GATE DA 2024 | GA Question: 1

If '→' denotes increasing order of intensity, then the meaning of the words[sick → infirm → moribund] is analogous to [silly → _____ → daft].Which one of the given options is appropriate to fill the blank?

(A)frown (B)fawn (C)vein (D)vain

sick = affected by physical /mental illness, infirm = weak/Ill,

moribound = at the point of death

silly = foolish / brainless/ mindless

daft = foolish, crazy, laughable, weird

(A)frown: form an expression of disapproval, displeasure, or concentration

(B)fawn: A young deer /a light yellowish-brown color

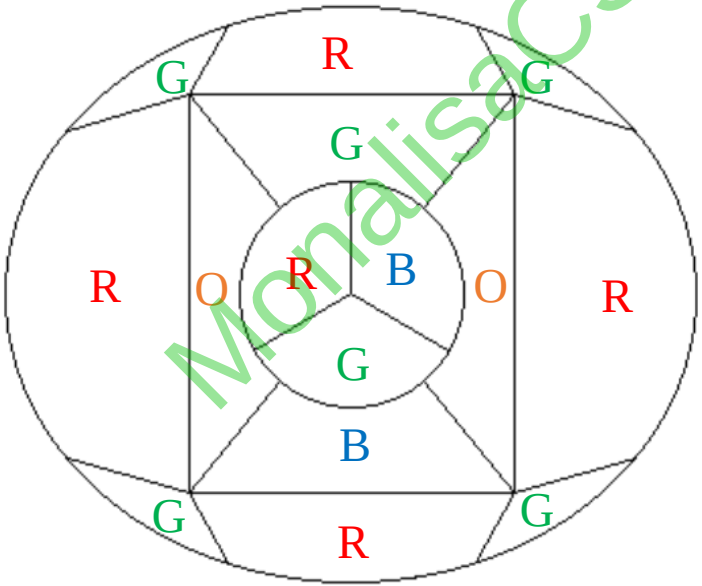
(C)vein: A blood vessel transporting blood from the capillaries to heart

(D)vain:Having no real substance, value or importance; empty; worthless; unsatisfying

silly → vain → daft

Ans: (D)vain

- **GATE DA 2024 | GA Question: 2**
- The 15 parts of the given figure are to be painted such that no two adjacent parts with shared boundaries (excluding corners) have the same color. The minimum number of colors required is (A)4 (B)3 (C)5 (D)6
- Ans : (A)4



GATE DA 2024 | GA Question: 3

How many 4-digit positive integers divisible by 3 can be formed using only the digits {1, 3,4, 6, 7}, such that no digit appears more than once in a number?

(A)24 (B)48 (C)72 (D)12

A number is divisible by 3 when the sum of the digits of the number is divisible by 3.

Group1: 1+4+6+7=18

Group2: 1+3+4+7=15

Using 1,4,6,7 4-digit positive integers possible=4!=24

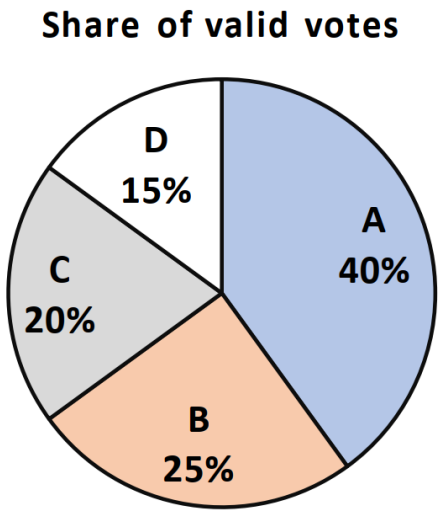
Using 1,3,4,7 4-digit positive integers possible=4!=24

Total 4-digit positive integers divisible by 3 =24+24=48

Ans : (B)48

- **GATE DA 2024 | GA Question: 4**
- The sum of the following infinite series is $2+\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\frac{1}{8}+\frac{1}{9}+\frac{1}{16}+\frac{1}{27}+\cdots$
- (A)11/3 (B)7/2 (C)13/4 (D)9/2
- Infinite GP sum =a/(1-r)
- $2+\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\frac{1}{8}+\frac{1}{9}+\frac{1}{16}+\frac{1}{27}+\cdots$
- $=1+\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\frac{1}{16}\ \ldots\ldots+1+\frac{1}{3}+\frac{1}{9}+\frac{1}{27}+\ldots.$
- $=1/(1-\frac{1}{2})+1/(1-\frac{1}{3})$
- $=1/\frac{1}{2}+1/\frac{2}{3}$
- =2+3/2=7/2
- Ans: (B)7/2

GATE DA 2024 | GA Question: 5



- In an election, the share of valid votes received by the four candidates A, B, C, and D is represented by the pie chart shown. The total number of votes cast in the election were 1,15,000, out of which 5,000 were invalid.
- Based on the data provided, the total number of valid votes received by the candidates B and C is
- (A)45000 (B)49500 (C)51750 (D)54000
- Total valid votes =115000-5000=110000
- Candidates B and C =20%+25%=45%
- The total number of valid votes received by the candidates B and C is
- 110000*45/100=49500
- Ans : (B)49500

- **GATE DA 2024 | GA Question: 6**
- Thousands of years ago, some people began dairy farming. This coincided with a number of mutations in a particular gene that resulted in these people developing the ability to digest dairy milk . Based on the given passage, which of the following can be inferred?
- (A) All human beings can digest dairy milk.
- (B) No human being can digest dairy milk.
- (C) Digestion of dairy milk is essential for human beings
- (D) In human beings, digestion of dairy milk resulted from a mutated gene.
- Ans: (D) In human beings, digestion of dairy milk resulted from a mutated gene.

- **GATE DA 2024 | GA Question: 7**
- The probability of a boy or a girl being born is 1/2. For a family having only three children, what is the probability of having two girls and one boy?
- (A)3/8 (B)1/8 (C)1/4 (D)1/2
- The probability of having two girls and one boy
- =GGB+GBG+BGG
- =1/2*1/2*1/2+ 1/2*1/2*1/2+ 1/2*1/2*1/2
- =1/8+1/8+1/8=3/8
- Ans: (A)3/8

GATE DA 2024 | GA Question: 8

Person 1 and Person 2 invest in three mutual funds A, B, and C. The amounts they invest in each of these mutual funds are given in the table.

At the end of one year, the total amount that Person 1 gets is ₹500 more than Person 2. The annual rate of return for the mutual funds B and C is 15% each.

	Mutual fund A	Mutual fund B	Mutual fund C
Person 1	₹10,000	₹20,000	₹20,000
Person 2	₹20,000	₹15,000	₹15,000

What is the annual rate of return for the mutual fund A?

(A) 7.5% (B)10% (C)15% (D)20%

Person 1 invested in the mutual funds B and C is

20,000+20,000=40,000 got interest 40,000*15%=6,000

Person 2 invested in the mutual funds B and C is 15,000+15,000=30,000

Person 2 got interest 30,000*15%=4500

10000*x/100 +6000-500=20000*x/100+4500

100x+5500=200x+4500

5500-4500=100x

1000=100x ⇒ x=10

Ans : (B)10%

- **GATE DA 2024 | GA Question: 9**
- Three different views of a dice are shown in the figure below.

- The piece of paper that can be folded to make this dice is
- (A)

5	1
	4
	6
2	3

(B)

5	1
	4
	2
6	3

(C)

5	1
	3
	2
4	6

(D)

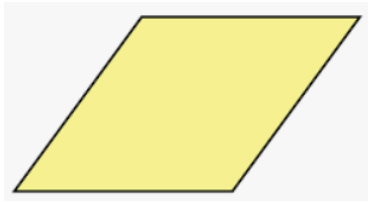
5	1
	4
	6
3	2

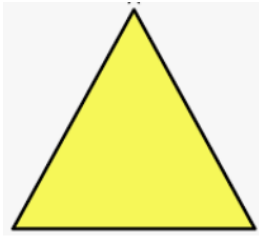
- Ans: (A)

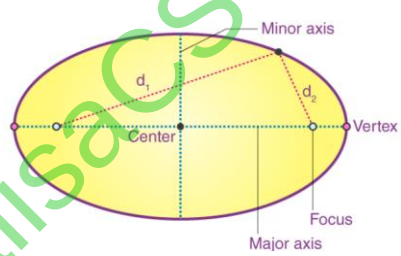
GATE DA 2024 | GA Question: 10

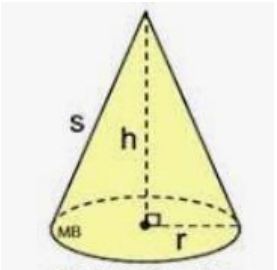
Visualize two identical right circular cones such that one is inverted over the other and they share a common circular base. If a cutting plane passes through the vertices of the assembled cones, what shape does the outer boundary of the resulting cross-section make?

