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Assam

Home Guards (Class 1)

Assam Public Service Commission (APSC)

Volume - 1

General Mental Ability

SIERRA INNOVATIONS

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1 CHAPTER

English Alphabet Test

- This chapter includes questions based on the English alphabet (A–Z). Candidates should know the positions of all 26 letters and basic related concepts clearly.
- **Letters are of two types:**
  - ✓ Vowels – A, E, I, O, U (There are 5 vowels in the English alphabet.)
  - ✓ Consonants – B, C, D, F, G, H, J, K, L, M, N, P, Q, R, S, T, V, W, X, Y, Z (There are 21 consonants in the English alphabet.)
- **The alphabet is divided into two halves:**
  - ✓ First Half – A to M (The first half contains 13 letters, i.e., positions 1 to 13.)
  - ✓ Second Half – N to Z (The second half contains 13 letters, i.e., positions 14 to 26.)

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

Short trick:

- **EJOTY (इजोटी)**

5	10	15	20	25
E	J	O	T	Y

- **CFILORUX (सिफिलोरक्स)**

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

- **Finding letters from the right side can be simplified using the formula:**
  - ✓ Position from left = 27 − Position from right
- **Trick to Remember Opposite Letters**

Pair	**AZ**	**BY**	**CX**	**DW**	**EV**	**FU**	**GT**
Trick	**AZ**	**BY**e	Cracks	**D**e**W**	**EV**ening	Few / Uff	**G.T**. Road

Pair	**HS**	**IR**	**JQ**	**KP**	**LO**	**MN**
Trick	**H**igh **S**chool	**I**ndian **R**ailway	**J**aipur **Q**ueen	**K**an**P**ur	**L**ife **O**K	**M**a**N**

Type-1 Position of a Letter in the English Alphabet

- If counting in the **same direction** (left to left or right to right), **subtract** both positions.
- If counting in **opposite directions** (left to right or right to left), **add** both positions.

Ex: In the English alphabet, what is the 10th letter to the left of the 21st letter from the left?
Ans: Using the trick**:** If counting in the same direction (left to left or right to right), subtract both positions.
English alphabet = 21-10= 11^{th} alphabet = K

Ex: In the English alphabet, what is the 9th letter to the left of the 11th letter from the right?

Ans: In these types of question first we calculate from the left and then subtract from the 27.

Alphabet= $11+9=20^{th}$ from the left

Original alphabet = $27-20 = 7^{th}$ alphabet = G

Type-2 Forming Letter Pairs

- The letter pair can be formed in both forward and backward directions.
- Multiple pairs can be created from a single word.
- After forming a pair with a letter, you can form another pair with the same letter if they are at the same distance according to the English alphabet.

Ex: How many such pairs of letters are there in the word 'COMBINE', each of which has as many letters between them in the word (both forward and backward direction) as they have between them in the English Alphabet?

Ans: First of all, we will write number of positions of 'COMBINE' word according to English alphabet i.e. C is written as 3 and O will be written as 15 and so on.

C	O	M	B	I	N	E
3	15	13	2	9	14	5

Here we can see that only B and E is making one pair.

Type-3 Letter Problems

Ex: If the first and eighth letters of the word 'REPRESENTATIVE' are swapped, then the second and ninth letters, and so on, are also swapped, what will be the fourth letter to the left of the 6th letter from the left in the new arrangement?

Ans:

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Original Letter	R	E	P	R	E	S	E	N	T	A	T	I	V	E
New Letter	N	T	A	T	I	V	E	R	E	P	R	E	S	E

Fourth letter to the left of the 6th letter from the left= $6-2=4^{th}$ = T

Type-4 Arrangement of English Words

- Arranging English words in alphabetical or dictionary order is called arrangement of words.

Ex: Arrange the following words according to English dictionary arrangement:

(A) Epitaxy (B) Episode (C) Epigene

(D) Epitome (E) Epilogue

Ans: In a Dictionary, every word is arranged alphabetically. Also, in each word each and every letter is positioned alphabetically. So here, dictionary the arrangement of words in a Dictionary, every word is arranged alphabetically.

(C) Epigene (E) Epilogue (B) Episode

(A) Epitaxy (D) Epitome

Therefore, the correct answer is (C), (E), (B), (A), (D)

Type-5 Meaningful Logical Order of Words

Ex: How many meaningful words of 5 letters can be made with the alphabets K, E, D, H, I each being used only once in each word?

Ans: Given letters: K, E, D, H, I

Meaningful word can be formed out of the alphabets K, E, D, H, I:

HIKED: Walk for a long distance, Hence, only one such word is possible.

Ex: If a five-letter meaningful word can be formed by using the first, third, fifth, sixth and eighth letters from the word "HALLOWEEN", then what is the last letter from the left end of the newly formed word?

Ans: The 1st, 3rd, 5th, 6th, and 8th letters from the left end of the word "HALLOWEEN" are H, L, O, W, and E respectively. The only five-letter meaningful word that can be formed using the letters is WHOLE.

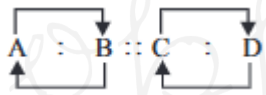
2 CHAPTER

Analogy Test

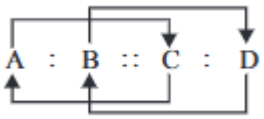
- Analogy tests involve identifying similarities between two terms. In this chapter, we explore the relationships between different elements. Such questions are included in exams to evaluate a candidate's knowledge, reasoning, and cognitive abilities.
- Analogy questions are based on specific relationships. To solve these questions effectively, candidates should follow these two steps:

Step 1: Determine the relationship between the first two terms given in the question. **Step 2:** Apply the identified relationship to the remaining terms and choose the correct answer.

