



# Distance Learning Programme

UPSC Prelims

## CSAT General Mental Ability







drishti

# **CSAT GENERAL MENTAL ABILITY**


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# 1

## CHAPTER

# ANALOGY

From analogy, we mean that – of one kind or similarity. Therefore, objective of solving questions of this chapter is to understand the similarity between given objects or to analyse the inherent internal relation among given groups.

**Question type (1):** In this type of questions, two objects related to a particular relation are given and a third object and some options are given. We have to find out that out of the given options, which one has the same relation with the third object as first object has with the second.

**Example 1:** Peacock : India :: Kangaroo : ?

**Answer:** Australia

∴ To solve questions of analogy, we need to do following two works–

1. To understand the relation between two words/letter groups/numbers given in the question, and then
2. To select the correct option from given options related with the third words/letter groups/number.

**Example 2:** 43 : 12 :: 84 : ?

**Answer:** Here the relation between first two numbers is that the second number is the product of digits of first number. i.e.  $4 \times 3 = 12$

∴ fourth number =  $8 \times 4 = 32$

**Question type (2):** In this type of questions, three words are given who have some common specialities. For every question, few options are given in which any one has same speciality as the question's words have. We have to choose that option.

**Example 3:** Fruit, Flower, Stem

- (a) fragrance                      (b) forest                      (c) grass                      (d) leaf

**Answer:** Right answer = (d) leaf, because all the three words given in the question are organs of a tree and leaf is also an organ of the tree.

**Question type (3):** In this type of questions also, few words are given which have a common feature. One of the option given below the question shows that relation or common feature. We have to find out the correct option.

**Example 4:** Panther, Tiger, Lion

- (a) Extinct                      (b) Circus                      (c) Carnivorous                      (d) Zoo

**Answer:** (c) because this is the best suitable feature which identifies the words given in the question.

**Question type (4):** Four options are given in this type of questions in which any three hold some certain speciality while the fourth is different from other there. We have to find out the fourth option.

**Example 5:**

- (a) 52 – 6                      (b) 48 – 8                      (c) 64 – 4                      (d) 84 – 7

**Answer:** (a) because in other three opinions, first number is divided by the second but 52 is not divisible of 6.

**EXERCISE**

**Instruction for Q. No. 1 to 19:** *Keeping in mind the relation between numbers of the first pair, find the possible number for the 2nd pair from the options.*

1. 43 : 12 :: 84 : ?  
(a) 46 (b) 32  
(c) 12 (d) None of these
2. 54 : 20 :: 72 : ?  
(a) 31 (b) 27  
(c) 14 (d) None of these
3. 62 : 12 :: 81 : ?  
(a) 8 (b) 11  
(c) 27 (d) None of these
4. 15 : 32 :: 12 : ?  
(a) 22 (b) 42  
(c) 26 (d) None of these
5. 22 : 46 :: 18 : ?  
(a) 34 (b) 38  
(c) 42 (d) None of these
6. 27 : 58 :: 21 : ?  
(a) 46 (b) 48  
(c) 54 (d) None of these
7. 422 : 21 :: 366 : ?  
(a) 18 (b) 66  
(c) 36 (d) 6
8. AD : ZW :: CF : ?  
(a) VU (b) XU  
(c) XZ (d) ZU
9. GC : TX :: FB : ?  
(a) UY (b) VX  
(c) UZ (d) YU
10. AD : WZ :: CF : ?  
(a) UX (b) XU  
(c) ZX (d) XZ
11. GC : XT :: IE : ?  
(a) RU (b) SV  
(c) VR (d) UR
12. RAM : 49 :: JON : ?  
(a) 42 (b) 39  
(c) 34 (d) 48
13. RAM : 32 :: SHAM : ?  
(a) 67 (b) 36  
(c) 41 (d) 54
14. RAM : 49 :: SHAM : ?  
(a) 67 (b) 36  
(c) 41 (d) 54