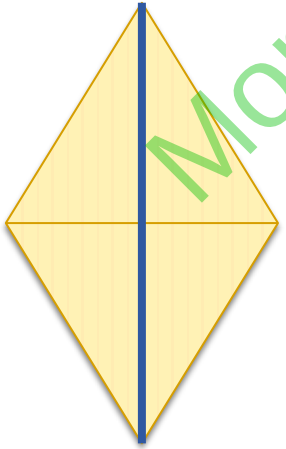
(A) A rhombus (B) A triangle (C) An ellipse (D) A hexagon











Ans (A) A rhombus

GATE CS 2024 Set 1| GA Question: 1

If '→' denotes increasing order of intensity, then the meaning of the words[dry → arid → parched] is analogous to [diet → fast → _____].Which one of the given options is appropriate to fill the blank?

(A) Starve (B)Reject (C)Feast (D)Deny

Dry: free from moisture or liquid; not wet or moist.

Arid: excessively dry or having insufficient rainfall

Parched: dried out with heat , extremely thirsty

Diet: one restricts oneself, either to lose weight or for medical reasons.

Fast: to eat only certain kinds of food, especially as a religious observance.

(A) Starve:die from hunger (B)Reject :inappropriate, or not to one's taste

(C) Feast: a large meal, typically one in celebration of something

(D) Deny: one refuses to admit the truth or existence of.

Ans : (A) Starve

- **GATE CS 2024 Set 1| GA Question: 2**
- If two distinct non-zero real variables x and y are such that $(x + y)$ is proportional to $(x - y)$ then the value of x/ y
- (A) depends on xy
- (B) depends only on x and not on y
- (C) depends only on y and not on x
- (D) is a constant
- $(x+y)/(x-y)=k$
- $\Rightarrow x+y=k(x-y)=kx-ky$
- $\Rightarrow x-kx=-y-ky$
- $\Rightarrow x(1-k)=-y(1+k)$
- $\Rightarrow x/y=-(1+k)/(1-k)=(k+1)/(k-1)$ constant
- Ans : (D) is a constant

- **GATE CS 2024 Set 1| GA Question: 3**
- Consider the following sample of numbers:9, 18, 11, 14, 15, 17, 10, 69, 11, 13The median of the sample is
- (A) 13.5 (B)14 (C)11 (D)18.7
- Increasing order {9,10,11,11,13,14,15,17,18,69}
- Sample size is 10
- So median =(13+14)/2=13.5
- Ans: (A) 13.5

- **GATE CS 2024 Set 1| GA Question: 4**
- The number of coins of ₹1, ₹5, and ₹10 denominations that a person has are in the ratio 5:3:13. Of the total amount, the percentage of money in ₹5 coins is
- (A)21% (B)$14\frac{2}{7}$ % (C) 10% (D)30%
- 1*5+5*3+10*13=5+15+130=150
- The percentage of money in ₹5 coins is (15/150)*100=10%
- Ans : (C) 10%

- **GATE CS 2024 Set 1| GA Question: 5**
- For positive non-zero real variables p and q, if $\log (p^2 + q^2) = \log p + \log q + 2 \log 3$,then, the value of $\frac{p^4+q^4}{p^2q^2}$ is (A)79 (B)81 (C)9 (D)83
- $\log (p^2 + q^2) = \log p + \log q + 2 \log 3$
- $\Rightarrow \log (p^2 + q^2) = \log (pq) + \log 3^2$
- $\Rightarrow \log (p^2 + q^2) = \log (9pq)$
- $\Rightarrow (p^2 + q^2) = 9pq$
- $\Rightarrow (p^2 + q^2)^2 = (9pq)^2$
- $\Rightarrow p^4 + q^4 + 2p^2q^2 = 81p^2q^2$
- $\Rightarrow p^4 + q^4 = 81p^2q^2 - 2p^2q^2 = 79p^2q^2$
- $\Rightarrow \frac{p^4+q^4}{p^2q^2} = 79$
- Ans : (A)79

GATE CS 2024 Set 1| GA Question: 6

In the given text, the blanks are numbered (i)-(iv). Select the best match for all the blanks.
Steve was advised to keep his head (i) before heading (ii) to bat; for, while he had a head (iii) batting, he could only do so with a cool head (iv) his shoulders.

- (A)(i)down (ii)down (iii)on (iv)for
- (B)(i)on (ii)down (iii)for (iv)on
- (C)(i) down (ii) out (iii)for (iv) on
- (D)(i) on (ii) out (iii) on (iv) for
- Ans : (C)(i) down (ii) out (iii)for (iv) on

GATE CS 2024 Set 1| GA Question: 7

A rectangular paper sheet of dimensions 54 cm × 4 cm is taken. The two longer edges of the sheet are joined together to create a cylindrical tube. A cube whose surface area is equal to the area of the sheet is also taken. Then, the ratio of the volume of the cylindrical tube to the volume of the cube is

(A)$1/\pi$ (B)$2/\pi$ (C) $3/\pi$ (D)$4/\pi$

Surface area of rectangular sheet =$54*4=216$ cm^2

Cube surface area = 216 cm^2

$6a^2=216 \Rightarrow a=6$ cm

Volume of cube=$6^3=216cm^3$

Circumference of cylinder = $2\pi r = 4 \Rightarrow r = 2/\pi$

Volume of cylindrical tube =$\pi r^2 h$

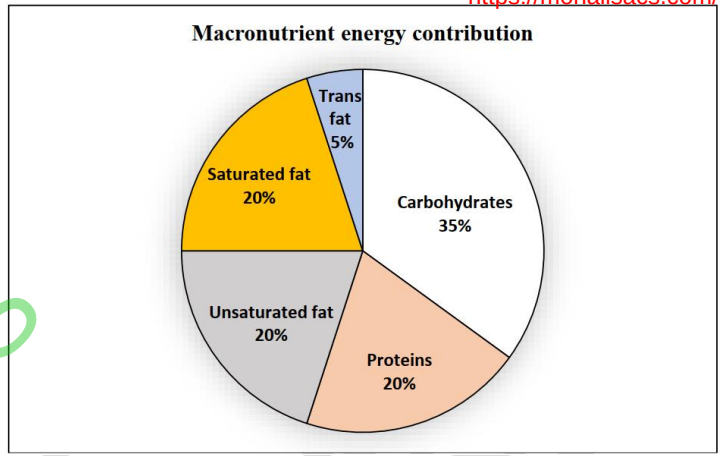
$=\pi(2/\pi)^2 54=216/\pi$

$$\frac{\text{volume of the cylindrical tube}}{\text{volume of the cube}} = \frac{216/\pi}{216} = 1/\pi$$

Ans : (A)$1/\pi$

GATE CS 2024 Set 1| GA Question: 8

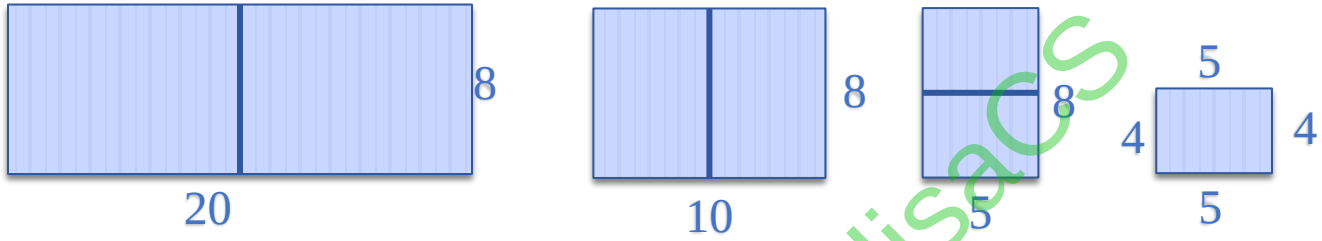
- The pie chart presents the percentage contribution of different macronutrients to a typical 2,000 kcal diet of a person.
- The typical energy density (kcal/g) of these macronutrients is given in the table.
- The total fat (all three types), in grams, this person consumes is
- (A)44.4 (B)77.8 (C)100 (D)3600
- The total fat (all three types) = 5+20+20=45%
- 45% of 2000 kcal=2000*45/100=900kcal
- 9kcal=1g
- 900kcal=900/9 g=100g
- Ans : (C)100