Rule:1 Basic relationship: In the analogy A: B:: C:D, the relationship between A and B will be the same as the relationship between C and D or D and C.



Rule:2 Developed Relationship: In the analogy A:B:: C:D, the relationship between A and C, or C and A, will be the same as the relationship between B and D, or D and B. It is not necessary that the relationship is directly committed; it may vary.



Type-1 Word Analogy

Common Relationship Patterns

- **Synonym & Antonym:** Famous: Renowned :: Important: Significant (Same); Big: Small :: Sharp: Blunt (Opposite).
- **Tool/Instrument & Action/Function:** Needle: Sew :: Knife: Cut (Instrument-Action).
- **Unit/Part & Whole:** Petal: Flower:: Page: Book.
- **Worker & Tool/Working Place:** Artist: Brush:: Farmer : Plough; Doctor : Hospital :: Teacher : School.
- **Gender/Individual & Group:** Lion: Lioness:: Dog: Bitch.
- **Topic/Category:** Country: Capital (India: New Delhi):: State: Capital (Maharashtra: Mumbai).

Type of Relation	Example
Antonyms/ Synonyms	Believer: Atheist, Import: Export, Victory: Defeat, Living: Non-living
Country and Continent	India: Asia, Ghana: Africa, Canada: North America, France: Europe
Country and Capital	China: Beijing, Nepal: Kathmandu, Japan: Tokyo, Sri Lanka: Colombo
Country and Currency	China: Yuan, Japan: Yen, Italy: Lira, Myanmar: Kyat
Country and Parliament	India: Parliament, Afghanistan: Shora, Iran: Majlis, Japan: Diet
Country and National Symbol	India: Ashoka Chakra, Spain: Eagle, France: Lily, Iran: Rose

Country and National Sport	Britain: Cricket, India: Hockey, Japan: Judo, Spain: Bullfighting
Country and River	India: Ganga, China: Yangtze, Italy: Tiber, Britain: Thames
City and River	London: Thames, Rome: Tiber, Paris: Seine, Delhi: Yamuna
City and Industry	Mumbai: Film Production, Manchester: Cotton, Pittsburgh: Iron and Steel, Detroit: Automobiles
State and Capital	Uttar Pradesh: Lucknow, Uttarakhand: Dehradun, Jharkhand: Ranchi, Chhattisgarh: Raipur
Union Territory and Capital	Lakshadweep: Kavaratti, Dadra and Nagar Haveli: Silvassa
State and High Court	Uttar Pradesh: Allahabad, Uttarakhand: Nainital, Rajasthan: Jodhpur, Bihar: Patna
Product and Raw Material	Curd: Milk, Shoe: Leather, Sugar: Sugarcane, Liquor: Grapes
Worker and Product	Goldsmith: Jewellery, Cobbler: Shoes, Cook: Food, Masons: House
Person and Workplace	Doctor: Hospital, Teacher: School, Farmer: Field, Judge: Court
Person and Tool	Blacksmith: Hammer, Mason: Trowel, Farmer: Plough, Carpenter: Saw

Tool and Work	Pen: Writing, Scissors: Cutting, Spoon: Eating, Glasses: Seeing
Animal and Habitat	Lion: Cave, Horse: Stable, Rat: Hole, Bird: Nest, Bee: Beekeeping, Fish: Fishing
Revolution and Production Area	White Revolution: Milk Yellow Revolution: Oilseed
Animal and Sound	Dog: Barking, Lion: Roaring, Horse: Neighing, Cat: Meowing
Animal and Offspring	Dog: Puppy, Lioness: Cub, Cow: Calf, Sheep: Lamb
Disease and Affected Organ	Pyorrhoea: Teeth, Trachoma: Eyes, Jaundice: Liver, Tuberculosis: Lungs
Location and Place	Taj Mahal: Agra, Hawa Mahal: Jaipur, Jahaz Mahal: Mandu, Red Fort: Delhi
Person and Samadhi Place	Mahatma Gandhi: Raj Ghat, Lal Bahadur Shastri: Vijay Ghat, Chaudhary Charan Singh: Kisan Ghat
Sport and Court	Badminton: Court, Hockey: Field, Boxing: Ring, Shooting: Range
Sport and Cup/Trophy	Cricket: Dilip Trophy, Football: Durand Cup, Hockey: Dhyan Chand Trophy, Golf: Ryder Cup
Award and field	Booker Prize: Literature, Grammy Award: Music, Oscar Award: Film

Instructions: In the following question, select the related number from the given alternatives.

Ex: Car: Road :: Rail : ____.

(A) Water (B) Air

(C) Road (D) Track

Ans: Just as a car runs on a road, a train (rail) runs on a track.

Ex: Light: Lumen::__?__:__?__

(A) Temperature: Candela

(B) Density: Kilogram

(C) Pressure: Pascal

(D) Force: Meter

Ans: Lumen is the unit of light, and Pascal is the unit of pressure. Both pairs represent the relationship between a physical quantity and its corresponding unit.

Ex: Person: Biography::__?__:__?__.

(A) World: Encyclopaedia

(B) Nation: History

(C) Place: Economy

(D) Country: Constitution

Ans: A biography is a written account of a person's life, and history is a written account of a nation's past. Both pairs reflect a relationship between a subject and its written or recorded account.

Ex: Just as 'Taj Mahal' is related to 'Agra', in the same way, 'Lal Bagh' is related to which place?

