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Course: GATE
Computer Science Engineering(CS)

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SINGLE SUBJECT : GENERAL APTITUDE (GATE - 2019) - REPORTS

OVERALL ANALYSIS | COMPARISON REPORT | SOLUTION REPORT

ALL(33) | CORRECT(0) | INCORRECT(0) | SKIPPED(33)

Q. 1

If price of wheat is increased by 20%, then by how much percentage must a family reduce their consumption to have no extra expenditure?

Solution Video | Have any Doubt ?

A $18\frac{2}{11}\%$

B $9\frac{1}{11}\%$

C 20%

D $16\frac{2}{3}\%$ — Correct Option

Solution :
(d)

$$\text{Change in consumption} = \frac{\text{Percentage change in rate} \times 100}{100 + \text{Percentage change in rate}}$$

$$= \frac{20 \times 100}{100 + 20} = \frac{2000}{120} = 16\frac{2}{3}\%$$

QUESTION ANALYTICS +

Q. 2

In a family of 10 members, average weight is increased by 1 kg, when one family member of 80 kg is replaced by a new member. Then what will be the weight of new member?

FAQ | Solution Video | Have any Doubt ?

A 100 kg

B 85 kg

C 90 kg — Correct Option

Solution :
(c)

Weight of new member = $80 + 10 \times 1 = 90$ kg

D 95 kg

QUESTION ANALYTICS +

Q. 3

How many numbers lie between 300 and 600 in which 4 comes only one time?

Solution Video | Have any Doubt ?

A 108

B 99

C 88

D 117 — Correct Option

Solution :
(d)

304, 314 .... 394 (except 344) = 9 numbers
340, 341 .... 349 (except 344) = 9 numbers
400, 401 .... 409 (except 404) = 9 numbers
410, 411 .... 419 (except 414) = 9 numbers
420, 421 .... 429 (except 424) = 9 numbers
430, 431 .... 439 (except 434) = 9 members
440, 441 .... 449 (all excepted) = 0 numbers
450, 451 .... 459 (except 454) = 9 numbers
460, 461 .... 469 (except 464) = 9 numbers
470, 471 .... 479 (except 474) = 9 numbers
480, 481 .... 489 (except 484) = 9 numbers
490, 491 .... 499 (except 494) = 9 numbers
504, 514 .... 594 (except 544) = 9 numbers
540, 541 .... 549 (except 544) = 9 numbers
Total = 117 numbers

QUESTION ANALYTICS

Q. 4

The ratio of the radius of two spheres is 2 : 1. What will be the ratio of their surface area?

Solution Video | Have any Doubt ?

A 8 : 3

B 4 : 1 — Correct Option

Solution :
(b)
Let radii of the circles be $2r$ and r.

Then ratio of surface area $= \frac{4\pi(2r)^2}{4\pi r^2} = 4:1$

C 2 : 1

D $\sqrt{2}:1$

QUESTION ANALYTICS

Q. 5

A bike is stolen at 5:00 AM. The thief drives it towards east at a speed of 50 km/hr. The theft is discovered at 5:30 AM and a police car is set off towards east at 60 km/hr. At what time will the car overtake the bike?

Solution Video | Have any Doubt ?

A 8:00 AM — Correct Option

Solution :
(a)

$$\frac{d}{50} - \frac{d}{60} = \frac{1}{2}$$

$$\frac{d}{300} = \frac{1}{2}$$

$$\Rightarrow \quad d = 150$$

$$t = \frac{150}{50} = 3 \text{ hours}$$

Hence, the car will overtake the bike at 8:00 AM.

B 8:30 AM

C 9:00 AM

D 9:30 AM

QUESTION ANALYTICS

Q. 6

Two vessels P and Q contain wine and water in the ratio of 8 : 5 and 5 : 2 respectively. Find the ratio in which these mixtures are to be mixed to get a new mixture containing wine and water in the ratio of 9 : 4?