15. CXEV : EVGT :: AZGT : ?  
(a) DYBW (b) CXIR  
(c) CVET (d) None of these
16. RAMA : UDPD :: MONA : ?  
(a) PRQD (b) OPQR  
(c) ZYST (d) STUV
17. BLACK : DXBFV :: CAGE : ?  
(a) XZWT (b) DBFC  
(c) ZXYT (d) FBNJ
18. BLACK : YOZXP :: CAGE : ?  
(a) DBFC (b) ZXYT  
(c) XZTV (d) FBNJ
19.  $\frac{F}{I} : \frac{21}{18} :: \frac{D}{L} : ?$   
(a)  $\frac{23}{15}$  (b)  $\frac{4}{15}$   
(c)  $\frac{23}{12}$  (d) None of these

**Instruction for Q. No. 20 to 29:** *Three words are given in the following questions which have common feature. Four options are given below the three words, one of which has that same common feature. Find the word.*

20. Fruit, Flower, Stem  
(a) Scent (b) Leaf  
(c) Vegetation (d) Forest
21. Cricket, Tennis, Kabaddi  
(a) Game (b) Field  
(c) Football (d) Team
22. High Jump, Race, Javelin throw  
(a) Shot put (b) Cricket  
(c) Hockey (d) Kabaddi
23. Combodia, Myanmar, Thailand  
(a) Australia (b) Sri Lanka  
(c) Mongolia (d) Vietnam
24. Istanbul, Beijing, London  
(a) Mumbai (b) Shanghai  
(c) Tehran (d) Sidney
25. Cow, Buffalo, Sheep  
(a) Elephant  
(b) Giraffe  
(c) Tiger  
(d) Donkey



26. Dollar, Rupee, Yuan

- (a) Euro
- (b) Business
- (c) Visa
- (d) United Nations

27. Chess, Carrom Board, Table Tennis

- (a) Game
- (b) Cricket
- (c) Billiards
- (d) Polo

28. Motorcycle, Car, Cycle

- (a) Scooter
- (b) Aeroplane
- (c) Metro
- (d) Bus

29. Lucknow, Bhubaneshwar, Shillong

- (a) Kanpur
- (b) Bengaluru
- (c) Surat
- (d) Pune

**Instructions for Q. No. 30 to 37:** Three words are given in the following questions. Four options are given below these questions, one of which is representative of the three words. Find that option.

30. Cheetah, Lion, Tiger

- (a) Zoo
- (b) Extinct
- (c) Circus
- (d) Carnivorous

31. Cow, Dog, Buffalo

- (a) Herbivorous
- (b) Domestic
- (c) Milk
- (d) Black

32. Goat, Sheep, Monkey

- (a) Herbivorous
- (b) Skin
- (c) Tree
- (d) Domestic

33. Cub, Calf, Pup

- (a) Innocent
- (b) Offspring
- (c) Cute
- (d) Attractive

34. Shirt, Pant, Coat

- (a) Black
- (b) Jeans
- (c) Cloth
- (d) Lower Clothes

35. Bungalow, Flat, Building

- (a) Apartment
- (b) House
- (c) Brick
- (d) Paint and Furniture

36. Delhi, Kolkata, Mumbai

- (a) Metropolitan
- (b) Population
- (c) Metro Rail
- (d) Chennai

37. Qutub Minar, Taj Mahal, Red Fort

- (a) Marble
- (b) Shahjahan
- (c) Ancient residential Buildings
- (d) Heritage

**Instructions for Q. No. 38 to 46:** Three out of four options given in the following questions are somehow different from one option and they form a group of themselves in this way. Find out the option which is different from other three options. Find out the one which is different from these three?