(A) Bengaluru (B) Delhi

(C) Haridwar (D) Madhya Pradesh

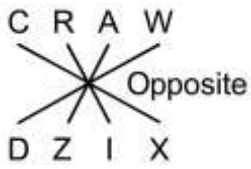
Ans: Just as 'Taj Mahal' is located in Agra, 'Lal Bagh' is located in Bengaluru.

Type-2 Letter Analogy

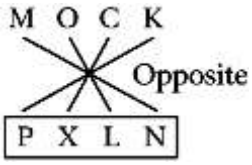
Ex: Select the option that is related to the third term in the same way as the second term is related to the first term.

CRAW: DZIX:: MOCK:?

Ans: For CRAW: DZIX

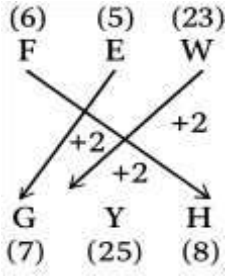


Similarly, for MOCK,

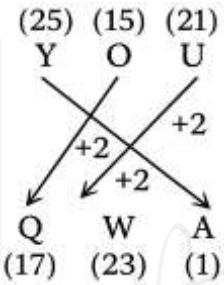


Ex: Select the option that is related to the third letter - cluster in the same way as the second letter -cluster is related to the first letter - cluster. FEW: GYH :: YOU : ?

Ans: For, FEW: GYH

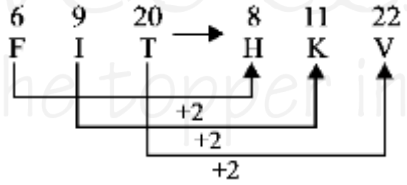


Similarly, YOU:?



Ex: FIT: HKV:: JOB:?

Ans: logic



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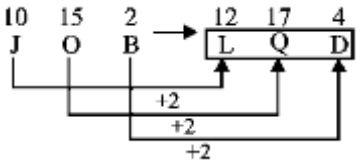


Ans: JOB: LQD

Type-3 Number Analogy

Square

Number	Square	Number	Square
1	1	2	4
3	9	4	16

5	25	6	36
7	49	8	64
9	81	10	100
11	121	12	144
13	169	14	196
15	225	16	256
17	289	18	324
19	361	20	400
21	441	22	484
23	529	24	576
25	625	26	676
27	729	28	784
29	841	30	900
31	961	32	1024
33	1089	34	1156
35	1225	36	1296
37	1369	38	1444
39	1521	40	1600

Cube

Number	Cube	Number	Cube
1	1	2	8
3	27	4	64
5	125	6	216
7	343	8	512
9	729	10	1000
11	1331	12	1728
13	2197	14	2744
15	3375	16	4096
17	4913	18	5832
19	6859	20	8000

Based on square

Ex: 6:36::11: ?

Ans: $6^2=36$, $11^2=121$

Based on cube

Ex: 8:512::10:?

Ans: $8^3=512$, $10^3=1000$

Based on addition

Ex: 389: 392:: 450:?

Ans: 389+3=392 450+3=453

Based on subtraction

Ex: 389:384::450:?

Ans: 389-5=384 450-5=445

Based on multiplication

Ex: 7:56::6:?

Ans: 7×8=56 6×8=48

Based on division

Ex: 35:7::25:?

Ans: 35÷7=5 25÷5=5

Based on number group

Select the set in which the numbers are related in the same way as are the numbers of the following sets. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding /subtracting/ multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

Ex: (15, 25, 35) **(45, 55, 65)**

(1) (55, 65, 75) **(2) (45, 55, 70)**

(3) (55, 75, 85) **(4) (55, 60, 70)**

Ans: Logic

$15 \xrightarrow{+10} 25 \xrightarrow{+10} 35$

$45 \xrightarrow{+10} 55 \xrightarrow{+10} 65$

We check each option.

$55 \xrightarrow{+10} 65 \xrightarrow{+10} 75$

The set that relates in the same way as the given sets is Option (1) (55, 65, 75).

Ex: (7, 49, 343) (8, 64, 512)

(1) (6, 36, 206) (2) (5, 25, 225)

(3) (11, 121, 1221) (4) (9, 81, 729)

Ans: Logic

(7, 49, 343) = $(7,7^2,7^3)$

(8, 64, 512) = $(8,8^2,8^3)$

(6, 36, 206): 36 is 6^2, so it's the square of 6: 206 is not 6^3(which is 216), so this does not follow the pattern.

(5, 25, 225): 25 is 5^2, so it's the square of 5: 225 is 5^3, so it's the cube of 5.

(11, 121, 1221): 121 is 11^2, so it's the square of 11: 1221 is not 11^3(which is 1331), so this does not follow the pattern.

(9, 81, 729): 81 is 9^2, so it's the square of 9:729 is 9^3, so it's the cube of 9.

Option (4) seems to be the most accurate match in terms of following the same pattern.

Ex: (2, 7, 81) (5, 6, 121)

(1) (7, 5, 134) (2) (5, 4, 100)

(3) (6, 2, 36) (4) (6, 7, 169)

Ans:

2+7=9	9^2=81
5+6=11	11^2=121
7+5=12	12^2=144 ≠ 134
5+4=9	9^2=81 ≠ 100
6+2=8	8^2=64 ≠ 36
6+7=13	13^2=169=169

Type- 4 Letter-Number Analogy

- In these types of questions, there is a relationship between English letters and numbers. This relationship can exist in the form of corresponding numbers for the English letters or in other forms.