Macronutrient	Energy density (kcal/g)
Carbohydrates	4
Proteins	4
Unsaturated fat	9
Saturated fat	9
Trans fat	9

GATE CS 2024 Set 1| GA Question: 9

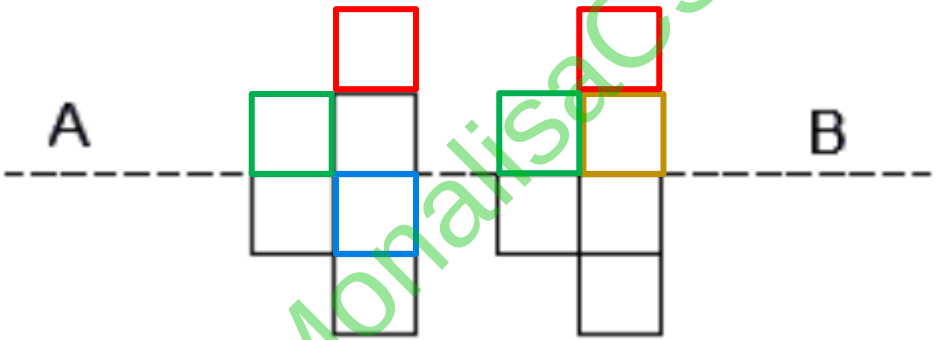
A rectangular paper of 20 cm × 8 cm is folded 3 times. Each fold is made along the line of symmetry, which is perpendicular to its long edge. The perimeter of the final folded sheet (in cm) is (A)18 (B)24 (C)20 (D)21



The perimeter of the final folded sheet=5*2+4*2=18

Ans : (A)18

- **GATE CS 2024 Set 1| GA Question: 10**
- The least number of squares to be added in the figure to make AB a line of symmetry is
- (A)6 (B)4 (C)5 (D)7
- A line of symmetry is a line that cuts a shape exactly in half
- Ans : (A)6



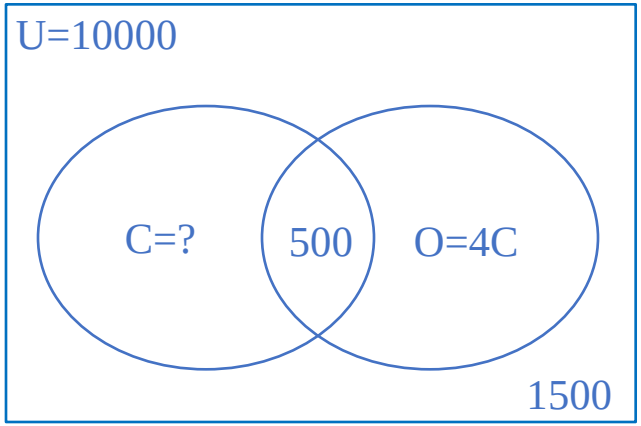
- **GATE CS 2024 Set 2| GA Question: 1**
- If '→' denotes increasing order of intensity, then the meaning of the words[walk → jog → sprint] is analogous to [bothered → _____ → daunted].Which one of the given options is appropriate to fill the blank?
- (A) phased (B)phrased (C)fazed (D)fused
- Walk : move at a regular pace, jog : run at a steady gentle pace, sprint : run at full speed
- Bothered : concerned about something ,
- Daunted : to make someone feel slightly frightened or worried about their ability to achieve something: She was not at all daunted by the size of the problem. Synonym. Discourage
- Phased :to introduce something in stages over a particular period of time
- Phrased :put into a particular form of words.
- Fazed: upset or bothered
- Fused :joined or blended to form a single entity
- Ans : (C)fazed

- **GATE CS 2024 Set 2| GA Question: 2**
- Two wizards try to create a spell using all the four elements, *water*, *air*, *fire*, and *earth*. For this, they decide to mix all these elements in all possible orders. They also decide to work independently. After trying all possible combination of elements, they conclude that the spell does not work.
- How many attempts does each wizard make before coming to this conclusion, independently?
- (A)24 (B)48 (C)16 (D)12
- Combination of 4 elements =4!=24
- Ans : (A)24

GATE CS 2024 Set 2| GA Question: 3

In an engineering college of 10,000 students, 1,500 like neither their core branches nor other branches. The number of students who like their core branches is 1/4th of the number of students who like other branches. The number of students who like both their core and other branches is 500.The number of students who like their core branches is

(A)1800 (B)3500 (C)1600 (D)1500



$|C \cup O|=10000-1500=8500$

$|C \cup O|=|C|+|O|-|C \cap O|$

$8500=|C|+|4C|-500$

$|5C|=9000$

$|C|=9000/5=1800$

Ans: (A)1800

GATE CS 2024 Set 2| GA Question: 4

- For positive non-zero real variables x and y, if $\ln\left(\frac{x+y}{2}\right) = \frac{1}{2}[\ln(x) + \ln(y)]$ then, the value of $\frac{x}{y} + \frac{y}{x}$ is (A)1 (B)1/2 (C)2 (D)4
- $\ln\left(\frac{x+y}{2}\right) = \frac{1}{2}[\ln(x) + \ln(y)] \Rightarrow \ln\left(\frac{x+y}{2}\right) = \frac{1}{2}\ln(xy)$
- $\Rightarrow \ln\left(\frac{x+y}{2}\right) = \ln(xy)^{1/2}$ $\Rightarrow \left(\frac{x+y}{2}\right) = (xy)^{1/2}$
- $\Rightarrow \left(\frac{x+y}{2}\right)^2 = (xy)$ $\Rightarrow \left(\frac{x^2+y^2+2xy}{4}\right) = (xy)$
- $\Rightarrow x^2+y^2+2xy = 4xy$ $\Rightarrow x^2+y^2 = 2xy$
- $\Rightarrow \frac{x^2+y^2}{xy} = 2$ $\Rightarrow \frac{x}{y} + \frac{y}{x} = 2$
- Ans : (C)2

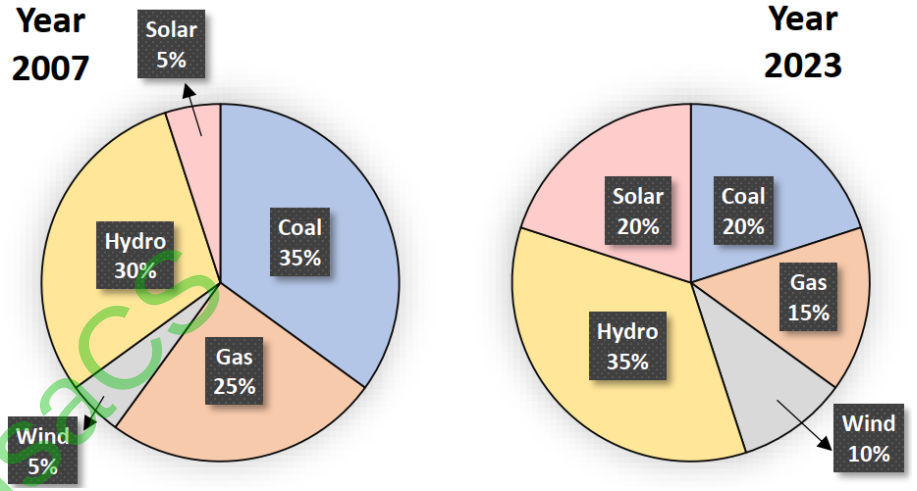
- **GATE CS 2024 Set 2| GA Question: 5**
- In the sequence 6, 9, 14, *x*, 30, 41, a possible value of *x* is
- (A)25 (B)21 (C)18 (D)20
- 6+3=9
- 9+5=14
- 14+7=21
- 21+9=30
- 30+11=41
- Ans : (B)21

- **GATE CS 2024 Set 2| GA Question: 6**
- Sequence the following sentences in a coherent passage
- P:This fortuitous geological event generated a colossal amount of energy and heat that resulted in the rocks rising to an average height of 4 km across the contact zone.
- Q:Thus, the geophysicists tend to think of the Himalayas as an active geological event rather than as a static geological feature.
- R:The natural process of the cooling of this massive edifice absorbed large quantities of atmospheric carbon dioxide, altering the earth's atmosphere and making it better suited for life.
- S:Many millennia ago, a breakaway chunk of bedrock from the Antarctic Plate collided with the massive Eurasian Plate.
- (A)QPSR (B)QSPR (C)SPRQ (D)SRPQ
- Ans :(C)SPRQ

