CUET - UG

Common University Entrance Test

National Testing Agency

General Test

Reasoning

CUET - UG

Reasoning

CODING DECODING

coding is the process of assigning a code to Something for classification or identification.

Decoding is the reverse process of coding. Here coded message is deciphered.

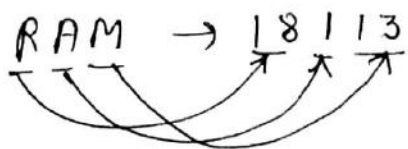There are three methods which are mostly used in coding and decoding.

a) According to place Value

b) opposite letter relation / F-26 rule

c) Cyclic use/ F-13 rule.

a) According to plane value:

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

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

Que If E = S , RAM = 18113 then SHYAM = ?

Soln   5 is place value of E

RAM → 18 1 13   So SHYAM → 19 8 25 1 13

Que If ON = 15 14 , OLD = 15 12 4 then SING = ?

Sol^n O N → 15 14

OLD → 15 12 4

SING → 19 9 14 7

b) Opposite letter ruletion / formula - 26 rule :−

A	B		C		D	E	F	G	H	I	J	K	L	M
Z	Y		X		W	V	U	T	S	R	Q	P	O	N
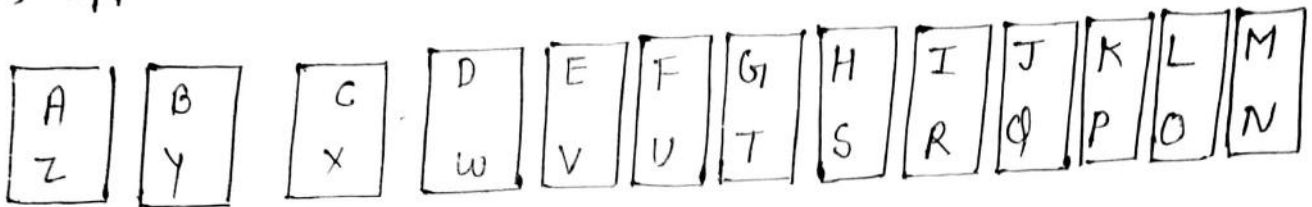
Here in this method sum of opposite letters be 27

like :   A → 1   D → 4   J → 10

Z → $\dfrac{26}{27}$ W → $\dfrac{23}{27}$ Q → $\dfrac{17}{27}$

If we are given G and asked opposite letter then place value of G is 7

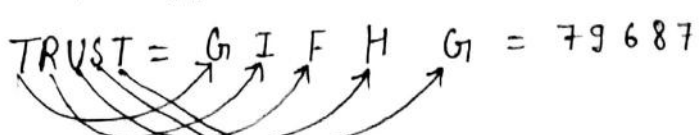opposite letter 27 − 7 = 20 → T (on place value 20) this comes

Que If Rust = 9 6 8 7 , P = 11 then Trust = ?

Sol^n R U S T   P   ∵ Here place values are given
   ↓ ↓ ↓ ↓   ↓   of opposite letter so
   9 6 8 7   11
   (I)(F)(H)(G)   (K)   TRUST = G I F H G = 7 9 6 8 7

Que If K=16, PEN = 1 1 22 13 then CAT = ?

Sol^m   K → P = 16   P E N → K Y M = 1 1 22 13

So

    CAT → X Z G = 24 26 7

c) Cyclic Use/ formula -13 :

Here difference of opposite number and the number should be 13.

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

like A = 1   F = 6
then   then
Cyclic opposite = 1+13   cyclic opposite = 6+13
             = 14 = N   = 19 = S

Que If C=16, DOG = 17 22 0 then CAT = ?

Sol^m

    C → P = 16   D O G → Q B T = 17 2 20

    CAT → P N G = 16 14 7

Que If L = 25   HOME = 2122618   then PLUS = ?

Sol^m   L → Y = 25

HOME → UBZR = 21 22 2 6 18

PLUS → CYHF → 3 25 86

→ There are other criteria, on the basis of that coding is done.
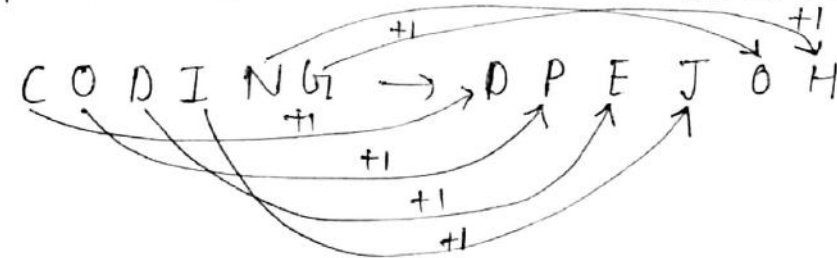
- **PLUS (+) :**