38. (a) 52 – 6 (b) 48 – 8

(c) 64 – 4 (d) 84 – 7

39. (a) 8 (b) 4

(c) 125 (d) 64

40. (a) 8 (b) 4

(c) 25 (d) 64

41. (a) 74 (b) 63

(c) 37 (d) 57

42. (a) BATGZY

(b) CAPKZX

(c) DOGTLW

(d) OXFAME

43. (a) 12 – 144 (b) 8 – 96

(c) 13 – 143 (d) 11 – 132

44. (a) 17 – 85 (b) 18 – 80

(c) 20 – 100 (d) 19 – 95

45. (a) H - U (b) J - Q

(c) K - P (d) G - T

46. (a) IAS – Indian Administrative Service

(b) IPS – Indian Police Service

(c) IFOS – Indian Forest Service

(d) IRS – Indian Revenue Service

47. RAM : 32 :: JON : ?

(a) 42 (b) 39

(c) 34 (d) 48

## ANSWERS

1. (b) 2. (c) 3. (a) 4. (c) 5. (b) 6. (a) 7. (d) 8. (b) 9. (a) 10. (a)  
 11. (c) 12. (a) 13. (c) 14. (a) 15. (b) 16. (a) 17. (d) 18. (c) 19. (a) 20. (b)  
 21. (c) 22. (a) 23. (d) 24. (c) 25. (d) 26. (a) 27. (c) 28. (a) 29. (b) 30. (d)  
 31. (b) 32. (a) 33. (b) 34. (c) 35. (b) 36. (a) 37. (d) 38. (a) 39. (b) 40. (a)  
 41. (c) 42. (d) 43. (c) 44. (b) 45. (a) 46. (d) 47. (b)

**SOLUTIONS**

1.  $43 : 12 :: 84 : ?$   
 $\therefore 12 = 4 \times 3$   
 $\therefore 8 \times 4 = 32$
2.  $54 : 20 :: 72 : ?$   
 $\therefore 5 \times 4 = 20$   
 $\Rightarrow 7 \times 2 = 14$
3.  $62 : 12 :: 81 : ?$   
 $\therefore 6 \times 2 = 12$   
 $\Rightarrow 8 \times 1 = 8$
4.  $15 : 32 :: 12 : ?$   
 $\therefore 15 \times 2 + 2 = 32$   
 $\Rightarrow 12 \times 2 + 2 = 26$
5.  $22 : 46 :: 18 : ?$   
 $22 \times 2 + 2 = 46$   
 $\Rightarrow 8 \times 2 + 2 = 38$
6.  $27 : 58 :: 21 : ?$   
 $27 \times 2 + 4 = 58$   
 $\Rightarrow 21 \times 2 + 4 = 46$
7.  $422 : 21 :: 366 : ?$   
 $\therefore 422 \Rightarrow \frac{42}{2} = 21$   
 $\therefore 366 \Rightarrow \frac{36}{6} = 6$
8.  $\therefore AD : ZW :: CF : XU$  because  

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Z	Y	X	W	V	U	T	S	R	Q	P	O	N	M	L	K	J	I	H	G	F	E
W	X	Y	Z																		
D	C	B	A																		
9. According to the chart in question number 8.  
 $GC : TX :: FB : UY$
10.  $AD : WZ :: CF : UX$
11.  $GC : XT \Rightarrow IE : VR$
12.  $RAM = 9 + 26 + 14 = 49$   
(Positional number from right)  
 $\Rightarrow JON = 17 + 12 + 13 = 42$
13.  $RAM = 18 + 1 + 13 = 32$   
(Positional number from right)  
 $\Rightarrow SHAM = 19 + 8 + 1 + 13 = 41$
14.  $RAM = 9 + 26 + 14 = 49$   
 $\Rightarrow SHAM = 8 + 19 + 26 + 14 = 67$
15.  $C X E V : E V G T$   
 $\Rightarrow A Z G T : C X I R = CXIR$
16.  $R A M A : U D P D$   
 $\Rightarrow MONA = PRQD$
17.  $B L A C K : D X B F V :: C A G E : F B N J$   
 $3 \times 2 = 6$   
 $11 \times 2 = 22$   
 $12 \times 2 = 24$   
 $2 \times 2 = 4$   
 $1 \times 2 = 2$
18.  $B L A C K : Y O Z X P$   
 $2 \ 12 \ 1 \ 3 \ 11$  (From left)  
 $2 \ 12 \ 1 \ 3 \ 11$  (From Right)  
 $\Rightarrow C A G E : X Z T V$   
 $3 \ 1 \ 7 \ 5$  (from right)
19.  $\therefore \frac{F}{I} : \frac{21}{18} :: \frac{D}{L} = \frac{23}{15}$   
(Positional number from right)
20. Fruit, flower and stem are organs of a tree similarly leaf is also an organ of tree.
21. Cricket, Tennis and Kabaddi are name of the games. Football is also name of a game.
22. The given three are related to athletics. Similarly shot put is related to this group.
23. The given three countries are South-West Asian countries and ASEAN members. In given options. Only Vietnam is an ASEAN member.

