

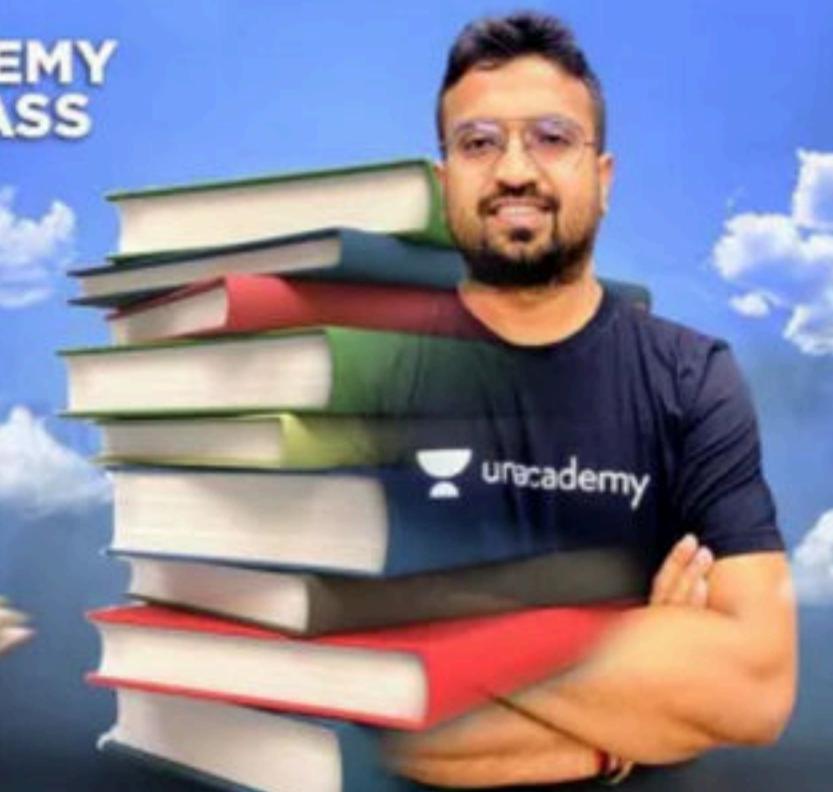




Doubt Clearing Session

Complete Course on General Aptitude - GATE & ESE, 2024 & 2025

UNACADEMY
PLUS CLASS

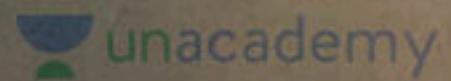


COMPLETE COURSE ON

General Aptitude for
GATE 2024/25

USE CODE ST26

— Saurabh Sir —



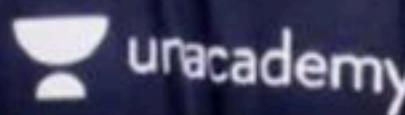
32M+ WATCH MINUTE

12+ YEARS TEACHING EXPERIENCE

SUBSCRIPTION

CODE: ST26

SAURABH THAKUR
IIM ROHTAK





BLUE Vipers

137 / 3

(20.0 Overs)

VS

138 / 5

(19.3 Overs)



Black Panthers cc

Black Panthers cc Won by 3 wickets

Player of the MatchSaurabh Thakur
BLUE Vipers1 (3) /
4.0-3-14
=




102 / 3
(14.1 Overs)

BLUE Vipers

VS

BLUE Vipers Won by 5 wickets

101 / 8
(17.1 Overs)



HawksBolt

Player of the Match

Saurabh Thakur
BLUE Vipers



25 (20) /
4.0-1-15

01



How many values can 'n' take, such that 2^n is exactly divisible by n^2 ?

- (A) 2
- (B) 1
- (C) 0
- (D) Infinite

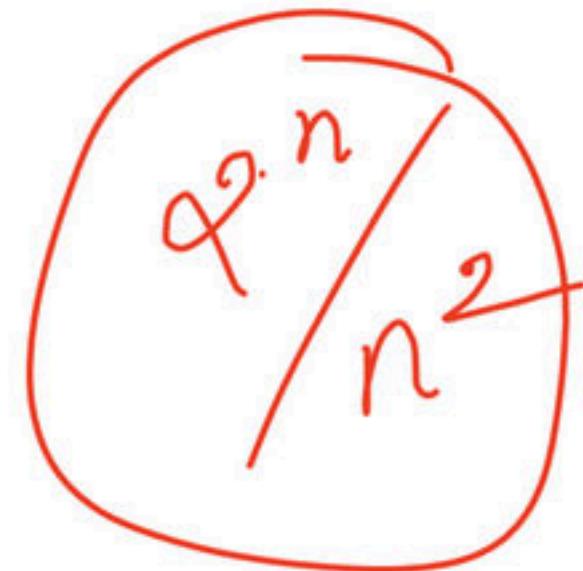
$$\frac{2^n}{n^2}$$

Diagram illustrating the divisibility condition:

- The fraction $\frac{2^n}{n^2}$ is shown.
- A red arrow points from the term 2^n to a circled '1' at the top right.
- A red arrow points from the term n^2 to a circled '1' at the top right.
- Below the fraction, a red circle labeled 'a' is connected by a red arrow to a red circle labeled '1'.
- Below the fraction, a red circle labeled 'b' is connected by a red arrow to a red circle labeled '1'.
- Red arrows also point from the terms 2^n and n^2 down towards the circles 'a' and 'b' respectively.