Ex: Instructions: On the left side of the symbol, a letter/letter pair and numbers are given, and on the right side, a letter/letter pair and a question mark (?) are provided. You need to identify which number from the given options on the right side maintains the same relationship with the right-side letter/letter pair as the left-side letter/letter pair and number.

Ex: Vijay: 05 :: Shubham:?

Ans:
Number of alphabets in 'Vijay' = 5
So, from this logic
Number of alphabets in 'Shubham' =7

Ex: Select the option that is related to the fifth letter-number cluster in the same way as the second letter-number cluster is related to the first letter-number cluster and fourth letter-number cluster is related to third letter-number cluster.

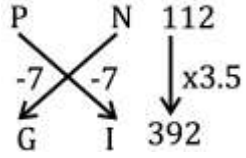
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 Operations on 13 such as adding / subtracting / multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

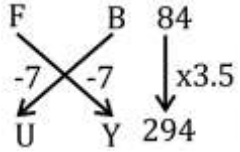
PN112: G1392 :: FB84: UY294 :: AR56:?

1. KT204 2. KT196

3. LS204 4. LS196

Ans:





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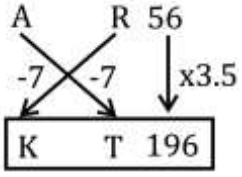


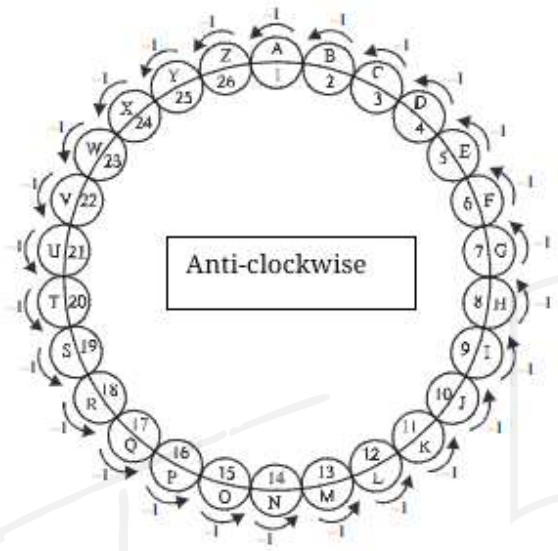
The correct answer is option 2.

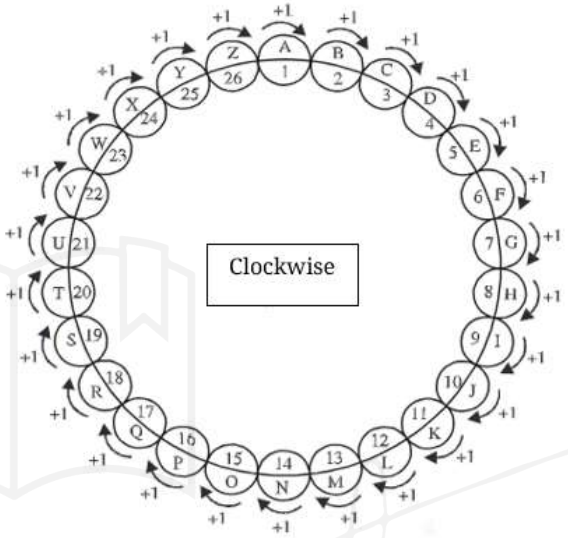
3 CHAPTER

Coding and Decoding

- Coding-decoding is a way of changing a message into a secret form before sending it, so that anyone who doesn't know the key can't understand it.

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



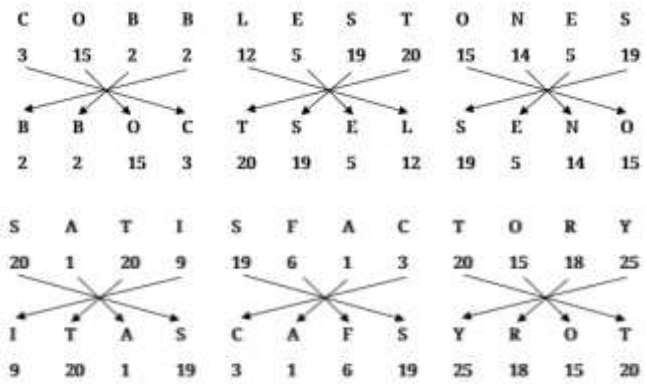


Letter Coding

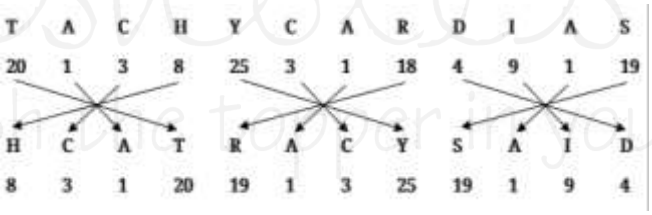
Type-1 Letter Position Change Based Coding

Ex: In a specific code language, the word "COBBLESTONES" is written as "BBOCTSELSENO" and "SATISFACTORY" as "ITASCAFSYROT." How will the word "TACHYCARDIAS" be written in that same code language?

Ans: To decode the pattern:



Similarly,



Hence, "HCATRACYSAID" is the correct answer.

Type-2 Opposite Letter Based Coding

Ex: In a specific code, if FLING is coded as UORMT, how will STICK be coded?