- **GATE CS 2024 Set 2| GA Question: 7**
- A person sold two different items at the same price. He made 10% profit in one item, and 10% loss in the other item. In selling these two items, the person made a total of
- (A)1% profit (B)2% profit (C)1%loss (D)2%loss
- Let person sold two different items at price 100
- 10% profit in one item=x+10%x=1.1x=100
- x=100*10/11=90.9
- 10% loss in the other item=y-10%y=.9y=100
- Y=100*10/9=111.1
- Cost of both item=90.9+111.1=202
- Sold price of both item=200
- Lost=202-200=2
- Lost %=(2/202)*100=.99%=1% loss
- Ans : (C)1%loss

GATE CS 2024 Set 2| GA Question: 8

- The pie charts depict the shares of various power generation technologies in the total electricity generation of a country for the years 2007 and 2023.
- The renewable sources of electricity generation consist of Hydro, Solar and Wind. Assuming that the total electricity generated remains the same from 2007 to 2023, what is the percentage increase in the share of the renewable sources of electricity generation over this period?



- (A)25% (B)50% (C)77.5% (D)62.5%
- Electricity generated from renewable resources in 2007 =30+5+5= 40 units
- Electricity generated from renewable resources in 2023 =35+20+10=65 units
- Percentage increase 2007 to 2023 = (65 - 40)/40 * 100
- = 62.5%
- Ans : (D)62.5%

- **GATE CS 2024 Set 2| GA Question: 9**
- A cube is to be cut into 8 pieces of equal size and shape. Here, each cut should be straight and it should not stop till it reaches the other end of the cube. The minimum number of such cuts required is (A)3 (B)4 (C)7 (D)8
- First cut parallel to one face of the cube, dividing it into two equal halves.
- Second cut perpendicular to the first cut, dividing the cube into four equal quarters.
- Third cut perpendicular to both previous cuts, dividing each quarter into two equal parts.
- After these three cuts, you will have 8 pieces of equal size and shape.
- So, the minimum number of cuts required is 3.
- Ans : (A) 3

GATE CS 2024 Set 2| GA Question: 10

1	X	4	3
X	5	5	4
3	X	6	X

- In the 4 × 4 array shown below, each cell of the first three rows has either a cross (X) or a number . The number in a cell represents the count of the immediate neighboring cells (left, right, top, bottom, diagonals) NOT having a cross (X). Given that the last row has no crosses (X), the sum of the four numbers to be filled in the last row is
- (A)11 (B)10 (C)12 (D)9
- 1st place: It has 2 neighbors so value=2
- 2nd place: It has 4 neighbors so value=4
- 3rd place: It has 3 neighbors so value=3
- 4th place: It has 2 neighbors so value=2
- Sum of four numbers =2+4+3+2=11
- Ans : (A)11

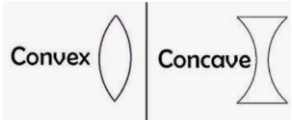
- **GATE CS 2023 | GA Question: 1**
- We reached the station late, and _____ missed the train.
- (A)near (B)nearly (C)utterly (D)mostly
- Near : located a short distance away
- Near can function as a verb, adjective, or preposition. Nearly is used as an adverb to mean "in a close manner" or "almost but not quite."
- Here **utterly** means "**completely**"
- Whereas **mostly** means "**almost all the time**",
- And **nearly** means "**not completely, not exactly**"
- We reached the station late and **nearly** missed the train.
- Ans : (B)nearly

- **GATE CS 2023 | GA Question: 2**
- Kind : _____ : : Often : Frequently (By word meaning)
- (A) Mean
- (B) Type
- (C) Cruel
- (D) Kindly
- Often and frequently are synonym. So, answer be similar to the meaning of the word kind.
- Kind : a group of people or things having similar characteristics.
- "all kinds of music"
- Similar: sort ,type ,variety ,style ,form ,class ,category ,genre ,genus ,species ,race ,breed ,family ,strain ,order ,natural kind ,brand ,make ,model ,design ,version ,line ,mark
- Ans : (B) Type

- **GATE CS 2023 | GA Question: 3**
- A series of natural numbers $F_1, F_2, F_3, F_4, F_5, F_6, F_7, \ldots$ obeys $F_{n+1} = F_n + F_{n-1}$ for all integers $n \geq 2$.
- If $F_6 = 37$, and $F_7 = 60$, then what is F_1?
- (A)4 (B)5 (C)8 (D)9
- $F_{n-1} = F_{n+1} - F_n$
- $F_5 = F_7 - F_6 = 60\text{-}37 = 23$
- $F_4 = F_6 - F_5 = 37\text{-}23 = 14$
- $F_3 = F_5 - F_4 = 23\text{-}14 = 9$
- $F_2 = F_4 - F_3 = 14\text{-}9 = 5$
- $F_1 = F_3 - F_2 = 9\text{-}5 = 4$
- Ans : (A)4

- **GATE CS 2023 | GA Question: 4**
- A survey for a certain year found that 90% of pregnant women received medical care at least once before giving birth. Of these women, 60% received medical care from doctors, while 40% received medical care from other healthcare providers.
- Given this information, which one of the following statements can be inferred with *certainty*?
- (A)More than half of the pregnant women received medical care at least once from a doctor.
- (B)Less than half of the pregnant women received medical care at least once from a doctor.
- (C)More than half of the pregnant women received medical care at most once from a doctor.
- (D)Less than half of the pregnant women received medical care at most once from a doctor.
- Let total women =100 ,90 women received medical care and 10 not received.
- 60% of 90=54 received from Dr.
- 40% of 90=36 received from other healthcare provider.
- (A) 54> 50 true (B) 54< 50 false
- (C) false (D) false
- Ans : (A)

- **GATE CS 2023 | GA Question: 5**
- Looking at the surface of a smooth 3-dimensional object from the outside, which one of the following options is TRUE?
- (A) The surface of the object must be concave everywhere.
- (B) The surface of the object must be convex everywhere.
- (C) The surface of the object may be concave in some places and convex in other places.
- (D) The object can have edges, but no corners.



- We can combine the convex lens and the concave lens and the combined lens is called a convexo-concave or concavo-convex lens for which one side is convex and other side is concave.
- Now, option (D) may be correct depends on what "edge" implies here.
- If you consider the curved edge then option (D) is also correct because consider a cylinder which has 2 curved edges, 1 curved surface, 2 flat faces and no corners.
- But if you consider the edge as an straight line then for a finite three-dimensional object, option (D) is wrong.
- Because where at least two lines or straight edges meet, it creates a corner.
- Ans : (C)

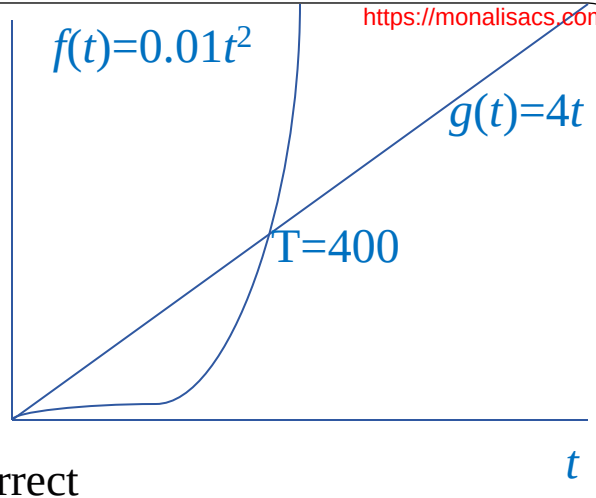
- **GATE CS 2023 | GA Question: 6**
- The country of Zombieland is in distress since more than 75% of its working population is suffering from serious health issues. Studies conducted by competent health experts concluded that a complete lack of physical exercise among its working population was one of the leading causes of their health issues. As one of the measures to address the problem, the Government of Zombieland has decided to provide monetary incentives to those who ride bicycles to work.
- Based only on the information provided above, which one of the following statements can be logically inferred with *certainty*?
- (A) All the working population of Zombieland will henceforth ride bicycles to work.
- (B) Riding bicycles will ensure that all of the working population of Zombieland is free of health issues.
- (C) The health experts suggested to the Government of Zombieland to declare riding bicycles as mandatory.
- (D)The Government of Zombieland believes that riding bicycles is a form of physical exercise.
- (A) **cannot be logically inferred**, as the information provided does not indicate that everyone will necessarily start riding bicycles to work.
- (B) **cannot be logically inferred**, as it is possible that other health issues could be affecting the population.
- (C) **cannot be logically inferred**, as there is no information provided on what the health experts recommended to the government.
- (D)It **can be logically inferred** with certainty. Ans : (D)