ANS.- (D) If $n \neq 1$, 2^n is divisible by n^2
 $n = 2$, 2^2 is divisible by 2^2
 $n = 4$, 2^4 is divisible by 4^2
 $n = 8$, 2^8 is divisible by 8^2
 $n = 16$, 2^{16} is divisible by 16^2
And so on...

So, 'n' can take infinite values, such that 2^n is exactly divisible by n^2 .



02

$$\frac{3}{2!} \quad | \quad \frac{4}{3!}$$

A number is such that its square is exactly divisible by its factorial. How many such number(s) is/are there?

- (A) 1
- (B) 2
- (C) 3
- (D) No such number exists

$$\cancel{\frac{n}{n!}}$$

$$\frac{n}{(n-1)!} \rightarrow$$

$$\frac{n}{n!} = \frac{1}{n!}$$

ANS.- (B)

 n^2 is exactly divisible by $n!$.

$$\frac{n^2}{n!} = \frac{n}{(n-1)!}$$

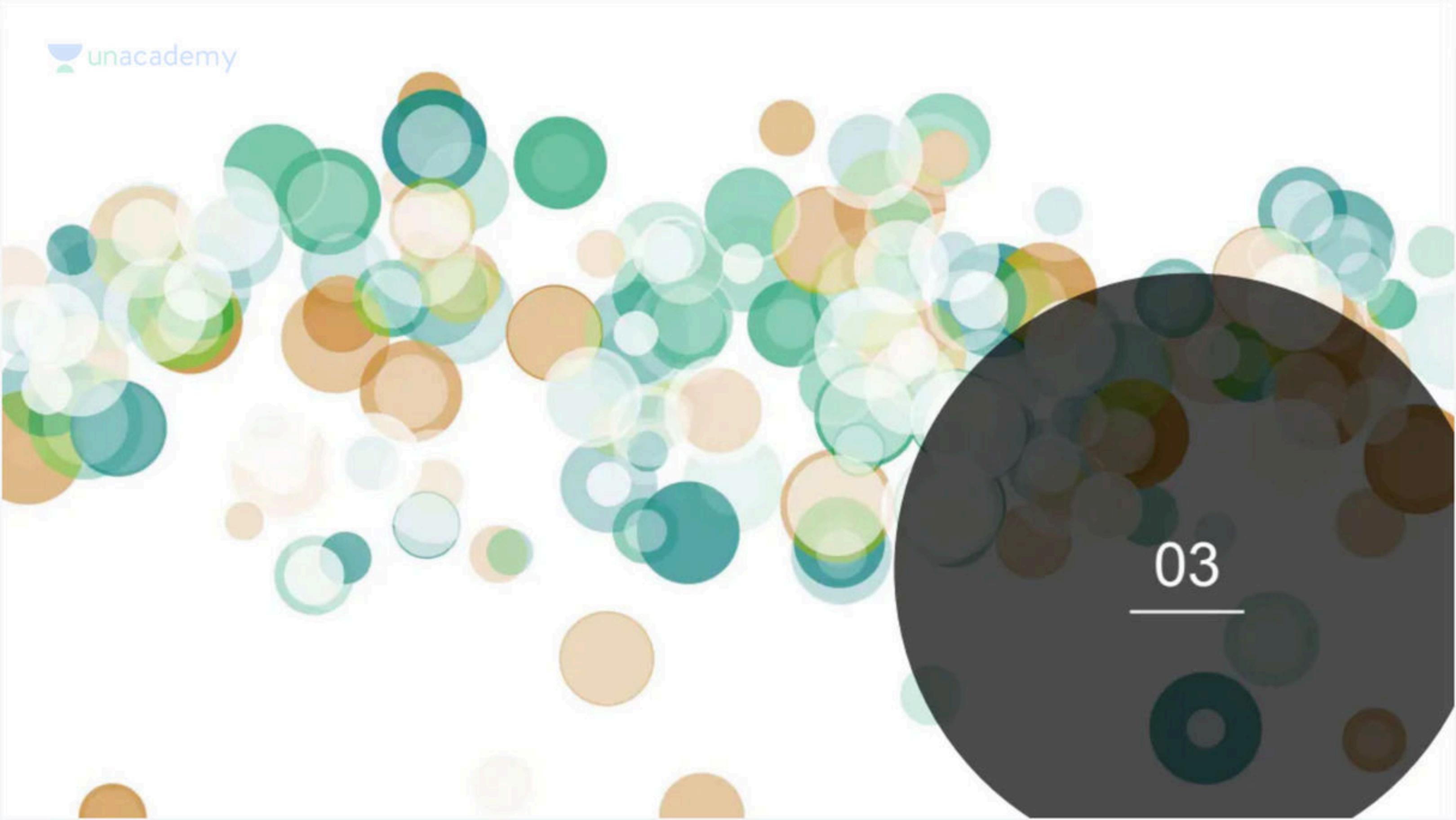
So, n is exactly divisible by $(n-1)!$.