Ans:

- FLING → UORMT
  - ✓ F → U (Reverse of 6th letter of the alphabet)
  - ✓ L → O (Reverse of 12th letter of the alphabet)

- ✓ I → R (Reverse of 9th letter of the alphabet)
- ✓ N → M (Reverse of 14th letter of the alphabet)
- ✓ G → T (Reverse of 7th letter of the alphabet)

Now applying this same logic to STICK:

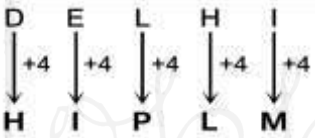
- ➢ STICK
  - ✓ S → H (Reverse of 19th letter of the alphabet)
  - ✓ T → G (Reverse of 20th letter of the alphabet)
  - ✓ I → R (Reverse of 9th letter of the alphabet)
  - ✓ C → X (Reverse of 3rd letter of the alphabet)
  - ✓ K → P (Reverse of 11th letter of the alphabet)

Thus, STICK will be coded as HGXRP.

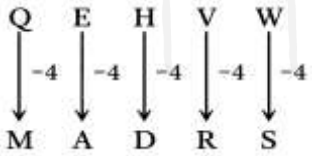
Type-3 Forward Order Letter Coding

Ex: If DELHI is coded as HIPLM, what will be the code for QEHVEW?

Ans:



Similarly,



Type-4 Ascending Order Letter Coding

Ex: In a certain code language, 'BEHOLD' is written as 'BDEHLO' and 'INDEED' is written as 'DDEEIN'. How will 'COURSE' be written in that language?

Ans:

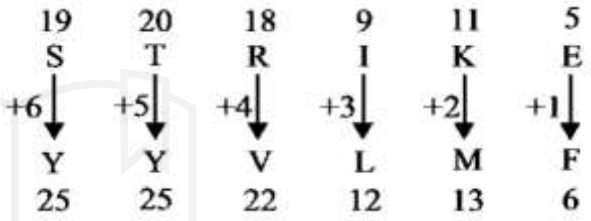
- ➢ BEHOLD → BDEHLO: The letters are rearranged by sorting the letters in ascending order: B, D, E, H, L, O:
  Rearranged output is: BDEHLO
- ➢ INDEED → DDEEIN: Rearranged output: DDEEIN

Now, following this pattern, COURSE will be written as CEORSU.

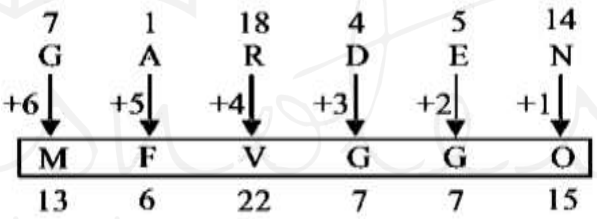
Type-5 Descending Order Letter Coding

Ex: In a certain code language, if 'STRIKE' is written as 'YYVLMF', how will 'GARDEN' be written in that language?

Ans: The first, second, third, fourth, fifth, and sixth letters of the word 'STRIKE' are in an increasing order of six, five, four, three, two, and one, but in a descending sequence.



Similarly,



Type-6 Consecutive Even Number Pattern Coding

Ex: In a certain code language, the word 'CLAIM' is written as 'EPGQW'. What will be the code for the word 'FIGHT' in the same code language?

Ans: The change from each letter of "CLAIM" to "EPGQW" follows a particular pattern:

1. C → E: C + 2 → E
2. L → P: L + 4 → P
3. A → G: A + 6 → G
4. I → Q: I + 8 → Q
5. M → W: M + 10 → W

Now, applying the same pattern to the word 'FIGHT':

1. F → H: F + 2 → H
2. I → M: I + 4 → M
3. G → M: G + 6 → M
4. H → P: H + 8 → P
5. T → D: T + 10 → D

So, the code for 'FIGHT' is 'HMMPD'.

Type-7 Decreasing Order Letter Coding

Ex: In a certain code language, if the word 'TRAIN' is coded as 'SQZHM', how will the word 'DATE' be coded in the same code language?

Ans:

Let's analyse the pattern used to encode the word "TRAIN" as "SQZHM":

1. T → S: T - 1 → S
2. R → Q: R - 1 → Q
3. A → Z: A - 1 → Z
4. I → H: I - 1 → H
5. N → M: N - 1 → M

So, each letter is shifted by -1 (decreased by 1).

Now, applying the same pattern to the word 'DATE':

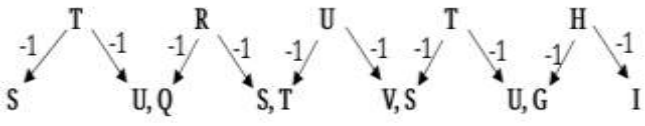
1. D → C: D - 1 → C
2. A → Z: A - 1 → Z
3. T → S: T - 1 → S
4. E → D: E - 1 → D

Thus, the word "DATE" will be coded as 'CZSD'.

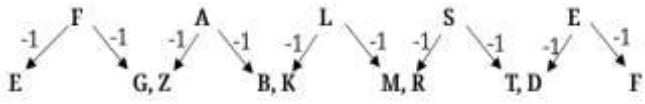
Type-8 Pair of Letters Based Coding

Ex: If the word 'TRUTH' is coded as 'SUQSTVSUGI', what will be the code for 'LIES' in the same code language?

Ans:



Similarly,



Type-9 Number Coding

Ex: In a certain code, if 'HOTEL' is coded as 300, what will be the code for 'HOSTEL'?

Ans:

Code = (sum of positional value of alphabets) x (number of alphabets)

HOTEL = (8 + 15 + 20 + 5 + 12) × (5) = 60 ×5 = 300

HOSTEL = (8 + 15 + 19 + 20 + 5 + 12) × (6) = 79 ×6 = 474

So, code for HOSTEL is 474.