GATE CS 2023 | GA Question: 7

- Consider two functions of time (t), $f(t)=0.01t^2$ $g(t)=4\,t$ where $0< t <\infty$.
- Now consider the following two statements:

1. For some $t>0, g(t) > f(t)$.
2. There exists a T, such that $f(t) > g(t)$ for all t > T.

- Which one of the following options is TRUE?
- (A) only (i) is correct (B)only (ii) is correct
- (C) both (i) and (ii) are correct (D)neither (i) nor (ii) is correct



- If t=1 , $f(t)=0.01$, $g(t)=4$ $g(t) > f(t)$
- If t=10 , $f(t)=0.01*100=1$, $g(t)=4*10=40$ $g(t) > f(t)$
- If t=100 , $f(t)=0.01*100,00=100$, $g(t)=4*100=400$ $g(t) > f(t)$
- If t=400 , $f(t)=0.01*1600,00=1600$, $g(t)=4*400=1600$ $g(t) = f(t)$
- If T=400 then for all t > T , $f(t) > g(t)$ (Threshold)
- If t=500 , $f(t)=0.01*25,00,00=2500$, $g(t)=4*500=2000$ $f(t) > g(t)$
- If t=600 , $f(t)=0.01*36,00,00=3600$, $g(t)=4*600=2400$ $f(t) > g(t)$
- Ans : (C) both (i) and (ii) are correct

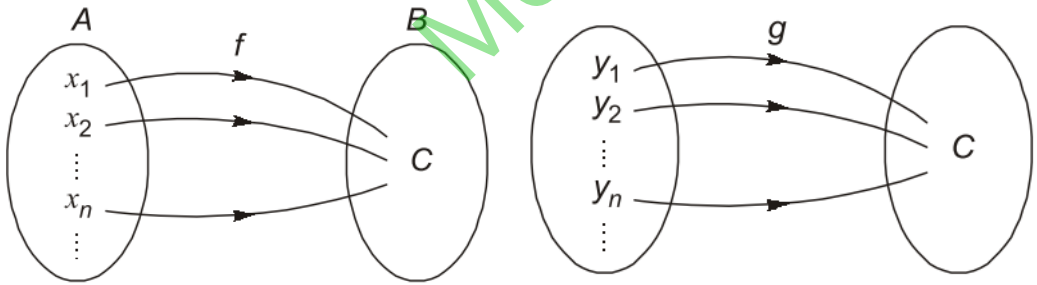
- **GATE CS 2023 | GA Question: 8**
- Which one of the following sentence sequences creates a coherent narrative?

1. Once on the terrace, on her way to her small room in the corner, she notices the man right away.
2. She begins to pant by the time she has climbed all the stairs.
3. Mina has bought vegetables and rice at the market, so her bags are heavy.
4. He was leaning against the parapet, watching the traffic below.

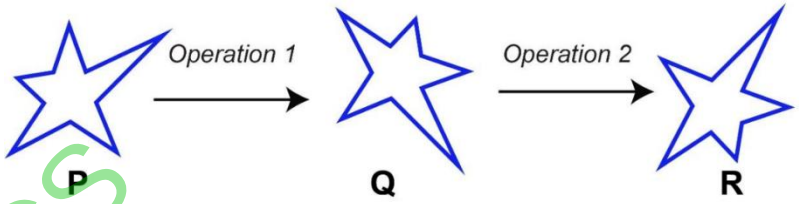
- (A) (i), (ii), (iv), (iii) (B) (ii), (iii), (i), (iv)
- (C) (iv), (ii), (i), (iii) (D) (iii), (ii), (i), (iv)
- Ans : (D) (iii), (ii), (i), (iv)

GATE CS 2023 | GA Question: 9

- $f(x)$ and $g(y)$ are functions of x and y, respectively, and $f(x) = g(y)$ for all real values of x and y .Which one of the following options is *necessarily* TRUE for a x and y?
- (A) $f(x) = 0$ and $g(y)=0$
- (B) $f(x) = g(y) =$ constant
- (C) $f(x) \neq$ constant and $g(y) \neq$ constant
- (D) $f(x) + g(y) = f(x) - g(y)$
- $\forall x, y \in R$, $f(x)= g(y)$ and it is true when all $x \in R$ maps to some element , say c.
- Where c belongs to set R which is the codomain of f and similarly, all $y \in R$ maps to same element c where c belongs to set R which is the codomain of g and in this way both domain and codomain of f and g are equal and $\forall x,y \in R$, $f(x)=f(y)=c$ where c is some arbitrary constant.
- Ans (B)



- **GATE CS 2023 | GA Question: 10**
- Which one of the options best describes the transformation of the 2-dimensional figure P to Q, and then to R, as shown?



- (A) Operation 1: A clockwise rotation by 90° about an axis perpendicular to the plane of the figure
  Operation 2: A reflection along a horizontal line
- (B) Operation 1: A counter clockwise rotation by 90° about an axis perpendicular to the plane of the figure
  Operation 2: A reflection along a horizontal line
- (C) Operation 1: A clockwise rotation by 90° about an axis perpendicular to the plane of the figure
  Operation 2: A reflection along a vertical line
- (D) Operation 1: A counter clockwise rotation by 180° about an axis perpendicular to the plane of the figure
  Operation 2: A reflection along a vertical line
- Ans : (A)

- **GATE CS 2022 | GA Question: 1**
- The _____ is too high for it to be considered _____.
- (A)fair / fare (B)faer / fair (C)fare / fare (D)fare / fair
- The **fare** is too high for it to be considered **fair**.
- fare :the money a passenger on public transportation has to pay.
- Fair :impartial and just, without favoritism or discrimination.
- faer :able. talented, competent.
- Ans: (D)fare / fair

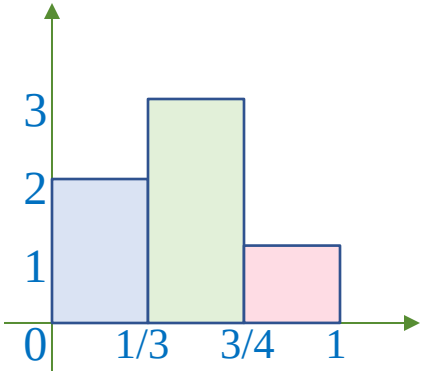
GATE CS 2022 | GA Question: 2

A function $y(x)$ is defined in the interval [0,1] on the x– axis as

$$y(x) = \begin{cases} 2 & \text{if } 0 \le x < \frac{1}{3} \\ 3 & \text{if } \frac{1}{3} \le x < \frac{3}{4} \\ 1 & \text{if } \frac{3}{4} \le x \le 1 \end{cases}$$

Which one of the following is the area under the curve for the interval [0,1] on the x– axis?