If $n = 1$, $\frac{1}{0!} = 1$ (o.k.)

$n = 2, \frac{2}{1!} = 2$ (o.k.)

$n = 3, \frac{3}{2!}$ (not exactly divisible)

For $n > 3$, $(n-1)! > n$ and so, not divisible.



03



If u is an even number and v and w are odd numbers, then which of the following is not an odd number?

(A) ~~$(u + vw)^2$~~

(C) ~~$\underline{(u^2 + v^2)} + \underline{(v^2 + w^2)}$~~

bad

1/1.

- 1 (3) X
- (B) $v^2(u + w)$
- (D) ~~$(v + w)^2 - u^2$~~

e - e

e



ANS.- (D) Let (u, v, w) be $(4, 1, 3)$, respectively.

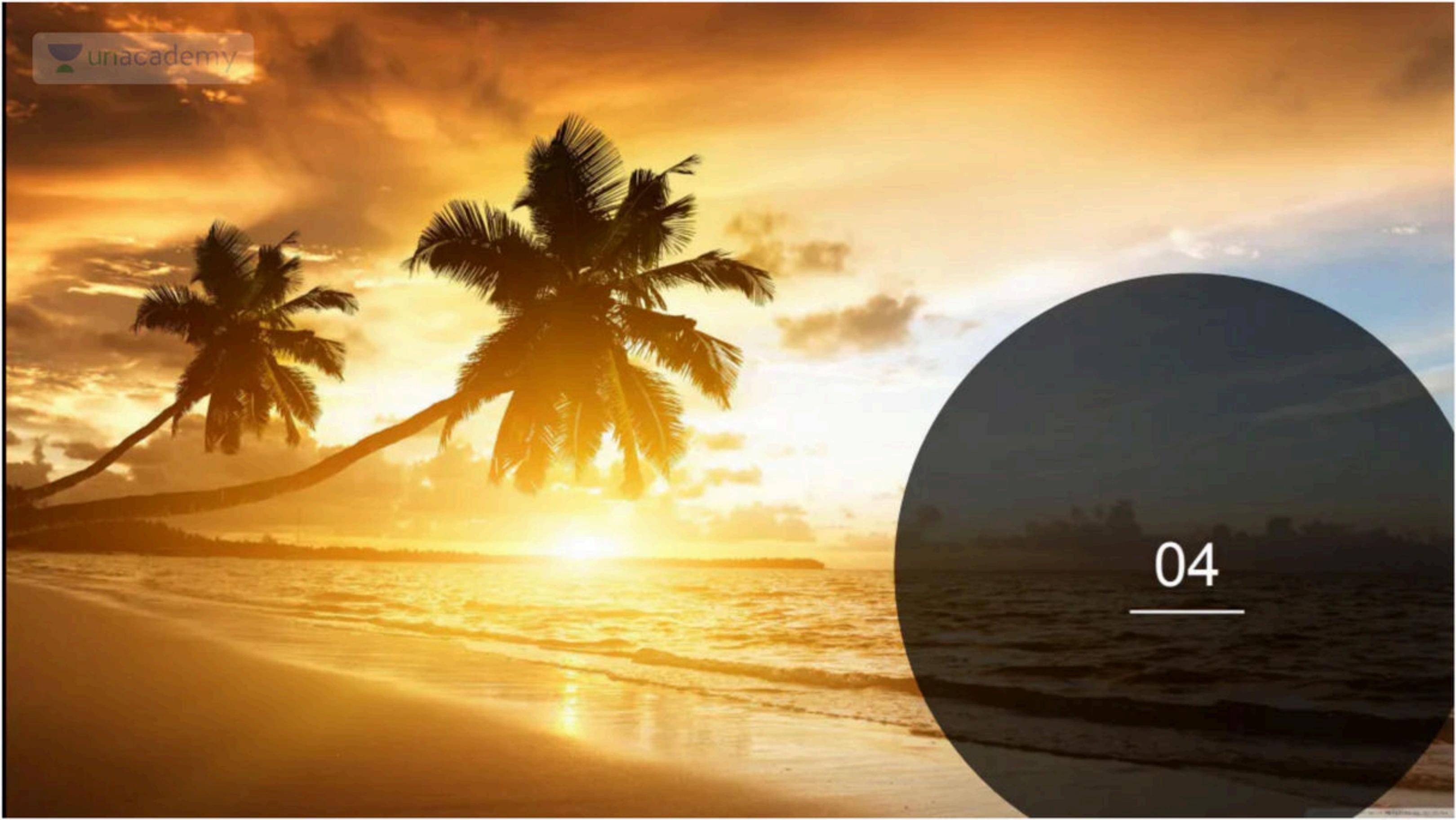
Start testing from the last choice.