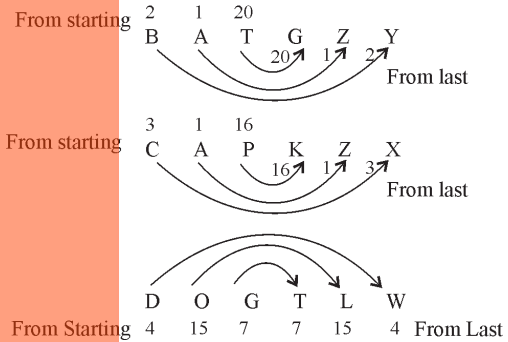


24. The given three are capital cities. Tehran is the capital of Iran.
25. The given three are domestic animals. Donkey is a domestic animal.  $\therefore$  Correct answer = Donkey.
26. The given three are country's currency. Euro is also a currency. Hence correct answer = Euro
27. The given three are indoor games. Billiards is an indoor game.
28. The given three are personal vehicles. Scooter is a personal vehicle.
29. The given three cities are state's capital. Bangaluru is Karnataka's capital.
30. Common characteristics of all the three animals is that they are carnivorous.
31. All three are domestic animals.
32. All three are herbivorous.
33. All three are off springs of different animals.
34. All three are clothes.
35. All three are type of houses.
36. All three are metro cities.
37. All three are heritage.
38. 52 – 6, because in the other three, first numbers is are divisible of respective second number.
39. 4, because the other three are cubes of any natural numbers–  $8 = 2^3$ ,  $125 = 5^3$ ,  $64 = 4^3$
40. 8, because the other three are squares of any natural number–  $4 = 2^2$ ,  $25 = 5^2$ ,  $64 = 8^2$
41. 37, because it is an indivisible number while the other three are divisible numbers.
42.  $\therefore$  Option (a), (b) and (c) follows some certain rules.
- 47.

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
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
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

$$\therefore \text{RAM} = 18 + 1 + 13 = 32$$

$$\Rightarrow \text{JON} = 10 + 15 + 14 = 39$$



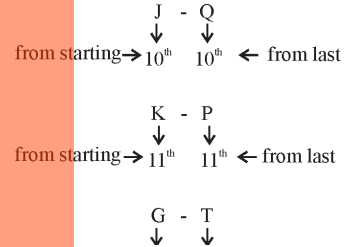
Option (d) is not following this rule.

43. (13 – 143), because

$$\frac{144}{12} = 12, \frac{96}{8} = 12, \frac{132}{11} = 12$$

but  $\frac{143}{13} = 11$

44. 18 – 80, because in other three, the second number is five times the first number.
45. H – U; because there is a follow-up of certain series in the other three.



46. Indian Revenue Service; because the other three services are all India services.





# 2

## CHAPTER

# CODING & DECODING

Coding is a method of sending information secretly in which informations are to be changed according to a certain rule and only those persons can read that informations who know the rule. Here the changing of information on the basis of some particular rule is called coding and obtaining the actual information on the basis of rule's knowledge is called decoding.

That means process of changing of a meaningful word in a meaningless word or number-pairs or numerals is called coding.

**For Example:** Ram = 18.1.13 and Sita = 11.9.20.1 is a coding where every character of the word is replaced by the numerals of its position in alphabet.

Similarly, changing of coded word/sentence or numbers in meaningful words or sentence is called decoding.

It is clear from the above statements that the formula to solve questions related to this chapter is to identify the rule by which the informations are changed in a code.

Different coding rules apply to different questions generally. So, it is unnecessary to remember beforehand any coding rule.

Following coding rules are given only to make you understand that how coding is done.