(A)5/6 (B)6/5 (C)13/6 (D)6/13



Area of Rectangle =L*W

=2*(1/3-0)+3*(3/4-1/3)+1*(1-3/4)

=2/3+3*5/12+1*1/4

=2/3+15/12+1/4

$= \frac{8+15+3}{12}$

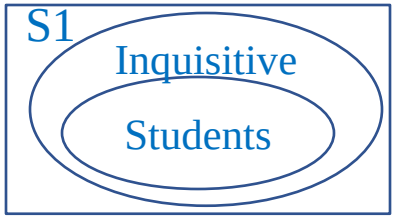
=26/12

Area = 13/6

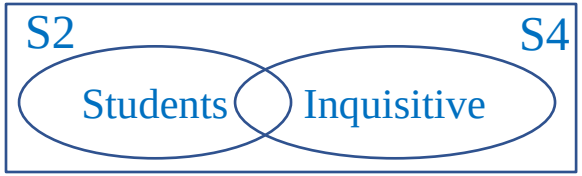
Ans : (C)13/6

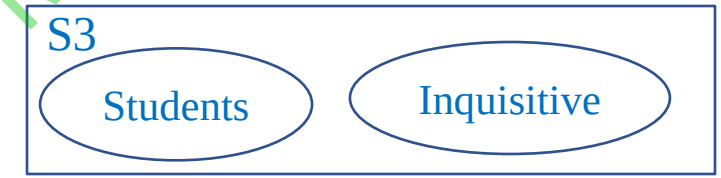
- **GATE CS 2022 | GA Question: 3**
- Let *r* be a root of the equation $x^2+2x+6=0$
- Then the value of the expression (r+2)(r+3)(r+4)(r+5) is
- (A)51 (B)-51 (C)126 (D)-126
- r is root of equation so $r^2+2r+6=0$
- $r^2+2r=-6$
- The expression (r+2)(r+3)(r+4)(r+5)
- $=(r^2+2r+3r+6)(r^2+4r+5r+20)$
- $=(r^2+2r+6+3r)(r^2+2r+6+7r+14)$
- $=(0+3r)(0+7r+14)$
- $=21r^2+42r$
- $= 21(r^2+2r)$
- 21*(-6)=-126
- Ans : (D)-126

GATE CS 2022 | GA Question: 4



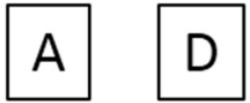
- Given below are four statements.
- Statement 1: All students are inquisitive.
- Statement 2: Some students are inquisitive.
- Statement 3: No student is inquisitive.
- Statement 4: Some students are not inquisitive.
- From the given four statements, find the two statements that **CANNOT BE TRUE** simultaneously, assuming that there is at least one student in the class.
- (A) Statement 1 and Statement 3 (B) Statement 1 and Statement 2
- (C) Statement 2 and Statement 4 (D) Statement 3 and Statement 4
- Ans : (A) Statement 1 and Statement 3



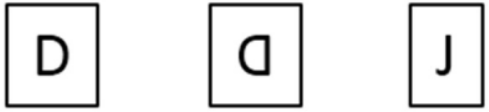


GATE CS 2022 | GA Question: 5

A palindrome is a word that reads the same forwards and backwards. In a game of words, a player has the following two plates painted with letters.



From the additional plates given in the options, which one of the combinations of additional plates would allow the player to construct a five-letter palindrome. The player should use all the five plates exactly once. The plates can be rotated in their plane.

(A) 

(B) 

(C) 

(D) 

(A) A,D,D,D,J not a palindrome, A≠J.

(B) A,R,D,R,A is a palindrome.

(C) A,D,Z,D,E is not a palindrome.

(D) A,D,I,L,Y is not a palindrome

Ans : (B)

GATE CS 2022 | GA Question: 6

- Some people believe that “what gets measured, improves”. Some others believe that “what gets measured, gets gamed”. One possible reason for the difference in the beliefs is the work culture in organizations. In organizations with good work culture, metrics help improve outcomes. However, the same metrics are counterproductive in organizations with poor work culture.
- Which one of the following is the CORRECT logical inference based on the information in the above passage?
- (A) Metrics are useful in organizations with poor work culture
- (B) Metrics are useful in organizations with good work culture
- (C) Metrics are always counterproductive in organizations with good work culture
- (D) Metrics are never useful in organizations with good work culture
- (A) False , as with good work culture, metrics help improve outcomes.
- (B) True
- (C) False , metrics are counterproductive in organizations with poor work culture.
- (D)False ,its useful.
- Ans: (B) Metrics are useful in organizations with good work culture

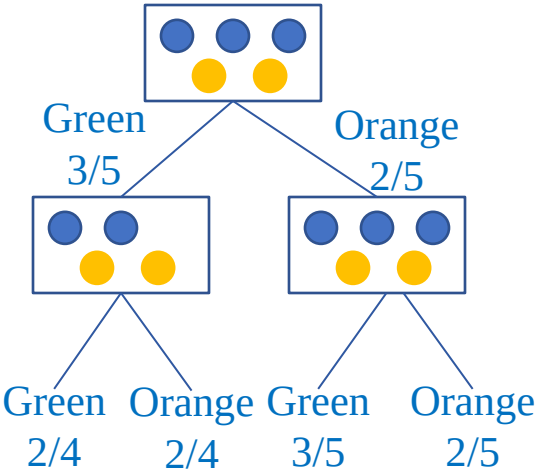
- **GATE CS 2022 | GA Question: 7**
- In a recently conducted national entrance test, boys constituted 65% of those who appeared for the test. Girls constituted the remaining candidates and they accounted for 60% of the qualified candidates.
- Which one of the following is the correct logical inference based on the information provided in the above passage?
- (A) Equal number of boys and girls qualified
- (B)Equal number of boys and girls appeared for the test
- (C)The number of boys who appeared for the test is less than the number of girls who appeared
- (D)The number of boys who qualified the test is less than the number of girls who qualified.
- Let us consider the total number of students =100.
- No of boys who appeared for the test = 65
- No of girls who appeared for the test = 100 – 65 = 35
- 60% of qualifying students are girls. 40% of the qualifying students are boys.
- If 50 students Qualified then 50*(60/100)=30 girls ,50*(40/100)=20 boys.
- Ans : (D)The number of boys who qualified the test is less than the number of girls who qualified.

GATE CS 2022 | GA Question: 8

A box contains five balls of same size and shape. Three of them are green coloured balls and two of them are orange coloured balls. Balls are drawn from the box one at a time. If a green ball is drawn, it is not replaced. If an orange ball is drawn, it is replaced with another orange ball.

First ball is drawn. What is the probability of getting an orange ball in the next draw?

(A) $\frac{1}{2}$ (B) $\frac{8}{25}$ (C) $\frac{19}{50}$ (D) $\frac{23}{50}$



Case 1: If the first ball drawn is green, we will only have four balls in the box instead of five if we get the orange ball in the second draw. 3/5 * 2/4 = 3/10

Case 2: If the first ball drawn is orange, we will be left with just 5 balls in the second draw since the orange ball will be replaced with a new orange ball. 2/5 * 2/5 = 4/25

Probability of getting the orange ball in the 2nd draw will be

3/10 + 4/25 = (15+8)/50 = 23/50

Ans : (D) $\frac{23}{50}$

GATE CS 2022 | GA Question: 9

The corners and mid-points of the sides of a triangle are named using the distinct letters P, Q, R, S, T and U, but not necessarily in the same order. Consider the following statements:

- The line joining P and R is parallel to the line joining Q and S.
- P is placed on the side opposite to the corner T.
- S and U cannot be placed on the same side.

Which one of the following statements is correct based on the above information?

(A)P cannot be placed at a corner

(B)S cannot be placed at a corner

(C)U cannot be placed at a mid-point

(D)R cannot be placed at a corner

A.False ,P placed at corner

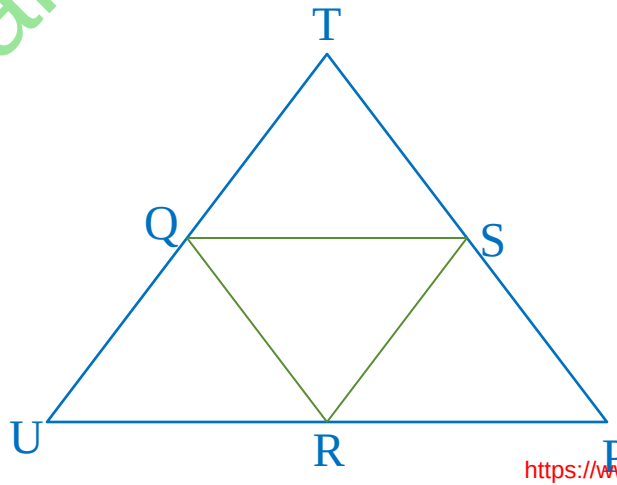
B.True,

If we place S at corner then U and S will be on same side.

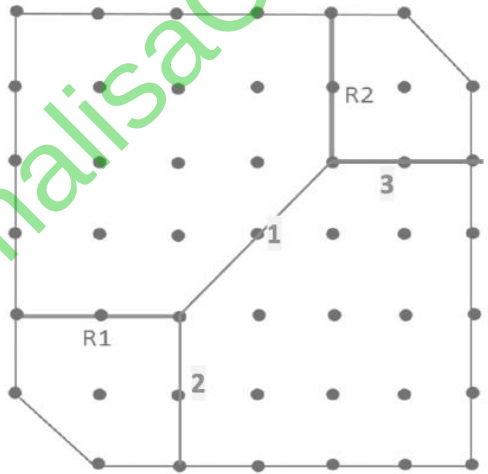
C. False, We can alter R and U position.