Solution Video | Have any Doubt ?

A 7 : 3

B 3 : 7

C 7 : 2

D 2 : 7 — Correct Option

Solution :
(d)

Wine in 1 litre mixture of $P = \frac{8}{13}l$

Wine in 1 litre mixture of $Q = \frac{5}{7}l$

Wine in 1 litre mixture of P and $Q = \frac{9}{13}l$

Let x litres of P and $(1 - x)$ litres of Q are mixed.

$$\frac{8}{13}x + \frac{5}{7}(1-x) = \frac{9}{13}$$

$$\Rightarrow \quad \frac{56x + 65 - 65x}{91} = \frac{63}{91}$$

$$\Rightarrow \quad 2 = 9x$$

$$\Rightarrow \quad x = \frac{2}{9}$$

$$(1 - x) = 1 - \frac{2}{9} = \frac{7}{9}$$

$$\text{Required ratio} = \frac{x}{1-x} = 2:7$$

QUESTION ANALYTICS

Q. 7

Choose the option which is closest in meaning to the word GERMANE.

Solution Video | Have any Doubt ?

A Impertinent

B Evolve

C Opposite

D Relevant — Correct Option

Solution :
(d)
GERMANE means something that is relevant, pertinent or apposite to a subject under consideration.

QUESTION ANALYTICS

Q. 8

Choose the option which is exact opposite of the word REMISS.

Solution Video | Have any Doubt ?

A Negligent

B Dutiful — Correct Option

Solution :
(b)
Remiss means lacking care or attention to duty. So, its opposite will be dutiful. Option (b) is the most appropriate answer.

C Harmful

D Suspend

QUESTION ANALYTICS

Q. 9

Given are 4 options with a pair of words in each option. Identify the pair that has the same/ similar relationship as the pair.
GRAVITY : PULL

Solution Video | Have any Doubt ?

A South Pole : Direction

B Water : Storm

C Magnetism : Attraction — Correct Option

Solution :
(c)
Pull is the property that gravity has, and in the same way attraction is the property that magnetism has.

D Censor : Play

QUESTION ANALYTICS

Q. 10

Choose the option which can be substituted for the given sentence.
"A remedy for all diseases"

Solution Video | Have any Doubt ?

A Panacea — Correct Option

Solution :
(a)
Panacea is a solution or remedy for all difficulties or diseases.
Pinnacle is the highest point or level.
Panache is flamboyant confidence of style or manner.
Pangaea was a super-continent in early geologic time.

B Pinnacle

C Panache

D Pangaea

QUESTION ANALYTICS

Q. 11

Two taps A and B can fill a tank in 48 and 60 minutes respectively. Both are opened together. At the end of 16 minutes the first is turned off. The extra time taken to fill the tank after the first step is turned of will be _____ minutes.

Solution Video | Have any Doubt ?

24 — Correct Option

Solution :
24

Let the time taken to fill the tank = T mins

After 16 minutes, part of the tank filled

$$= 16\left(\frac{1}{48}+\frac{1}{60}\right)=\frac{3}{5}$$

Balance to be filled by B alone = $1-\frac{3}{5}=\frac{2}{5}$

$$\frac{1}{2/5} = \frac{B\times 60}{B\times T}$$

$$T = \frac{2}{5}\times 60 = 24 \text{ minutes}$$

QUESTION ANALYTICS

Q. 12

A sum of money deposited at compound interest doubles itself in 3 years. It will amount to sixteen times at the same rate in _____ years.

Solution Video | Have any Doubt ?

