope, sphygmomanometer or anything else. it depends on options given by examiner.

eg :- A B C D : B C D E :: M N O P : ?

Here in this question next alphabet is taken for every given alphabet so in the same way answer will be "Nopq".

A   B   C D
+1↓ +1↓ +1↓ +1↓
B   C   D   E

M N O P
+1↓ +1↓ +1↓ +1↓
N   O P q

Here in this question place values of E and f are 5 and 6 respectively and they are multiplied to each other so in the same way place value of K and L are 11 and 12 respectively so answer is "132"

E   F
5 × 6 = 30

K L
11 × 12 = 132

Eg- (8, 56, 72)

ⓐ (7, 56, 63)   ⓑ (6, 42, 54)   ⓒ (5, 30, 35)   ⓓ (3, 15, 24)

Here in this question examiner has given certain relation among all these three numbers so we need to find numbers out of options who have similar relation among them.

8 × 7 = 56   6 × 7 = 42
8 × 9 = 72   6 × 9 = 54

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Numeric Analogy :-

Que $456 : 15 :: 789 : ?$

Sol^n $4 + 5 + 6 = 15$

Therefore $7 + 8 + 9 = 24$

Que $18 : 30 :: 36 : ?$

Sol^n $18 \times 2 = 36 - 6 = 30$

Similarly

$36 \times 2 = 72 - 6 = 66$

Que $6 : 222 :: 7 : ?$

$6^3 + 6 = 216 + 6 = 222$
$7^3 + 6 = 343 + 7 = 350$

Que $19 : 37 :: 26 : ?$

$19 \times 2 = 38 - 1 = 37$
$26 \times 2 = 52 - 1 = 51$

Que $5 : 21 :: 7 : ?$

Sol^n $5 \times 5 = 25 - (5 - 1)$
$= 21$

Similarly

$7 \times 7 = 49 - (7 - 1)$
$= 43$

Que   3 : 18 :: 13 : P

Sol^n $3 \times 6 = 18$

Similarly

$13 \times 6 = 78$

Que   37 : 23 :: 19 : ?

Sol^n $37 - 14 = 23$

Similarly

$19 - 14 = 5$

Que   13 : 5 :: 32 : ?

Sol^n $13 - 8 = 5$

Therefore

$32 - 8 = 24$

Que   8 : 24 :: ? : 32

Sol^n $8 \Leftarrow 2 \times 4$

$6 \Leftarrow 3 \times 2$

Que   5 : 2431 :: 8 : ?

    (a) 4287   (b) 5461   (c) 7624   (d) 6743

sol^n $5 \Leftarrow \dfrac{10}{2} \Leftarrow 2+4+3+1$

similarly

$8 \Leftarrow \dfrac{16}{2} \Leftarrow 5+4+6+1$

Que. $8 : 27 :: 4 : ?$

Sol^n $8 = 3^3 = 27$

$4 = 4^3 = 64$

Que $\dfrac{1}{9} : \dfrac{1}{81} :: \dfrac{1}{13} : ?$

Sol^n $\dfrac{1}{9} : \dfrac{1}{81}$

$\underset{\times 9}{\underline{\qquad}}$

Therefore $\dfrac{1}{13} : \dfrac{1}{169}$

$\underset{\times 13}{\underline{\qquad}}$

Que $\dfrac{2}{3} : \dfrac{19}{29} :: \dfrac{8}{7} : ?$

Sol^n $\dfrac{2}{3} = \dfrac{2 \times 10}{3 \times 10} = \dfrac{20 - 1}{30 - 1} = \dfrac{19}{29}$

similarly $\dfrac{8}{7} = \dfrac{8 \times 10}{7 \times 10} = \dfrac{80 - 1}{70 - 1} = \dfrac{79}{69}$

Que $17 : 24 :: 153 : ?$

Ans 216

Que $8 : 11 :: 7 : ?$

Ans 51

Que $32 : 28 :: 160 : ?$

Ans 140

Que $4 : 20 :: 6 : ?$

Ans 42

Numbers with Common Characteristics :—

Que Given set (16, 32, 64)

ⓐ (8, 16, 24)　　ⓑ (7, 12, 14)　　ⓒ (6, 18, 24)　　ⓓ (8, 16, 32)

Sol^n first number ×2 = second no → 16×2 = 32

Second number ×2 = third no → 32×2 = 64

Similarly

$$8 × 2 = 16$$
$$16 × 2 = 32$$

Que Given set (5, 15, 40)

ⓐ (2, 4, 15)　　ⓑ (3, 18, 36)　　ⓒ (7, 15, 21)　　ⓓ (9, 36, 47)

Sol^n Second and third numbers are multiple of first number

$$5 × 3 = 15$$
$$5 × 8 = 40$$

Similarly

$$3 × 6 = 18$$
$$3 × 12 = 36$$

Que Given set (5, 9, 16)

ⓐ (4, 8, 16)　　ⓑ (6, 9, 12)　　ⓒ (7, 11, 18)　　ⓓ (8, 11, 12)

Sol^n

$$5 + 4 = 9$$
$$9 + 7 = 16$$

Similarly

$$7 + 4 = 11$$
$$11 + 7 = 18$$

Que select the pair which resembles the given set of numbers : 16, 36, 64

ⓐ 4, 9, 144　　ⓑ 16, 100, 256　　ⓒ 25, 49, 121　　ⓓ 9, 81, 169

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