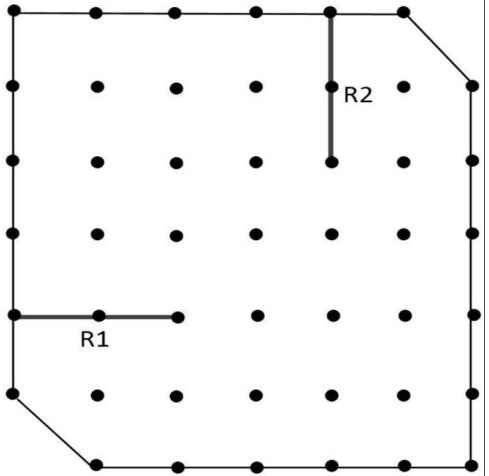
D.False ,R can place at a corner.

Ans : (B)S cannot be placed at a corner



- **GATE CS 2022 | GA Question: 10**
- A plot of land must be divided between four families. They want their individual plots to be similar in shape, not necessarily equal in area. The land has equally spaced poles, marked as dots in the below figure. Two ropes, R1 and R2, are already present and cannot be moved.
- What is the least number of additional straight ropes needed to create the desired plots? A single rope can pass through three poles that are aligned in a straight line.
- (A)2 (B)4 (C)5 (D)3
- Using 3 additional ropes we can divide into similar shape plots
- **Ans :** (D)3





GATE CS 2021 Set 2 | GA Question: 1

Gauri said that she can play the keyboard _____ her sister.

(A)as well as (B)as better as (C)as nicest as (D)as worse as

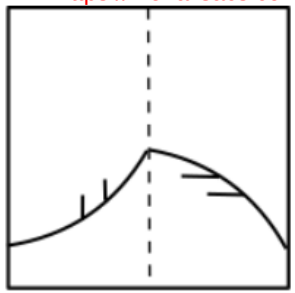
As nice as, as good as, **as well as**, as perfect as, as cute as, as joyful as, as pretty as

All will fit.

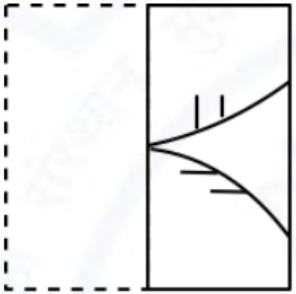
Adjective	Comparative	Superlative
Well	Better	Best
Good	Better	Best
Nice	Nicer	Nicest
Bad	Worse	Worst

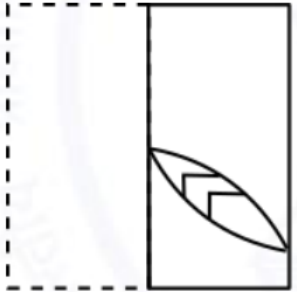
Ans : (A)as well as

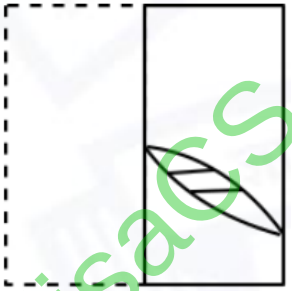
GATE CS 2021 Set 2 | GA Question: 2

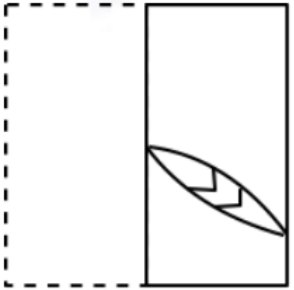


A transparent square sheet shown above is folded along the dotted line. The folded sheet will look like _____.

(A) 

(B) 

(C) 

(D) 

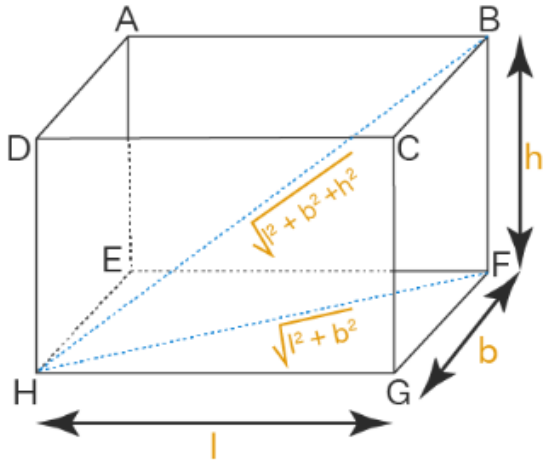
The orientation of lines should not change on folding.

Ans : (B)

GATE CS 2021 Set 2 | GA Question: 3

If θ is the angle, in degrees, between the longest diagonal of the cube and any one of the edges of the cube, then, cos θ =

(A) $\frac{1}{2}$ (B) $\frac{1}{\sqrt{3}}$ (C) $\frac{1}{\sqrt{2}}$ (D) $\frac{\sqrt{3}}{2}$



The longest diagonal is from one corner to the diagonally opposite corner.

If length of each side = a.

Length of the longest diagonal = $\sqrt{a^2 + a^2 + a^2} = \sqrt{3}a$.

Cos θ = Base / Hypotenuse = a / $\sqrt{3}a$ = 1/ $\sqrt{3}$

Ans : (B) $\frac{1}{\sqrt{3}}$

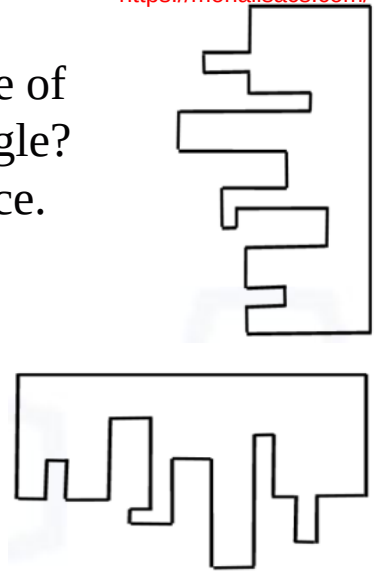
- **GATE CS 2021 Set 2 | GA Question: 4**
- if $\left(x-\frac{1}{2}\right)^2$ - $\left(x-\frac{3}{2}\right)^2$ =x+2 ,then the value of x is :
- (A) 2 (B) 4 (C)6 (D)8
- $a^2-b^2=(a-b)(a+b)$
- $(x-\frac{1}{2}-x+\frac{3}{2})(x-\frac{1}{2}+x-\frac{3}{2})$ =x+2
- 1(2x-2)=x+2
- 2x-x=2+2
- x=4
- Ans : (B) 4

- **GATE CS 2021 Set 2 | GA Question: 5**
- Pen : Write :: Knife : _____
- Which one of the following options maintains a similar logical relation in the above?
- (A) Vegetables (B)Sharp (C)Cut (D)Blunt
- Ans : (C) Cut

- **GATE CS 2021 Set 2 | GA Question: 6**
- Listening to music during exercise improves performance and reduces discomfort. Scientists researched whether listening to music while studying can help students learn better and the results were inconclusive. Students who needed external stimulation for studying fared worse while students who did not need any external stimulation benefited from music.
- Which one of the following statements is the CORRECT inference of the above passage?
- (A) Listening to music has no effect on learning and a positive effect on physical exercise.
- (B) Listening to music has a clear positive effect both in physical exercise and on learning.
- (C) Listening to music has a clear positive effect on physical exercise. Music has a positive effect on learning only in some students.
- (D) Listening to music has a clear positive effect on learning in all students. Music has a positive effect only in some students who exercise.
- (A) False , It help during physical exercise.
- (B) False , for learning results were inconclusive
- (C) True
- (D) False , not for all students.
- Ans : (C)

GATE CS 2021 Set 2 | GA Question: 7

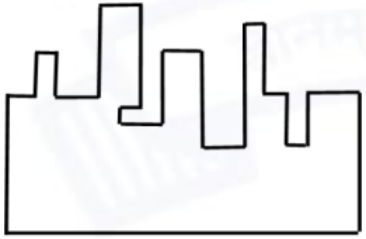
A jigsaw puzzle has 2 pieces. One of the pieces is shown above. Which one of the given options for the missing piece when assembled will form a rectangle? The piece can be moved, rotated or flipped to assemble with the above piece.