12 — Correct Option

Solution :
12

Let the sum = 100, Time = 3 years

Amount due in 3 years = 200

$$100\left(1+\frac{r}{100}\right)^3 = 200$$

$$\Rightarrow \left(1+\frac{r}{100}\right)^3 = 2$$

$$\Rightarrow \left(1+\frac{r}{100}\right) = 2^{1/3} \quad \ldots(i)$$

Let the amount become 16 times in n years.

$$100\left(1+\frac{r}{100}\right)^n = 1600$$

$$\left(1+\frac{r}{100}\right)^n = 16 \quad \ldots(ii)$$

From eq. (i) and eq. (ii), we get

$$(2^{1/3})^n = 16 = 2^4$$

$$\frac{n}{3} = 4$$

$$n = 12$$

QUESTION ANALYTICS

Q. 13

A 14 m wide road runs outside around a circular park whose circumference is 176 m. The area of this road will be _____ m^2.
[Take $\pi = 22/7$]

Solution Video | Have any Doubt ?

3080 — Correct Option

Solution :
3080

Let r and R be the radii of park and road. Circumference of the park = 176 m

$$2\pi r = 176 \text{ m}$$

$$\therefore \quad r = \frac{176\times 7}{22\times 2} = 28 \text{ m}$$

$$R = (28 + 14) = 42 \text{ m}$$

$$\text{Area of the road} = \pi R^2 - \pi r^2$$

$$= \pi(R^2 - r^2)$$

$$= \pi(42^2 - 28^2)$$

$$= \frac{22}{7}(42-28)(42+28)$$

$$= 3080 \text{ m}^2$$

QUESTION ANALYTICS

Q. 14

A student scored 84, 80 and 76 in Mathematics, Economics and English examination. If he presents his scores in a pie chart, the central angle for his score in Mathematics will be _____ degrees.

Solution Video | Have any Doubt ?

126 — Correct Option

Solution :

126

Total marks obtained = 84 + 80 + 76 = 240

In pie chart, if 240 marks = 360°

Then 1 mark = $\frac{360°}{240}$

$\therefore$ 84 marks = $\frac{360°}{240} \times 84 = 126°$

QUESTION ANALYTICS

Q. 15

A number when divided by 225 gives a remainder of 32. The remainder when the same number is divided by 15 will be _____.

Solution Video | Have any Doubt ?

2 — Correct Option

Solution :

2

Let number be x

$x = 225Q + 32$, where Q the quotient can have the values 1, 2, 3 etc.

$x = (15 \times 15)Q + (15 \times 2) + 2$

Divide x by 15, we get the remainder 2.

QUESTION ANALYTICS

Q. 16

Virat has 220 candies to distribute among 10 children. If each child receives at least 1 candy and no two children receive the same number of candies, then the maximum number of candies that a child can receive will be _____.

Solution Video | Have any Doubt ?

175 — Correct Option

Solution :

175

Child 1 = 1 Candy

Child 2 = 2 Candies

Child 3 = 3 Candies

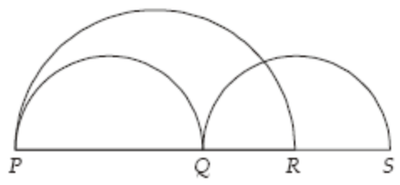
And so on, until we find that child 9 has been given 9 candies. We now want to subtract all the candies assigned to the first 9 children from our 220 candies, and given the rest to child 10.

220 – (9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1) = 175 candies

QUESTION ANALYTICS

Q. 17

If diameter PQ = diameter QS and $QR = \frac{2}{5}$ of PR, what is the ratio of circumference of larger semicircle to that of the combined circumference of the two equal smaller semicircles?



Solution Video | Have any Doubt ?

A. 6 : 5

B. 5 : 3

C. 9 : 25

D. 5 : 6 — Correct Option

Solution :

(d)

QR : PR = 2 : 5 i.e. PQ : PR = 3 : 5

or we can simply say PQ = 3 and PR = 5

then QS = PQ = 3

The diameter of the larger semicircle PR = 5

The sum of the diameters of two smaller semicircles PQ + QS = 3 + 3 = 6

Ratio of diameters = 5 : 6

This will be the same as the ratio of circumferences i.e 5 : 6.