(5): $uv + w = 4 + 3 = 7$, which is odd

(4): $(v + w)^2 - u^2 = 16 - 16 = 0$,

So, we can stop here and choose (4) as the answer.

(You can independently verify that the other three choices are odd integers)



04



A number consists of 3 consecutive digits, such that the digit in the units place being the greatest of the three. The number formed by reversing the digits exceeds the original number by 22 times the sum of the digit. Find the number.



ANS.- (B) Let the hundreds digit be a .

Then, the tens digit = $a + 1$ and the units digit = $a + 2$

$$\Rightarrow \text{The number} = 100a + 10(a + 1) + a + 2 = 111a + 12$$

$$\begin{aligned}\text{The number formed by reversing the digits} &= 100(a + 2) + 10(a + 1) + a \\ &= 111a + 210\end{aligned}$$

Since the number formed by reversing the digits exceeds the original number by 22 times, the sum of the digits

$$\Rightarrow 111a + 210 - 111a - 12 = 22(a + 2 + a + 1 + a)$$

$$\Rightarrow 198 = 66a + 66$$

$$\Rightarrow a = 2$$

$$\text{Hence, the required number} = 111a + 12 = 111 \times 2 + 12 = 234$$



05



Which of the following is a multiple of 88?

- (A) 13,92,578
- (B) 1,38,204
- (C) 14,36,280
- (D) 1,43,616



ANS.- (D)

Only 1,43,616 is a multiple of both 11 and 8 and so of 88.

For a number to be divisible by '8' the last three digits should be multiple of '8'.

Option (1) 13,92,578 the last three digits i.e. 578 is not divisible by 8.

Option (2) 1,38,204 the last three digits i.e. 204 is not divisible by 8.

Option (3) 14,36,240 the last three digits i.e. 240 is divisible by 8.

Option (4) 1,43,616 the last three digits i.e. 616 is divisible by 8.

Option (5) 1,43,661 the last three digits i.e. 661 is not divisible by 8.

Now check option (3) and option (4) for multiple of '11'.

For 14,36,280 the sum of digits at odd places and sum of digits at even places is $0 + 2 + 3 + 1 = 6$ and $8 + 6 + 4 = 18$.

Now $18 - 6 = 12$ not multiple of 11. Hence, number 14,36,280 is not multiple of 88.

For 1,43,616 the sum of digits at odd places and sum of digits at even places is $6 + 6 + 4 = 16$ and $1 + 3 + 1 = 5$.

Now $16 - 5 = 11$.

Hence, 1,43,616 is multiple of 88.

06





Which of the following options is true?

- A. $3\sqrt{3}$ is not a rational number.
- B. If 'a' is rational and 'n' is an integer > 1 , then a^n is rational.
- C. 7 is not the cube of a rational number.

- (A) A and B
- (B) A and C
- (C) B and C
- (D) A, B and C



ANS.- (D)

Recall that rational numbers are those that can be expressed as ratios i.e. as a/b ($b \neq 0$) and $\sqrt{3}$ is irrational.

If 'a' is rational, then $a^2, a^3 \dots$ will be rational.

Cube root of 7 is irrational.

So, 7 is not the cube of a rational number.

Hence, all the statements are true.

07



What is the remainder when $1923^{1924^{1925}}$ is divided by 1924?

(A) 1922

(C) 1

(B) 1923

(D) 0

Given

$$\frac{1923}{1924} \rightarrow$$

1924

1924

$$(a+1)^n \rightarrow 1$$

$a^n / (a+1)$

$n = 1924 @$

$n = \text{even}$

1



ANS.- (C)
$$\frac{1923^{1924^{1925}}}{1924} = \frac{(1924 - 1)^{1924^{1925}}}{1924}$$

$$= \frac{(-1)^{1924^{1925}}}{1924}$$

= 1 (remainder) as $(-1)^{\text{even number}} = 1$

08



123456789321

If $N = (\cancel{1}\cancel{1}\cancel{1}\cancel{1}\cancel{1}\cancel{1})^2$, then what is the sum of the digits of N ?