Type-10 Word Coding

Ex: If "wall" is called "window," "window" is called "door," "door" is called "floor," "floor" is called "ceiling," and "ceiling" is called "ventilator," where will a person be standing?

Ans: The chain of transformations is as follows:

Wall → Window → Door → Floor → Ceiling → Ventilator.

So, a person would be standing where the ceiling is called "ventilator." Thus, the correct answer is Ceiling.

Ex: If "eraser" is called "box," "box" is called "pencil," "pencil" is called "bag," and "bag" is called "book," then what will a student use for writing?

Ans: The chain of transformations is as follows:

Eraser → Box → Pencil → Bag → Book.

The student writes with a pencil, which is now called "bag." Hence, the correct answer is Bag.

Type-11 Symbol Coding

Ex: In the given code language, 'this is done' is written as 'koj mor soj', 'that is okay' is written as 'loj roj mor', and 'you are okay' is written as 'hok nok loj'. What is the code for 'that' in this code language?

Ans: Form the sentence 2 and 3 okay = loj

From the sentence 1 and 2 is = mor

In sentence 2, the remaining code corresponds to "that" and is represented by "roj".

Ex: Direction: Study the following information carefully and answer the given questions.

'fate red mobile peace' is coded as 'ka la ho ga'

'prepare and honour fate' is coded as 'mo ta pa ka'

'peace values hero prepare' is coded as 'zi la ne mo'

'prepare values honour fate' is coded as 'zi mo ka ta'

Ex: What is the code for 'fate' in the given code language?

1. ta 2. Ka 3. zi 4. Mo

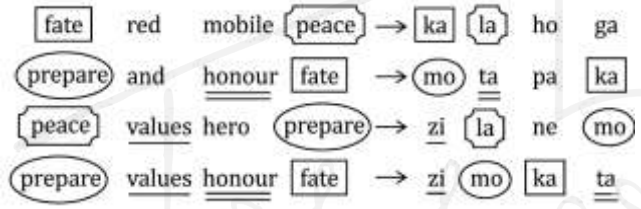
Ex: What is the code for 'peace' in the given code language?

1. ta 2. Mo 3. la 4.Either pa or mo

Ex: What is the code for 'prepare' in the given code language?

1. mo 2. Ta 3. pa 4. ka

Ans:



1. Code for fate is “ka”.
2. Code for peace is “la”.
3. Code for prepare is “mo”.

Ex: In a certain code language, 'MOST' is written as '134' and 'FUR' is written as '90'. How will 'SUCCESS' be written in that language?

Ans:

Logic: Addition of alphabet positional value × 2 = Code

'MOST' is written as '134'

M (13) + O (15) + S (19) + T (20) = 67 × 2 = 134

And, 'FUR' is written as '90'

F (6) + U (21) + R (18) = 45 × 2 = 90

Similarly, 'SUCCESS' be written as

S (19) + U (21) + C (3) + C (3) + E (5) + S (19) + S (19) = 89 × 2 = 178

Hence, the correct answer is "178".

Ex: In a certain code language, 'LIBERTY' is coded as '4221824364050'. How will 'SLAVERY' be coded in that language?

Ans:

Step 1: Arrange letters according to the alphabet’s series.

Step 2: All consonant place values multiply by 2 and it is coded as numeric values.

Step 3: Opposite letter place values of vowels are coded as numeric values.

'LIBERTY' is coded as '4221824364050'.

Step 1: LIBERTY Alphabetical order → BEILRTY.

Step 2: All consonant place values multiply by 2 and it is coded as numeric values.

Step 3: Opposite letter place values of vowels are coded as numeric values.

SLAVERY Alphabetical order - AELRSVY.

Hence, the correct answer is "26222436384450".

Ex: N = 28 and ORE = 76, then how will you code PALE?

Ans: N = 14; 14 × 2 = 28

ORE 15+18+5 38: 38×2 = 76

Similarly. PALE 16+1+12+5= 34; 34 × 2 = 68

Type-12 Analogy Based Coding

Column I contains some words, and their corresponding codes are given in Column II. In the code, it is not necessary that the letters are in the same order as they appear in the words they represent. Each letter has only one code. Carefully study both columns and answer the following questions.

Column I	Column II
(1) HEAD	(a) hlonqsx
(2) ROUTINE	(b) dhpqrs
(3) ENOUGH	(c) efnqr
(4) GHOST	(d) efhnox
(5) MASTER	(e) adeh
(6) NOSE	(f) hnor

Alphabet	N	M	E	H	A	D	G	I	O	R	S	T	U
Code	o	p	h	e	d	a	f	l	n	s	r	q	x

1. The code for D is a.
2. The code for E is h.
3. The code for G is f.
4. The code for I is l.
5. The code for M is p.

4 CHAPTER

Classification Test

- Classification involves organizing words into groups, categories, or classes based on common characteristics, highlighting the differences between them. In this process, three or four words belong to the same group, sharing a common feature, while the remaining word does not fit with the others, making it the odd one out. The task is to identify the word that does not belong to the group.
- **Steps:**
  - ✓ **Understand the Question**: Identify the set and goal (odd one out or grouping).
  - ✓ **Identify Categories**: Group items based on common features (e.g., animals, objects).
  - ✓ **Find the Odd One Out**: Look for differences or unrelated items.
  - ✓ **Use Logical Reasoning**: Compare attributes like function, type, or properties.
  - ✓ **Eliminate Items**: Remove similar items and focus on the odd one.
  - ✓ **Check Patterns**: Look for sequences or relationships between items.