QUESTION ANALYTICS

Q. 18

India's Olympic team consists of seven men and five women. If three of these twelve members are randomly selected as representatives of the team, what is the probability that the representatives will consist of two females and one male?

Solution Video | Have any Doubt ?

A. $\frac{7}{22}$ — Correct Option

Solution :

(a)

Ways to select 2 females = ${}^5C_2$

Ways to select 1 male = ${}^7C_1$

$\therefore$ Required probability = $\frac{{}^5C_2 \times {}^7C_1}{{}^{12}C_3} = \frac{7}{22}$

B $\frac{35}{432}$

C $\frac{3}{35}$

D $\frac{4}{21}$

QUESTION ANALYTICS +

Q. 19

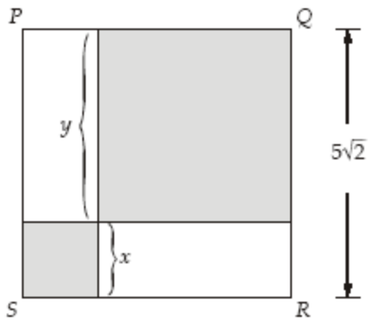
If square PQRS has an area of 50 unit^2, and the area of the larger shaded square is 9 times the area of the smaller shaded square, what is the length of one side of the smaller shaded square?

Solution Video | Have any Doubt ?

A $\frac{3}{2\sqrt{2}}$ unit

B $\frac{5}{2\sqrt{2}}$ unit — Correct Option

Solution :
(b)



$$x + y = 5\sqrt{2}$$

$$\Rightarrow \quad 9x^2 = y^2$$

$$3x = y$$

$$x + 3x = 5\sqrt{2}$$

$$4x = 5\sqrt{2}$$

$$x = \frac{5\sqrt{2}}{4} = \frac{5}{2\sqrt{2}} \text{ unit}$$

C $\frac{6}{2\sqrt{2}}$ unit

D $\frac{5}{3}$ unit

QUESTION ANALYTICS +

Q. 20

On a certain test, 18 points are awarded for each correct answer, and 14 points are deducted for each incorrect or unanswered question. Narendra received a total score of 0 points on the test. If the test has fewer than 30 questions, how many questions are on the test?

Have any Doubt ?

A 16 — Correct Option

Solution :
(a)

Let C = number of questions answered correctly

I = number of questions answered incorrectly or unanswered

$$\text{Total score} = 18C - 14I$$

$$18C - 14I = 0$$

$$18C = 14I$$

$$\Rightarrow \quad C = \frac{7I}{9}$$

Now, C has to be an integer, this is possible only if I is divisible by 9.

If $I = 9$, $C = 7$ i.e. $I + C = 16$

If $I = 18$, $C = 14$ i.e. $I + C = 32$

It is given that the test has fewer than 30 questions

Thus, answer is 16.

B 17

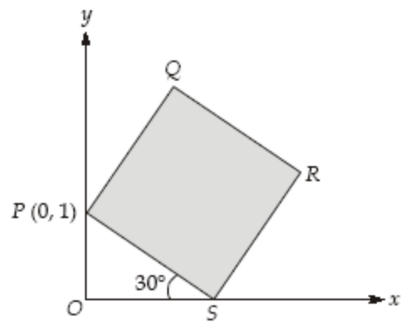
C 23

D 27

QUESTION ANALYTICS

Q. 21

If $PQRS$ is a square, what are the coordinates of R?



Solution Video | Have any Doubt ?