- (A) 54
- (B) 62
- (C) 64
- (D) 68

$$\cancel{1}^2 = 121$$

$$\cancel{1}\cancel{1}^2 = 12321$$

$$\cancel{1}\cancel{1}\cancel{1}^2 = \underline{1234321}$$

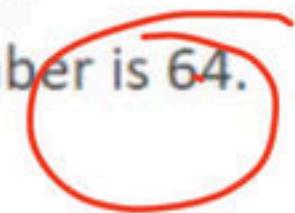


ANS.- (C) $1^2 = 1$, $11^2 = 121$, $111^2 = 12321$, $1111^2 = 1234321$ and $11111^2 = 123454321$

$$\Rightarrow 11111111^2 = 123456787654321$$

The sum of the digits of given number is 64.

Answer: (3)





09



Mother: In order to learn effectively, students need to spend at least ten hours each week doing homework. However, my son Todd spends so much time playing video games that he barely has any time left for his homework. In order to improve Todd's academic performance, I will sell our family's video-game console.

The mother's plan to improve her son's academic performance depends on which of the following assumptions?

- A. Video games are more addictive than television
- B. Reading, writing, and arithmetic are more important than familiarity with 21st-century media
- C. Adolescence is a crucial period in cognitive and emotional development.
- D. In the absence of the video-game console, Todd will spend more time doing homework





2-Explanation: The mother believes that her son's video-game habit is preventing him from doing enough homework. She plans to stimulate his academic performance by getting rid of the video-game console. Clearly, she must be assuming that her son will spend more time on homework once the video-game console is gone.

- (A) The mother's argument does not mention television. We do not even know whether there is a television in the house. Therefore, her argument does not depend on any assumptions about television.
- (B) We have no information about what subjects Todd is studying or about what subjects his mother values. Even if his mother is concerned about him spending too much time on video games, she does not necessarily believe that familiarity with "21st-century media" is unimportant; she may simply think that Todd has already played so many games as to be amply familiar with the genre.
- (C) Todd's mother's argument does not depend on adolescence being a "crucial" period. Her argument about homework could be perfectly sound even if adolescence were of only average importance in a person's cognitive and emotional development.
- (D) CORRECT. Todd's mother believes that the video-game console is preventing him from doing enough homework. Her plan to boost his academic performance by getting rid of the console depends on the idea that he will actually study more when the console is gone.



10

~~P/C~~

X
(sgn)

(X) (Mike)

A recent study demonstrated that parents living with children consume nearly five more grams of fat per day, on average, than do adults living without children. The higher fat intake among these parents is probably attributable to their snacking on the pizza and cookies that tend to be plentiful in households with children.

Which of the following, if true, would most seriously weaken this explanation of the parents' higher fat intake?

- A. On an average, households with children spend \$15 more per week on pizza and cookies than do households without children
- B. Households with children purchase much more whole milk, which has a high fat content, than do households without children
- C. Children consume most of the pizza and cookies in any given household
- D. Parents ought to set a good example for their children, in dietary choices as in other matters
- E. Not all parents living with children consume more grams of fat than do adults living without children



3-Explanation: The first sentence is a premise, which we can take as a statement of fact. The second sentence is a claim made by the author: that the source of the extra fat grams is pizza and cookies. We are asked to weaken this claim; note that we need to tear down the conclusion, not the premise.

(A) Strengthen. This choice supports the conclusion with evidence that households with children tend to have more pizza and cookies present.

(B) CORRECT. Weaken. This choice presents whole milk as an alternative source for the extra grams of fat, and thereby weakens the conclusion that the extra fat *must* be from pizza and cookies.

(C) Irrelevant. Children may consume most of the pizza and cookies, but the remainder could be consumed by their parents. This answer choice does not provide enough information to address the conclusion that the adults eat more pizza and cookies than they would if no children were present.

(D) Irrelevant. This argument starts with a premise about what parents actually do, and attempts to explain their behavior. Statements about what parents ought to be doing are not relevant to the argument.

(E) Irrelevant. This argument is about how to explain the higher fat intake of the average parent living with children. The fact that some parents are not average is both unsurprising and irrelevant.