  Like : +1   +1   +1   +1
          +1   +2   +3   +4
          +4   +3   +2   +1
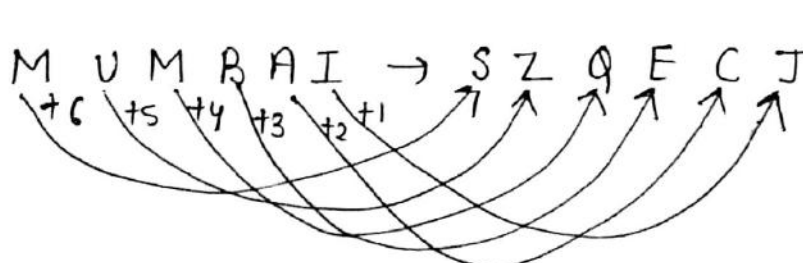   +1   +2   +1   +2 ... etc

Que If CODING = DPEJOH then DECODING = ?

Sol^m   C O D I N G → D P E J O H

DECODING → EFDPEJOH

Que If MUMBAI = SZQECJ then JAIPUR = ?

Sol^m   M U M B A I → S Z Q E C J

+6 +5 +4 +3 +2 +1

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SYLLOGISM

A Syllogism is a kind of logical arguement that applies deductive reasoning to arrive at a Conclusion based On two or more propositions that are asserted or assumed to be true.

These are Understood or Solved with help of Venn diagram. These are two few Points Which are needed to keep in mind While Solving questions So We Can Solve the question With speed.

- <u>Some A are B</u>
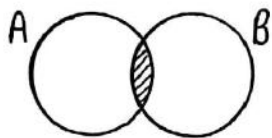
∵ Here, We Can interpret that Only, Some A are B and Some B are A We Can't Say anything about all A are B.

- <u>All A are B</u>
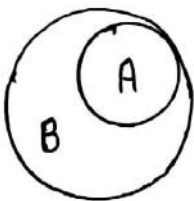
∵ All A are B here is true But all B are A is not true, Only inside to Outside is Possible, We Can Say Some B are definetly A.

- <u>No A is B</u>

∵ If no A is B then there will be no B which is A.

- ## Some A are not B

∵ If Some A are not B then
We Can Same A are not B, We
Can't Say Some B are not A, Here
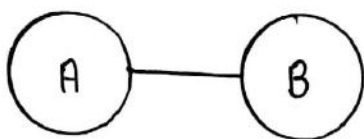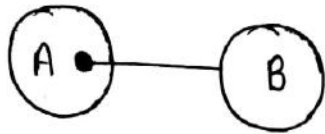the Case of Possibility.

- With the help of Positive Sentences, We Can't assume Conclusion.
- When the Conclusion is given in the Form.

    (a) Some A are B

    (b) No A is B

then in Such Case, we choose "either a or b".

Que:- In the questions given below, these are two Statements
   following by two Conclusion I and II, Assuming the two
   Statements are true, decide which One of the Conclusion
   logically follows, disregarding Commonly known facts.

Que-1 ⇒   Statements:

    (a) All Poets are intelligent
    (b) All dancers are intelligent

Conclusion:-

    (1) All dancers are Poets
    (2) Same intelligent Person are not dancer.
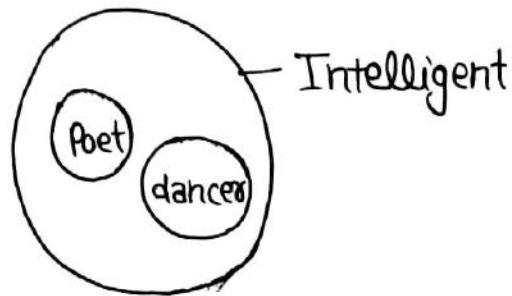
(I)- Here is no relation between Poet and dancer , So it doesn't follow.

(II) - Some intelligent Persons are dancers but we Can't Say negative Sentences. So it also doesn't follow.

Que-2 ⇒ Statements —

(a) All english movies are Vialent.
(b) Some People like Watching English movies.

Conclusion:-

(I) All People watching English movies like Violence.
(II) All People who like Violence Watch english movies.