1. Coding on the basis of serial number of words is alphabet. For example-

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

Hence RAM = 18.1.13 and TANU = 20.1.14.21

2. Coding on the basis of opposite serial number of words in alphabet for example: A – 26, B – 25, C – 24, D – 23, Z – 1, Y – 2, X – 3, W – 4
3. Coding by oppositing words for example: A – Z, B – Y, C – X, D – W etc.
4. Shifting the position of words. For example: A – E, P – T, C – G; words after 3 places.
5. Word replacement coding, for example: If cloud is white, white is sky, sky is blue, blue is black and black is green then what is the colour of elephant? Answer: Green, because colour of elephant = black → green.
6. Coding with the help of some special symbol for example: If \$ for A, € for B, ψ for R and φ for M is coded then the code for RAM = ψ\$φ

## EXERCISE

1. If sky is water, water is yellow, yellow is blue, blue is fish, fish is crow, crow is bird and bird is sky in a coding language then where does the crow live?
  - (a) In sky
  - (b) In water
  - (c) In yellow
  - (d) In bird
2. If meaning of 253 is 'Book are old' meaning of 546 is 'Man is old' and meaning of 378 is 'Buy good book' in a coding language what is the symbol of 'are' in this language?
  - (a) 5
  - (b) 4
  - (c) 2
  - (d) None of these



3. Meaning of 'gnr mmr rrg' is 'America has bomb' and 'gnr mmr ggr' is 'Russia has bomb' in a coding language. If meaning of 'mmr' is 'has' in this language then what will be the symbol for 'Russia has America'?
- rrg mmr ggr
  - ggr gnr mmr
  - None of the above
  - Informations are insufficient
4. If fire is water, water is wind, wind is wood, wood is table, table is petrol, petrol is expensive, expensive is matchbox, matchbox is weapon and weapon is gun in a coding language then gun is made of:
- Wood
  - Table
  - Fire
  - Water
- Instructions for the Q. No. 5 and 6:** *If in a coding language:*
- Meaning of 'Poki top hai' is 'Ram is playing cards'.
  - Meaning of 'Kop ja ki hai' is 'Amar is playing tennis'.
  - Meaning of 'top so up tep' is 'Ram runs very fast'.
  - Meaning of 'ja so up tep' is 'Tennis runs very fast', then
5. What is the code of 'Tennis is playing card'?
- ja is top tep
  - top so tep up
  - Ja ki Hai Po
  - Ja so Kop Hai
6. What is the meaning of 'Kop so up tep'?
- Amar runs very fast
  - Amar is playing cards
  - None of these
  - Informations are insufficient
7. If meaning of 1234 is 'up down top ten', 1289 is 'top ten boy come' and 2984 is 'top boy come up' then what is the symbol of ten?
- 1
  - 2
  - 3
  - 4
8. If GROUPING is written as 12345671 in a coding language then what will be the code of GOPING in this language?
- 134571
  - 135671
  - 234671
  - 135571
9. If GOAL is written as 35 and DUKE as 41 in a coding language then what will be written for FAITH in this language?
- 29
  - 36
  - 44
  - 52
10. If code of PUFF is '+ - \$\$', code of GULF is '× - • \$' and code of PULLER is '+ - • ₹@' then what will be code of GUFER in this language?
- × - ₹@
  - × + ₹@•
  - × ₹@ - •
  - ₹@× - •
- Instructions for Q. No. 11 to 15:** *If in a coding language mathematical symbol of + is used for A, - for E, × for I and numerical positions of other alphabets is used i.e. B = 2, C = 3, D = 4, F = 6, then answer the following questions completing all mathematical operations.*
11. What will be the value of TEPAR in this coding language?
- 36
  - 18
  - 28
  - 22
12. What will be the value of BCIF in this coding language?
- 36
  - 218
  - 138
  - 168
13. What will be the value of BANIB in this coding language?
- 24
  - 30
  - 32
  - 28
14. If value of O is replaced by (•) (decimal point) which means BANOP = (2+14)•(16) = 16.16 then what will be the value of KANONAP?
- 25.30
  - 25.16
  - 32.156
  - 124.156
15. What will be the value of BANODIC?
- 12.16
  - 14.43
  - 16.493
  - 16.12
- Instructions for Q. No. 16 and 17:** *If 26 words of English alphabets are arranged anti clockwise on a circular watch in such way that A falls on 12 and N falls on 6 then*
16. When small needle is between T and U and big needle is at A then how much time is there?
- 9.00
  - 9.30
  - 3.00
  - 5.00
17. When the time is 9:00 then where are the needles?
- Small between T and S, big at N
  - Small between H and I, big at A
  - Small between G and H, big at A
  - Small between X and Y, big at N