A $\left(2\sqrt{3}, \sqrt{3}\right)$

B $\left(\sqrt{3}, 1+\sqrt{3}\right)$

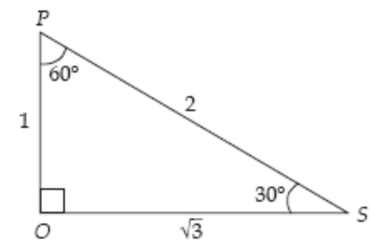
C $\left(\sqrt{3}, 2\sqrt{3}\right)$

D $\left(1+\sqrt{3}, \sqrt{3}\right)$ Correct Option

Solution :

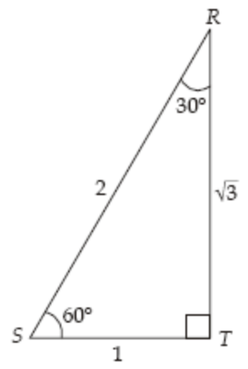
(d)

In ΔPOS,



Drop a perpendicular from R on x-axis at point T.

ΔPOS and ΔRST are similar



$$OS + ST = \sqrt{3} + 1$$

$$RT = \sqrt{3}$$

$$\therefore \text{ Coordinates of point } R = \left(1+\sqrt{3}, \sqrt{3}\right)$$

QUESTION ANALYTICS

Q. 22

Rahul invests ₹100 in an account that pays 12% annual interest : the interest is paid once, at the end of the year. Sonia invests ₹100 in an account that pays 12% annual interest compounding quarterly. At the end of one full year, compared to Rahul's account, approximately how much more does Sonia's account have?

Solution Video | Have any Doubt ?

A ₹0.55 Correct Option

Solution :

(a)

At the end of year,

$$\text{Rahul's money} = 100 \times 1.12 = ₹112$$

$$\text{Sonia's money} = 100\left(1+\frac{12}{4\times 100}\right)^4$$

$$= 100\,(1.03)^4 = ₹112.55$$

$$\text{Difference} = ₹0.55$$

The formula we used for Sonia is :

$$V = P\left(1+\frac{r}{100n}\right)^{nt}$$

where V = Total value, P = Principal, r = Annual interest rate, n = number of times per year invested, t = number of years.

B ₹2.20

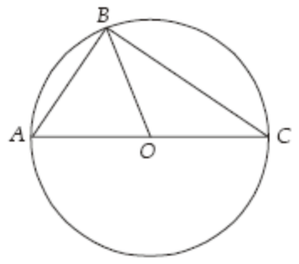
C ₹1.10

D ₹3.30

QUESTION ANALYTICS

Q. 23

In given figure below, O is the center of the circle. If $\angle BCO = 30°$ and $BC = 12\sqrt{3}$, what is the area of triangle ABO?



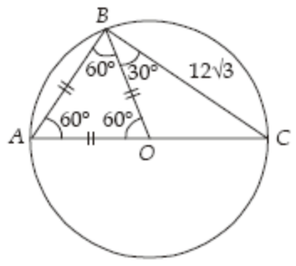
Solution Video | Have any Doubt ?

A $12\sqrt{3}$ unit^2

B $24\sqrt{3}$ unit^2

C $36\sqrt{3}$ unit^2 — Correct Option

Solution :
(c)



$$\angle ABC = 90°$$

$$\therefore \quad AB^2 + BC^2 = AC^2$$

$$\Rightarrow \quad r^2 + \left(12\sqrt{3}\right)^2 = (2r)^2$$

$$\Rightarrow \quad 432 = 3r^2$$

$$\Rightarrow \quad r = 12$$

Now, area of equilateral triangle $= \frac{\sqrt{3}}{4}(\text{side})^2$

$$\text{Area} = \frac{\sqrt{3}}{4}(12)^2 = \frac{\sqrt{3}}{4}(144) = 36\sqrt{3} \text{ unit}^2$$

D $48\sqrt{3}$ unit^2

QUESTION ANALYTICS +

Q. 24

Choose the option that best substitutes the underlined part of the sentence : TCS is edging closer to become the country's first 100 bn $ company. The company is fortunate to have excellent relationships among its employees : they each have a relationship of respect for all the others.