Sol^n :-
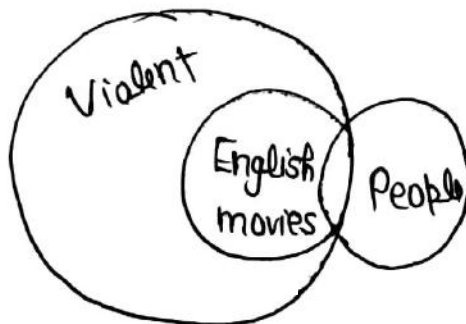
(i) Whatever People comes in attach to English movies also attached to Violent in Venn diagram So this follows.

(ii) Some People like Violent watch english movies but for all , it doesn't follow.

Que - 3 ⇒ Statement

   (a) Dugs have four legs
   (b) Tables have four legs

   Conclusion

(i) Tables are dogs
(ii) Dogs are Table

Soln:—

(i) Tably and dogs are not related to each other, So it doesn't follow or it is not true . and resume is.

(ii) also true, So second Conclusion also doesn't follow we Can Say neither (i) nor in follow.

CLOCK & CALENDER

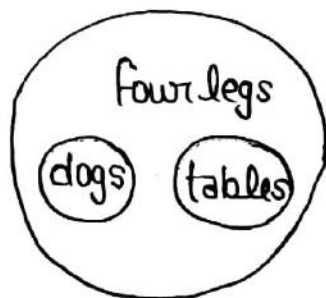It is a mechanical or electrical device for measuring time, indicating hours, minutes and sometimes seconds by hands on a round dial or by displayed figures. Here minute hand is always longer than hour hand.
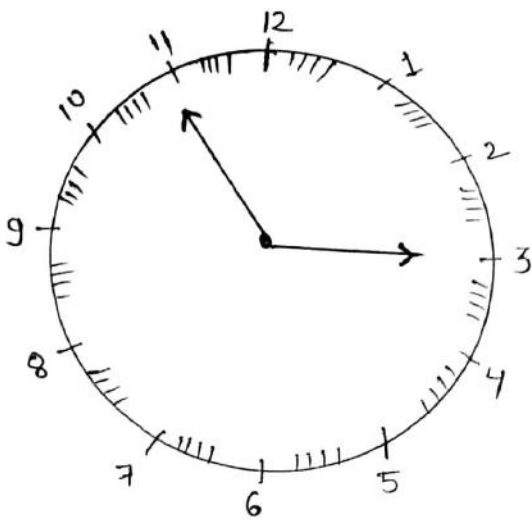
1 Hour = 60 minutes

1 Minutes = 60 Seconds

These are question asked on the basis of the position of the hands of clock.

→ Overlapping of minute and hour hands:

· 1h → 1 time

· 12h → 11 times

· 1 day → 22 times

These will be overlapping for only once from 11-1

Que for how many times does minute and hour hand overlap each other from 9AM to 2PM.

Soln   9 — 10 — 11 — 12 — 1 — 2

4 times.

Que from 4 PM to 5 PM at what time will hand and minute hand overlap?

Sol^n for solving this we multiply the starting of time by $\frac{60}{11}$.

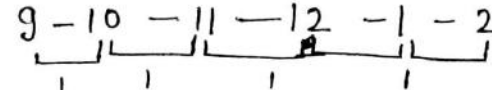$$= \frac{60}{11} \times 4 = \frac{240}{11} \Rightarrow 21\frac{9}{11}$$

$$\rightarrow 4:21\frac{9}{11} \, PM$$

Que from 2 PM to 3 PM at what time will be overlapping?

$$= \frac{60}{11} \times 2 = \frac{120}{11} = 10\frac{10}{11}$$

$$\rightarrow 2:10\frac{10}{11} \, PM$$

$\rightarrow$ Straight line / opposite direction / 180°:—

$$1 \, hr = 1 \, time$$
$$12 \, hr = 11 \, time$$
$$1 \, day = 22 \, times$$

• From 5 to 7 there will be straight line only for once.

• To Find at what time will they make straight line:

$$\boxed{\frac{60}{11} \times (time \pm 6)}$$

— If time is 6 or before 6 then sign would be positive.

— If time is after 6 then would be negative sign.

Que from 9 to 10 when will it make 180°angle.

Sol^n $\dfrac{60}{11} \times (9-6) = \dfrac{180}{11} = 16\dfrac{4}{11}$

$$\Rightarrow 9 : 16\dfrac{4}{11}$$

Que from 4 to 5 when will it make 180° angle

$$\dfrac{60}{11}(4+6) = \dfrac{600}{11} = 54\dfrac{6}{11}$$

$$\rightarrow 4 : 54\dfrac{6}{11}$$

→ Right angle / 90°

1 hr = 2 time.