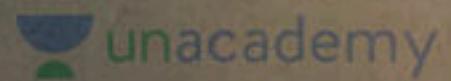


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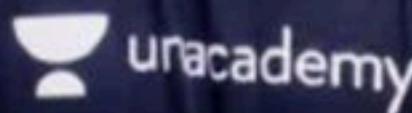


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CODE:ST26

SAURABH THAKUR
IIM ROHTAK





CRITICAL REASONING



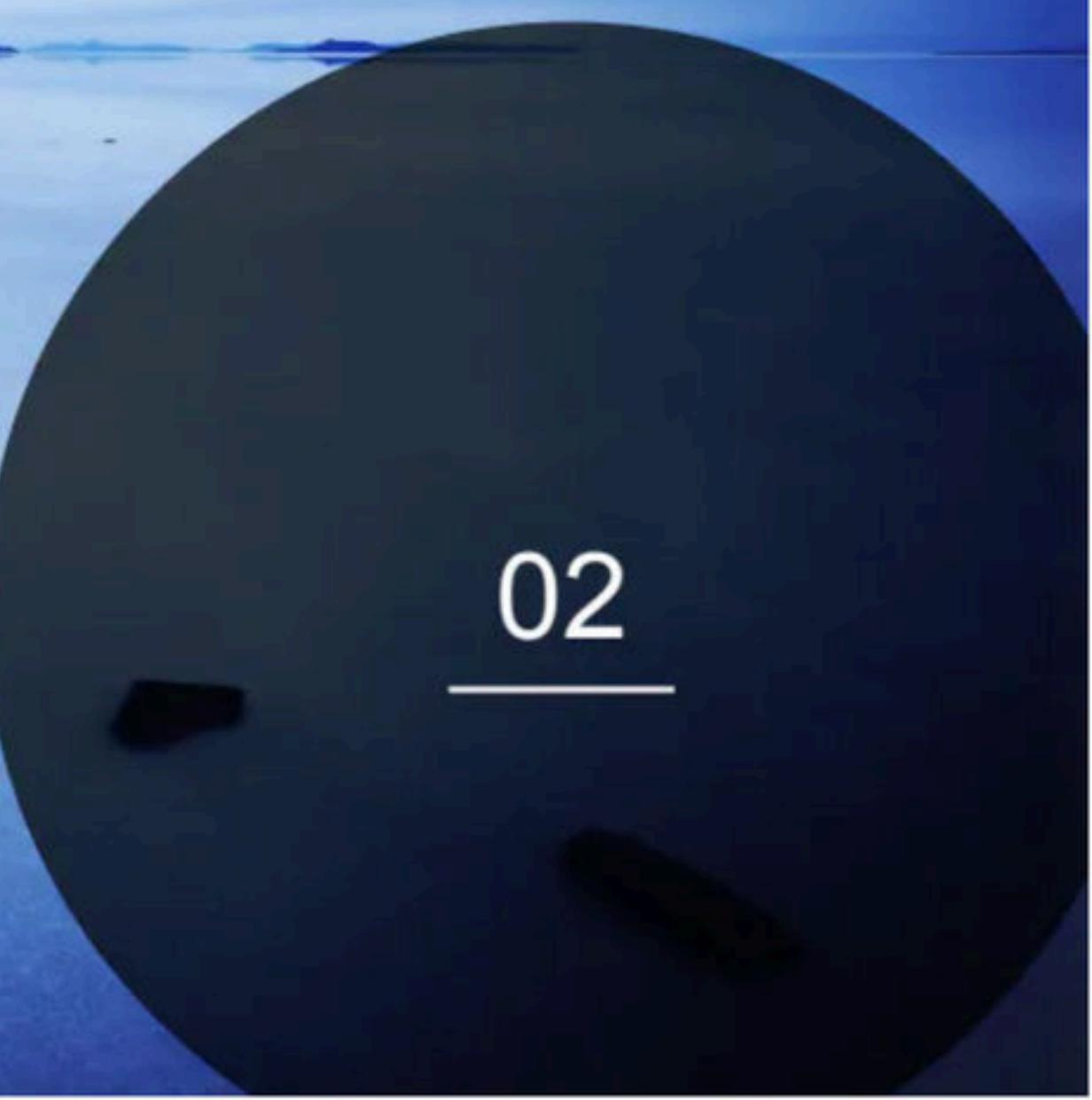
01



According to Rakesh, Mr Sharma is in deep trouble. His elder daughter, returned home after a painful divorce. Unfortunately, his second daughter, of age 30 is still unmarried. Mr Sharma is getting old. He is already 65.

The assumption in Rakesh's conclusion is

- (A) Mr. Sharma is not fit to work now.
- (B) Mr. Sharma will pass away soon, as he is getting old.
- (C) Unmarried daughters are dangerous for their parents.
- (D) Unmarried or divorced daughter's bad fortune can pose problems for their elderly father.



02



An eight-year old Saudi Arabian girl who was married off by her father to a 58-year-old man has been told she cannot divorce her husband until she reaches puberty. Lawyer Abdu Jtili said the divorce petition was filed by the unnamed girl's divorced mother in August after the marriage contract was signed by her father and the groom. "The judge has dismissed the plea because she [the mother] does not have the right to file, and ordered that the plea should be filed by the girl herself

when she reaches puberty," lawyer Abdullah Jtili told the AFP news agency.