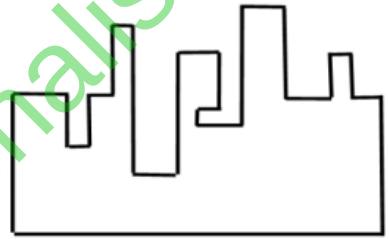
(A)

(B)

(C)



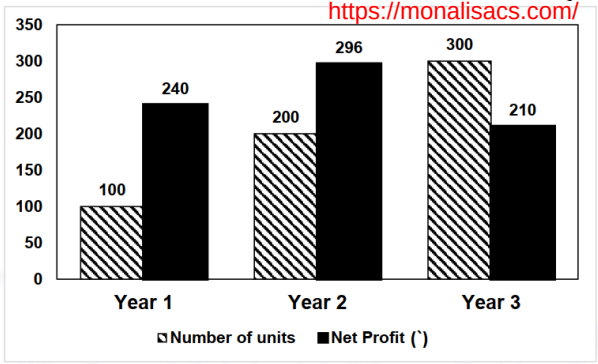
(D)



- Focus L shape part of the shape,
- Eliminate option B and option D.
- Option A is perfectly matching to complete the shape.
- Ans : (A)

- **GATE CS 2021 Set 2 | GA Question: 8**
- The number of students in three classes is in the ratio 3:13:6. If 18 students are added to each class, the ratio changes to 15:35:21.
- The total number of students in all the three classes in the beginning was:
- (A) 22 (B)66 (C)88 (D)110
- Let three classes have 3x ,13x ,6x students .
- After adding 18 students 3x+18, 13x+18 ,6x+18 students .
- 3x+18:13x+18:6x+18=15:35:21
- $\frac{3x+18}{6x+18} = \frac{15}{21} \Rightarrow \frac{x+6}{2x+6} = \frac{5}{7}$
- 7x+42=10x+30
- 3x=12 ⇒ x=4
- Total students in the beginning was =3*4+13*4+6*4=12+52+24=88
- Ans : (C)88

- **GATE CS 2021 Set 2 | GA Question: 9**
- The number of units of a product sold in three different years and the respective net profits are presented in the figure above. The cost/unit in Year 3 was ₹1, which was half the cost/unit in Year 2. The cost/unit in Year 3 was one-third of the cost/unit in Year 1. Taxes were paid on the selling price at 10%, 13%, and 15% respectively for the three years. Net profit is calculated as the difference between the selling price and the sum of cost and taxes paid in that year.



- The ratio of the selling price in Year 2 to the selling price in Year 3 is _____.
- (A)4:3 (B)1:1 (C)3:4 (D)1:2
- Cost/unit in Year 3=₹1= half the cost/unit in Year 2= one-third of the cost/unit in Year 1
- Cost/unit in Year 2=₹2, Cost/unit in Year 1=₹3
- Net profit=SP-(cost+taxes)
- Year 2 :296=SP2-(200*2+13%SP2)=SP2-400-0.13SP2
- 696=0.87SP2 ⇒ SP2=696/ 0.87=800
- Year 3 :210=SP3-(300*1+15%SP3)=SP3-300-0.15SP3
- 510=0.85SP3 ⇒ SP3=510/0.85=600
- SP2:SP3=800:600=4:3
- **Ans :** (A)4:3

- **GATE CS 2021 Set 2 | GA Question: 10**
- Six students P, Q, R, S, T and U, with distinct heights, compare their heights and make the following observations.
- Observation I: S is taller than R.
- Observation II: Q is the shortest of all.
- Observation III: U is taller than only one student.
- Observation IV: T is taller than S but is not the tallest
- The number of students that are taller than R is the same as the number of students shorter than _____.
- (A)T (B)R (C)S (D)P
- I. S > R II.(P,R,S,T,U) > Q (III)U > Q (IV)T>S
- …T>S>R… U>Q
- T is not the tallest so P will be tallest P>T>S>R>U>Q
- 3 students are taller than R,3 students are shorter than S.
- Ans : (C)S

GATE CS 2021 Set 1 | GA Question: 7

Items	Cost (₹)	Profit %	Marked Price (₹)
P	5,400	---	5,860
Q	---	25	10,000

- Details of prices of two items P and Q are presented in the above table. The ratio of cost of item P to cost of item Q is 3:4. Discount is calculated as the difference between the marked price and the selling price. The profit percentage is calculated as the ratio of the difference between selling price and cost, to the cost
- (Profit % = $\frac{\text{Selling price} - \text{Cost}}{\text{Cost}} \times 100$)
- The discount on item Q, as a percentage of its marked price, is _____ (A) 25 (B)12.5 (C)10 (D)5
- $\frac{\text{Cost of P}}{\text{Cost of Q}} = \frac{3}{4} = \frac{5400}{CQ} \Rightarrow$ Cost of Q=5400*4/3 =7200
- Profit % of Q= $\frac{\text{SP} - \text{Cost}}{\text{Cost}} \times 100 \Rightarrow$ $25 = \frac{\text{SP} - \text{Cost}}{\text{Cost}} \times 100$
- $\frac{\text{SP} - 7200}{7200} \times 100 \Rightarrow$ 1800=SP-7200 ⇒SP=9000
- Discount % = $\frac{10000 - 9000}{10000} \times 100 = 10\%$ Ans : (C)10

GATE CS 2021 Set 1 | GA Question: 8

There are five bags each containing identical sets of ten distinct chocolates. One chocolate is picked from each bag.

The probability that at least two chocolates are identical is _____

(A) 0.3024 (B)0.4235 (C)0.6976 (D)0.8125

Probability that at least two chocolates are identical=1- Probability that no two chocolates are identical

No two chocolates are identical :

1st bag=10/10 ,2nd bag=9/10,3rd bag=8/10, 4th bag=7/10 , 5th bag =6/10

Probability = $\frac{10\times9\times8\times7\times6}{10\times10\times10\times10\times10}$ =.3024

Probability that at least two chocolates are identical=1-.3024=.6976

Ans : (C)0.6976

GATE CS 2021 Set 1 | GA Question: 9

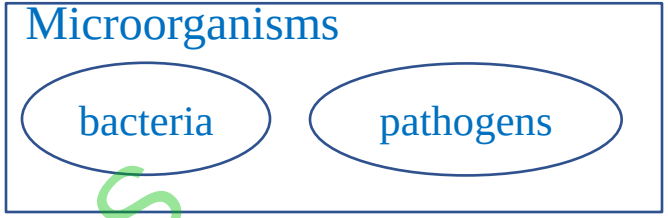
Given below are two statements 1 and 2, and two conclusions I and II

Statement 1: All bacteria are microorganisms.

Statement 2: All pathogens are microorganisms.

Conclusion I: Some pathogens are bacteria.

Conclusion II: All pathogens are not bacteria.



Based on the above statements and conclusions, which one of the following options is logically CORRECT?

(A)Only conclusion I is correct

(B)Only conclusion II is correct

(C)Either conclusion I or II is correct

(D)Neither conclusion I nor II is correct

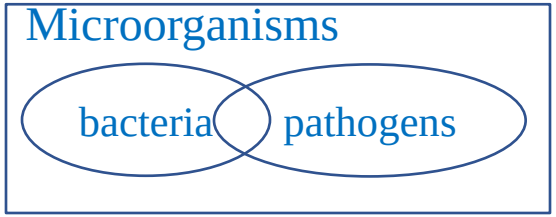
Conclusion I: Some pathogens are bacteria.

Possible

Conclusion II: All pathogens are not bacteria . Possible

Ans : (C)Either conclusion I or II is correct

Due to the ambiguity of option C marks were given for both options C and D.



- **GATE CS 2021 Set 1 | GA Question: 10**
- Some people suggest anti-obesity measures (AOM) such as displaying calorie information in restaurant menus. Such measures sidestep addressing the core problems that cause obesity: poverty and income inequality.
- Which one of the following statements summarizes the passage?
- (A) The proposed AOM addresses the core problems that cause obesity
- (B) If obesity reduces, poverty will naturally reduce, since obesity causes poverty
- (C) AOM are addressing the core problems and are likely to succeed
- (D) AOM are addressing the problem superficially
- Such measures **sidestep** addressing the core problems
- As AOM are not addressing the core problems, they are superficial.
- **Superficial** : not studying or thinking about something in a deep or complete way , only on the surface, not deep
- Ans : (D) AOM are addressing the problem superficially