12 hr = 22 times

1 day = 44 times

$\left.\begin{array}{c} 2-3 \\ 3-4 \end{array}\right\}$ 3 times right angle

$\left.\begin{array}{c} 8-9 \\ 9-10 \end{array}\right\}$ 3 times right angle

Que from 4 to 5, How many times and at what time will make right angle?

Sol^m $\boxed{\dfrac{60}{11} \times (\text{time} \pm 3)}$

$\dfrac{60}{11} \times (4+3)$ $\dfrac{60}{11} \times (4-3)$

$\dfrac{420}{11}$ $\dfrac{60 \times 1}{11}$

$4 : 38\dfrac{2}{11}$ $4 : 5\dfrac{5}{11}$

Que 6-7, At what times will it make right angle?

Sol^m $\frac{60}{11} \times (6+3)$, $\frac{60}{11} (6-3)$

$\frac{60 \times 9}{11}$, $\frac{60}{11} \times 3$

$\frac{540}{11}$ $\frac{180}{11}$

$6 : 49\frac{1}{11}$ $6 : 16\frac{4}{11}$

→ <u>Degree :−</u>

∵ Angle made by min hand in 5 min = 30'

∵ Angle made by min hand in 1 min = $\frac{30}{5}$ = 6°

∵ Angle made by hour hand in 60 min = 30°

Angle made by hour hand in 1 min = $\frac{30}{60} = \left(\frac{1}{2}\right)°$

→ Angle between hour and min hand :→

$$\boxed{y \times \frac{11}{2} - x \times 30}$$ x − hour
                                          y − minute

Que Time in a watch is 4:36 then what is the angle between both the hands?

Sol^n $y \times \frac{11}{2} - x \times 30$ $= 36 \times \frac{11}{2} - 4 \times 30$

$= 198 - 120 = 78°$

Mirror image

11 or before 11	After 11
11:60	23:60

Substract the given time by these data would be mirror image time or we can substract by any of these but remember time is never negative.

Que If time is 8:45, what is the mirror image time?

Sol^m
```
  11: 60
   8: 45
  ───────
   3: 15  → mirror image time
```

Water image

Before 30 Minute	After 30 Minute
18:30	17:90

Que It time is 10:20 then find the water image time?

Sol^m
```
  18:30
  10:20
  ──────
   8:10  ← water image time
```

Que If time is 8:40 then find the water image time?

Sol^m
```
  17:90
  08:40
  ──────
   9:50  ← water image time
```

Practice Yourself

Que 1. 8-9, at what time minute and hour hand overlap?

Que 2. 6-7 at what time minute and hour hand comes in 180°?

Que 3 In 12 hours how many times does minute and hour hand make 90° angle?

Que 4 Between 7-8 At what times do hour and minute hand make 90° angle?

Que 5. What is the angle between hour and minute hand at 03:24?

Que 6. If time is 4:03 then what is mirror image time?

Ans. 1 → $8:43\frac{7}{11}$

Ans. 2 → $7:5\frac{5}{11}$

Ans 3 → 22 times

Ans 4 → $7:54\frac{6}{11}$, $7:21\frac{9}{11}$

Ans 5 → 42°

Ans 6 → 7:57

DECISION MAKING

In such type of questions, we given few statements which can be unrealistic but we have to assume then true and on the basis of that few assumptions are given which may be true or false. There are certain statements which imply something or say things indirectly.

Example:
  statement:- •Many science collegiates are highly creative.

• Creative persons are very intelligent.

  So by these two statements, we can say that many science collegiates are intelligent. It's said becouse Science collegiates are creative and creatives are intelligent, so science collegiates are intelligent.

  Infer and imply mean something is assumed not said directly.

Ques- A statement is given followed by two conclusions. I and II. you have to consider the statement to be true, even if it seems to be variance from commonly known facts. you are to decide which of the given options can definitely be drawn from the given statement. Indicate your answer.

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Ques:1 Statement =

use of cosmetics is hazardous.

Conclusions:

I) Cosmetics have side effects.

II) Cosmetics are inexpensive.

a) only I follows

b) only II follows

c) Both I & II follows

d) Neither I nor II follows.

solution– we can draw only conclusion that they have side effects. there is no mention of cost so only conclusion I follows.

Ques:-2 statement :-

Honesty and hard work lead to economic improvement of an individual.

Conclusions :

I) There is a direct relation between honesty and economic improvement.

II) Hard work and honesty always pay dividends.

a) I is implicit

b) II is implicit

c) I and II are implicit.

d) I and II are not implicit.