Solution Video | Have any Doubt ?

A they each have a relationship of respect for all the others.

B they have respect for one another. — Correct Option

Solution :
(b)
This is a situation in which there is the same relationship, respect, between any possible pair of people in the group. This is a saturation that calls for the structure "each other" or "one another".
Choice (a) doesn't use this, and what is used is very wordy and awkward, so it is incorrect.
These structures, "each other" and "one another", demand a plural subject. Choices (c) and (d) make the mistake of using a singular subject, so these are incorrect.
Option (b) is the right answer.

C each one has respect for one another

D they each have a relationship of respect for each other

QUESTION ANALYTICS +

Q. 25

The passage below consists of six sentences. The first and sixth sentence are given in the beginning. The middle four sentences have been jumbled up. These are labelled as P, Q, R and S. Find out the proper order for the four sentences.

S1 : He said on the phone that he would report for duty next day.
P : We found it locked.
Q : But he did not.
R : We waited for few more days then we decided to go to his place.
S : Even after that we waited for him quite a few days.
S6 : Eventually we reported to the police.

Solution Video | Have any Doubt ?

A RPSQ

B QRSP

C QRPS — Correct Option

Solution :
(c)

D S Q R P

QUESTION ANALYTICS +

Q. 26

Below is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled *P, Q, R* and *S* to produce the correct sentence. Choose the proper sequence.
It would
P : that they were quite in the dark
Q : about the policy of management
R : appear from their statement
S : in dealing with the strike
The proper sequence should be

Solution Video | Have any Doubt ?

A S R P Q

B R P Q S — Correct Option

Solution :
(b)
"It would appear ..." can be the only coherent beginning of the sentence. Thus the first part would be *R*. Since R says "their statement", sentence *P* would follow it because it also says, "that they ..."
Option (b) is the correct answer.

C S Q R P

D R S Q P

QUESTION ANALYTICS +

Q. 27

The ratio of two positive numbers is 4 : 3. If x is added to each number then the new ratio will be 5 : 4, and the sum of the new numbers will be 117. The value of x is _____.

Solution Video | Have any Doubt ?

13 — Correct Option

Solution :
(13)
Let the numbers be P and Q

$$\frac{P}{Q} = \frac{4}{3} \quad \ldots(i)$$

Let $P = 4y, Q = 3y$

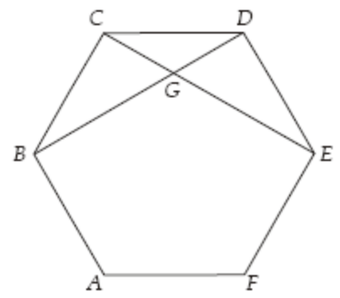
Now $$\frac{4y + x}{3y + x} = \frac{5}{4}$$

$$16y + 4x = 15y + 5x$$
$$\Rightarrow y = x$$
Sum of new numbers $= 5x + 4x = 117$
$$\Rightarrow 9x = 117$$
$$\Rightarrow x = 13$$

QUESTION ANALYTICS +

Q. 28

In the figure, *ABCDEF* is a regular hexagon. The measure of $\angle DGE$ is _____ degrees.



Solution Video | Have any Doubt ?

60 — Correct Option

Solution :
60
Sum of angles in n sided polygon = $(n - 2)\ 180°$
In hexagon $n = 6$
$\therefore$ Sum $= (6 - 2)180 = 720°$

$$\text{Each angle} = \frac{720°}{6} = 120°$$

Now, in ΔCDE. $CD = DE$, so it is an isosceles triangle. The angle at $D = 120°$, so other two angles must be 30° each. So $\angle DEC = \angle DCE = 30°$.
Now, $\angle CDG = \angle DCG = 30°$
$\therefore$ $\angle DGC = 180° - 30° - 30° = 120°$
$\angle DGE = 180° - \angle DGC = 180° - 120° = 60°$

QUESTION ANALYTICS +

Q. 29

A company has 3 managers, 15 executives, 82 assistants, and no other employees. The average salary for 15 executives is ₹40,000 and the average salary for the 82 assistants is ₹12,500. If the average salary across all three types of employees is ₹22,250, then what is the average salary of the 3 managers?