It can be inferred from the above paragraph that

- (A) Judges are cruel in Saudi Arabia.
- (B) The eight-year old girl is considered legally married.
- (C) In Saudi Arabia, women cannot file for a divorce.
- (D) Girls below puberty do not have marital rights in Saudi Arabia.



03



Indians have a bad habit of spitting in public places. Most of the walls in Government Buildings have turned red or become very dirty thanks to the constant spitting by betel-chewing Indians. But Jankidas, the manager of the public works department in Jhandewalan has come out with a novel idea. He has installed religious signs or painted religious pictures on the walls in the corridors leading to his department. He is sure that no Indian would spit on the corridor walls leading to his department.

It has been assumed by Jankidas that

- (A) The corridors leading to his department are dirty.
- (B) Indians fear the wrath of the Gods.
- (C) Indians do not eat betel near religious pictures.
- (D) Indians have regard for religion.



04



Jnana and Bhakti are two commonly adopted spiritual paths by spiritually inclined people. The Jnani considers Bhakti to be only a means to Moksha. Bhakti leads to purification of the mind. The purified mind becomes fit to listen to Jnana which in due course of time results in Moksha. The Bhakta on the other hand is not interested in Moksha. He feels that Bhakti is the means and also the goal.

It can be inferred from the above paragraph that

- (A) Jnanis and Bhaktas have an inherent dislike for each other.
- (B) Jnanis and Bhaktas both strive for a pure mind.
- (C) The Bhakta is idle most of the time as his means and goal are the same.
- (D) None of the above.



05



Computers were invented for performing only high-end useful computations. However, it is no understatement that they have taken over our world today. The internet, for example, is ubiquitous. Many believe that the internet itself is an unintended consequence of the original invention. With the advent of mobile computing on our phones, a whole new dimension is now enabled. One is left wondering if all these developments are good or, more importantly, required.

Which of the statement(s) below is/are logically valid and can be inferred from the above paragraph?

- (i) The author believes that computers are not good for us.
 - (ii) Mobile computers and the internet are both intended inventions
-
- (A) (i) only
 - (B) (ii) only
 - (C) both (i) and (ii)
 - (D) neither (i) nor (ii)

[GATE 2016 : IISc Bangalore (EE Set - 1, CSE Set - 2)]

A photograph of a person's hand reaching upwards towards a bright sun setting over a body of water. The sky is a gradient of orange and blue. The number '06' is overlaid in the bottom right corner.

06



Nuendo is a studio software which is used by most of the recordists in San Hose, America. It allows one to record 25 tracks simultaneously. It is faster as compared to 'cubase' – the software which was used by the recordists earlier. Hence, nuendo should be used by recordists in India also.

The conclusion above would be strengthened if it was true that

- (A) Indians prefer 'cubase' as it does not demand high system requirements.
- (B) Lot of time is wasted in Indian studios due to inefficient software
- (C) Indian recordists record a maximum of 10 tracks at a time.
- (D) None of the Indian recordists have traveled to San Hose.



07 —



Geneticists say that are very close to confirming the genetic roots of psychiatric illnesses such as depression and schizophrenia, and consequently, that doctors will be able to eradicate these diseases through early identification and gene therapy.

On which of the following assumptions dose the statement above rely?

- (A) Strategies are now available for eliminating psychiatric illness.
- (B) Certain psychiatric illness have a genetic basis.
- (C) All human disease can be traced back to genes and how they are expressed.
- (D) In the future, genetics will become the only relevant field for identifying psychiatric illness.

[GATE 2014 : IIT Kharagpur (EE, Set – 1, CSE Set - 1)]



08



In Philosophy, there are no solved problems, there are only unsolved problems. Once a philosophical problem gets solved, then it goes outside philosophy to become either a part of some established knowledge system or becomes an independent discipline. The Philosopher's job ends when a problem is settled, and then there is no more philosophy in it.

A suitable conclusion from the above paragraph would be

- (A) Philosophy can exist only when a problem is unsolved.
- (B) Problems exist only in philosophy.
- (C) Philosophers are generally jobless and indifferent to the world of problems.
- (D) There are innumerable problems to be solved in this world.



09



Ann Trason, Scott Jurek, Matt Carpenter. These are the megastars of ultra-distance running, athletes who pound out not just marathons, but dozens of them back-to-back, over Rocky Mountain passes and across the scorching floor of Death Valley. If their names are unfamiliar, it's probably because this type of extreme running is almost universally seen as a fringe sport, the habit of the superhumanly fit, the masochistic, the slightly deranged.

Which of the following can be inferred from the above statement?