Type-1 Word Classification

In this type of question, a set of words is provided as options; with the exception of one, all the other words belong to the same group, category, or class, whereas the single remaining word belongs to a different—that is, distinct—group, category, or class. You are asked to select this specific word that belongs to a different group, category, or class—that is, the incongruous, mismatched, or dissimilar word. Some of the key similarities among words are as follows:

1. Semantic similarity
2. Functional similarity
3. Structural similarity
4. Numerical similarity
5. Positional similarity
6. Similarity of rank/status
7. Similarity of utility
8. Categorical similarity
9. Similarity based on specific domain relationships
10. Similarity based on internal relationships
11. Technical similarity

Ex: Directions: Out of four words, three have something in common and one is different. Identify the different one.

1. Air fryer **2. Shredder**
3. Scanner **4. Fax machine**

Ans: The logic is based on types of devices.
Air fryer - A kitchen appliance used for cooking.
Shredder - An office device used to destroy documents.
Scanner - An office device used to scan documents.
Fax machine - An office device used to send documents.
Among these, Shredder, Scanner, and Fax machine are office-related devices, while Air fryer is a kitchen appliance.

Ex: Three of the following four words are alike in a certain way and one is different. Select the odd one.

1. Goggles **2. Spectacles**
3. Bifocals **4. Optical Reader**

Ans: Goggles, spectacles, and bifocals are worn by humans, whereas an optical reader is not worn. It is a device commonly found in computer scanners, which captures visual information and converts it into digital data that the computer can process and display. Therefore, option 4 is the correct answer.

Type-2 Word Pair Based Classification

Ex: Directions: In each of the following questions, certain pairs of words are given, out of which the words in all pairs except one, bear a certain common relationship. Choose the pair in which the words are differently related

1. Sky: Cloud **2. Purse: Wallet**

3. Cupboard: Almirah **4. Chair: Stool**

Ans:

(1) Sky: Cloud → Cloud is not a type of Sky.

(2) Purse: Wallet → Wallet is a type of Purse.

(3) Cupboard: Almirah → Almirah is a type of Cupboard.

(4) Chair: Stool → Stool is a type of Chair.

Hence, Sky: Cloud is the odd one out.

Ex: Four pair of words have been given, out of which three pairs are alike in some manner and one is different. Select the pair of words that is different.

1. Boxing: Ring **2. Golf: Course**

3. Baseball: Diamond **4. Pool: Swimming**

Ans:

Sports	**Play area**
Boxing	Ring
Golf	Course
Baseball	Diamond
Swimming	Pool

Here in Option 4, Play area is given first and then the sport. Whereas in other options, the sport is given first and then the play area.

Type-3 Letter Classification

Ex: Three of the four letter-clusters in the given options are alike in a certain way and thus form a group. Find the one that does not belong to that group

1. USX **2. OMR**

3. LJO **4. RPV**

Ans:

U $\xrightarrow{-2}$ S $\xrightarrow{+5}$ X

O $\xrightarrow{-2}$ M $\xrightarrow{+5}$ R

L $\xrightarrow{-2}$ J $\xrightarrow{+5}$ O

R $\xrightarrow{-2}$ P $\xrightarrow{+4}$ V

Thus, out of all 'RPV' is the odd one out.

Ex: Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

1. WY-PS **2. PR-GI**

3. RT-IK **4. VX-MO**

Ans:

W (23) $\xrightarrow{-7}$ P (16)

Y (25) $\xrightarrow{-6}$ S (19)

P (16) $\xrightarrow{-9}$ G (7)

R (18) $\xrightarrow{-9}$ I (9)

R (18) $\xrightarrow{-9}$ I (9)

T (20) $\xrightarrow{-9}$ K (11)

V (22) $\xrightarrow{-9}$ M (13)

X (24) $\xrightarrow{-9}$ O (15)

Thus, out of all 'WYPS' is the odd one out.

Ex: Four words are given out of which three are alike in a certain way and one is different. Select the odd one out.

1. CHEST **2. NIGHT**

3. BLACK **4. TRUTH**

Ans: The pattern follows here is;

(1) CHEST (E i.e. Vowel in the middle of the Word)

(2) NIGHT (I i.e. Vowel is not in the middle of the Word)

(3) BLACK (A i.e. Vowel in the middle of the Word)

(4) TRUTH (U i.e. Vowel in the middle of the Word)

Hence, the correct answer is "NIGHT".

Ex: Choose the odd one out of the given options.

1. BIJ **2. DGJ**

3. FGH **4. CHI**

Ans:

Option	Letter	Position Value of Letter
1	BIJ	2 + 9 + 10 = 21
2	DGJ	4 + 7 + 10 = 21
3	FGH	6 + 7 + 8 = 21
4	CHI	3 + 8 + 9 = 20

Hence, "CHI" is the correct option.

Ex: Three of the following four letter-clusters are alike in a certain way and is different. Find the odd one out.

1. KORVA **2. TXBFJ**

3. NRVZD **4. PTXBF**

Ans:

KORVA → K+4=O, O + 3 = R, R + 4 = V, V + 5 = A

TXBFJ → T+4= X, X + 4 = B, B + 4 = F, F + 4 = J

NRVZD → N + 4 = R, R + 4 = V, V + 4 = Z, Z + 4 = D

PTXBF → P+4=T, T + 4 = X, X + 4 = B, B + 4 = F

Hence, 'KORVA' is the odd one out.

Ex: Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.