Solution Video | Have any Doubt ?

200000 — Correct Option

Solution :
200000

Let the average salary of managers be 'S'.

$15 \times 40000 + 82 \times 12500 + 3 \times S = 100 \times 22250$

$\Rightarrow \quad 3S = 2225000 - 600000 - 1025000$

$\Rightarrow \quad 3S = 600000$

$\Rightarrow \quad S = ₹200000$

QUESTION ANALYTICS +

Q. 30

If P is the least common multiple of 51 and 34, and Q is the greatest common divisor of 18 and 90, then $P + Q$ is equal to _____.

Solution Video | Have any Doubt ?

120 — Correct Option

Solution :
120

$90 = 2 \times 3 \times 3 \times 5$

$18 = 2 \times 3 \times 3$

$\Rightarrow \quad Q = 2 \times 3 \times 3 = 18$

$51 = 3 \times 17$

$34 = 2 \times 17$

$\Rightarrow \quad P = 2 \times 3 \times 17 = 102$

$P + Q = 18 + 102 = 120$

QUESTION ANALYTICS +

Q. 31

Six children A, B, C, D, E and F are going to sit in six chairs in a row. Child E must be somewhere to the left of child F. How many possible configurations are there for the children?

Solution Video | Have any Doubt ?

360 — Correct Option

Solution :
360

With no restrictions, the six children can be arranged in 6! ways i.e. 720 ways.

In all these arrangements it is just as likely for E to be on the left of F as it is for E to be on the right of F.

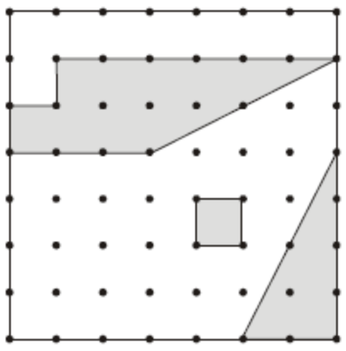
Therefore, exactly half must have E to the right of F, and exactly half must have E to the left of F.

Therefore, exactly $\frac{720}{2} = 360$ of the arrangements have E to the left of F.

QUESTION ANALYTICS +

Q. 32

The big outside square has an area of 84 unit^2, and the dots are all equally spaced, forming smaller squares. The sum of the areas of the shaded regions is _____ unit^2.

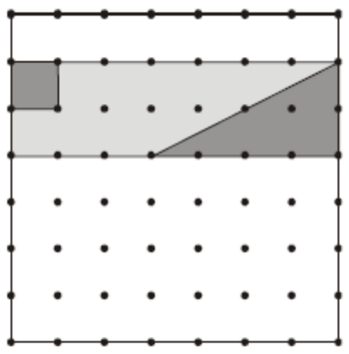


Solution Video | Have any Doubt ?

24 — Correct Option

Solution :
24

We can spend time figuring out the areas of the three individual irregular shapes. Instead, let us rearrange the three to form this :



Here we see that the shaded area is 2/7 of the whole square.

Shaded area $= \frac{84 \times 2}{7} = 24$

QUESTION ANALYTICS +

Q. 33

The sum of all integers from 46 to 156 inclusive is _____.

Solution Video | Have any Doubt ?

11211 — Correct Option

Solution :
11211

Sum of all integers from 1 to 156 = $\frac{156 \times 157}{2} = 12246$ ...(i)

Sum of all integers from 1 to 45 = $\frac{45 \times 46}{2} = 1035$ ...(ii)

Subtracting equation (ii) from (i), we get

$= 12246 - 1035 = 11211$

QUESTION ANALYTICS +