1. BASK **2. SPIT**

3. TRAM **4. MOVE**

Ans:

1. BASK → 3 Consonants, 1 Vowel
2. SPIT → 3 Consonants, 1 Vowel
3. TRAM → 3 Consonants, 1 Vowel
4. MOVE → 2 Consonants, 2 Vowels

Hence, 'MOVE' is the odd one out.

Type-4 Number Classification

Priority lists to be followed in exams according to their preferences are:

1. Prime number.
2. Square.
3. Cube.
4. Multiplication and divisions
5. Addition and subtraction.

Ex: Find the odd one out in each of these questions.

1. 69, 43 **2. 63,47**

3. 34,85 **4. 65, 23**

Ans:

69, 43 Composite number and prime number

63, 47 Composite number and prime number

34, 85 Both Composite numbers

65, 23 Composite number and prime number

In the following question, four number pairs are given. In each pair the number on left side of (-) is related to the number of the right side of (-) with some Logic/Rule/Relation. Three pairs are similar on the basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.

(NOTE: Operations should be performed on the whole numbers, without breaking down the number into its constituent digits. E.g. 13 Operations on 13 such as adding / subtracting / multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

Ex: 1. 13-169 **2. 12-144**

3. 11-121 **4. 10-110**

Ans: Logic: (First number)^2 = Second number

$(13)^2 = 169$ $(12)^2 = 144$

$(11)^2 = 121$ $(10)^2 = 100 \neq 110$

Hence, the correct answer is "Option 4".

Ex: 1. 11408-10818 **2. 10806-10216**

3. 9762-9182 **4. 8644-8054**

Ans:

11408-10818 = 590

10806-10216 = 590

9762-9182 = 580

8644-8054 = 590

Hence, the correct answer is "Option 3".

Ex: 1. 28125-3125 **2. 11322-1258**

3. 49374-5483 **4. 49401-5489**

Ans: Logic: 1st number + 9 = 2nd number.

28125 - 3125 → 28125/9 = 3125

11322 - 1258 → 11322/9 = 1258

49374 - 5483 → 49374/9 =5486 ≠5483.

49401 - 5489 → 49401/9 = 5489

So, '49374-5483' odd among the given options.

Ex: 1. 829 **2.643**

3. 821 **4. 237**

Ans: Logic: Numbers are prime numbers except only one number.

1) 829: Prime number (divisible only by 1 and 829)
2) 821: Prime number (divisible only by 1 and 821)

3) 643: Prime number (divisible only by 1 and 643)
4) 237: Not prime number (divisible by 1, 3, 79 and 237)

Ex: Four options have been given out of which three are alike in some manner, while one is different. Choose the odd one.

1. 2321 **2. 825**
3. 1521 **4. 968**

Ans: All the numbers except option (3), the given numbers are the multiple of 11.
Option 1: 2321 → Multiple of 11
Option2: 825 → Multiple of 11
Option3: 1521 → Not a multiple of 11
Option4: 968 → Multiple of 11
Therefore, 1521 is the odd one option.

Ex: Three of the following four number-pairs are alike in a certain way and one is different. Select the one that is different.

1. 5:105 **2. 6:180**
3. 7:294 **4. 3:18**

Ans:
5:105 → 5^3- 5^2 → 125-25= 100
6:180 → 6^3-6^2 → 216-36= 180
7:294 → 7^3-7^2 → 343-49= 294
3:18 → 3^3-3^2 → 27-9=18
Hence, 5: 105 is different from other three alternatives.

Ex: In the following question, four number groups are given. In each group the three numbers are related to each other by some Logic/Rule/ Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.

1. (12, 24, 41) **2. (13, 26, 43)**
3. (16, 32, 49) **4. (17, 34, 53)**

Ans:
(12, 24, 41) → 12 × 2 = 24
24+17=41
(13, 26, 43) → 13 × 2 = 26
26 + 17 = 43
(16, 32, 49) → 16 × 2 = 32
32+17=49
(17, 34, 53) → 17 × 2 = 34
34 + 17 =51 ≠ 53
Hence, "(17, 34, 53)" is the odd one out.

Ex: Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the one that is different.

1. 548-105 **2. 113-15**
3. 166-73 **4. 316-46**

Ans:
Option 1 → $5^2 + 4^2 + 8^2 = 105$
Option 2 → $1^2 + 1^2 + 3^2 = 11 \neq 15$
Option 3 → $1^2 + 6^2 + 6^2 = 73$
Option 4 → $3^2 + 1^2 + 6^2 = 46$
All option follows the same pattern, except '113-15'

Ex: Select the odd numbers from the given alternatives.

1. 94 2. 63 3. 35 4. 18

Ans:94 → reverse 49 → 7^2
63 → reverse 36 → 6^2
35 → reverse 53 → no square
18 → reverse 81 → 9^2

Ex: In the following question, four groups of three numbers are given. In each group, numbers are related by a Logic/Rule/Relation. Three are similar on the basis of the same Rule/Relation/Logic. Select the odd one from the given alternatives.

1. (8, 43, 29) **2. (11, 58, 38)**
3. (14, 73, 47) **4. (17, 72, 90)**

Ans:
(8, 43, 29) → (8 × 5) + 3 = 43, (8 × 3) + 5 = 29
(11, 58, 38) → (11 × 5) + 3 = 58, (11 × 3) + 5 = 38
(14, 73, 47) → (14 × 5) + 3 = 73, (14 × 3) + 5 = 47
(17, 72, 90) → (17 × 5) + 3 =88 ≠72; (17 × 3) + 5 =56 ≠90
Hence, (17, 72, 90) is the odd one out.