- (A) The ultra-marathoners are using their bodies for endurance running.
- (B) Being able to run for extended lengths of time is an adapted trait.
- (C) Extreme running is not for the normal run-of-the mill sportsperson.
- (D) Extreme sports people remain unknown because of the stress involved.

10



Wanted Temporary, Part-time persons for the post of Field Interviewer to conduct personal interviews to collect and collate economic data. Requirements: High School-pass, must be available for Day, Evening and Saturday work. Transportation paid, expenses reimbursed.

Which one of the following is the best inference from the above advertisement?

- (A) Gender-discriminatory
- (B) Xenophobic
- (C) Not designed to make the post attractive
- (D) Not gender-discriminatory

[GATE 2012 : IIT Delhi (EE, CSE, ME, CE)]



Consumers are using their mobile phones to download tens of millions of games, songs, ring tones and video programs. And they shell out money for these items, even as they resist paying for similar digital goodies online using their computers. It is a curious equation: pay for stuff on a tiny, low-resolution screen while getting some of the very same games and video free on a fancy wide-screen monitor.

If all of the statements in the passage are true each of the following must also be true EXCEPT :

- (A) Mobile phones are a status symbol for today's consumers.
- (B) The companies producing mobile content are thriving.
- (C) The users enjoy the availability of music download at their fingertips.
- (D) Stuff on computer seem to be easily available so why pay money.

12



Abhishek is elder to Savan, Savan is younger to Anshul. The correct relations is

- (A) Abhishek is elder to Anshul
- (B) Anshul is elder to Abhishek
- (C) Abhishek and Anshul are of same age
- (D) No conclusion can be drawn

[GATE 2013 : IIT Bombay (CE)]



In a group of four children, Som is younger to Riaz. Shiv is elder to Ansu. Ansu is youngest in the group. Which of the following statements is/are required to find the eldest child in the group?

Statements :

1. Shiv is younger to Riaz.
2. Shiv is elder to Som.

- (A) Statement 1 by itself determines the eldest child.
- (B) Statement 2 by itself determines the eldest child.
- (C) Statement 1 and 2 are both required to determine the eldest child.
- (D) Statement 1 and 2 are not sufficient to determine the eldest child.

[GATE 2014 : IIT Kharagpur (CE Set - 2, IN)]



Consider five people – Mita, Ganga, Rekha, Lakshmi and Sana. Ganga is taller than both Rekha and Lakshmi. Lakshmi is taller than Sana. Mita is taller than Ganga. Which of the following conclusions are true?

- 1. Lakshmi is taller than Rekha
 - 2. Rekha is shorter than Mita
 - 3. Rekha is taller than Sana
 - 4. Sana is shorter than Ganga

(A) 2 and 4
(C) 1 and 3

- (B) 1 only
- (D) 3 only

[GATE 2019 : IIT Madras (EE)]



15



Read the following paragraph and choose the correct statement. Climate change has reduced human security and threatened human well being. An ignored reality of human progress is that human security largely depends upon environmental security. But on the contrary, human progress seems contradictory to environmental security. To keep up both at the required level is a challenge to be addressed by one and all. One of the ways to curb the climate change may be suitable scientific innovations, while the other may be the Gandhian perspective on small scale progress with focus on sustainability.

- (A) Human progress and security are positively associated with environmental security.
- (B) Human progress is contradictory to environmental security.
- (C) Human security is contradictory to environmental security.
- (D) Human progress depends upon environmental security.

[GATE 2015 : IIT Kanpur (EC Set - 1)]



16



Choose the most appropriate phrase from the options given below to complete the following sentence.

India is a post-colonial country because

- (A) It was a former British colony
- (B) Indian Information Technology professionals have colonized the world
- (C) India does not follow any colonial practices
- (D) India has helped other countries gain freedom

[GATE 2014 : IIT Kharagpur (CSE Set - 2, EE Set - 2)]



Few school curricula include a unit on how to deal with bereavement and grief, and yet all students at some point in their lives suffer from losses through death and parting. Based on the above passage which topic would not be included in a unit on bereavement?

- (A) How to write a letter of condolence
 - (B) What emotional stages are passed through in the healing process
 - (C) What the leading causes of death are
 - (D) How to give support to a grieving friend
- Choose the most appropriate word from the options given below to complete the following sentence:

[GATE 2011 : IIT Madras (CSE, ME, CE)]

4

+

Euphemism.





One of the legacies of the Roman legions was discipline. IN the legions, military law prevailed and discipline was brutal. Discipline on the battlefield kept units obedient, intact and fighting, even when the odds and conditions were against them.

Which one of the following statements best sums up the meaning of the above passage?

- (A) Thorough regimentation was the main reason for the efficiency of the Roman legions even in adverse circumstances.
- (B) The legions were treated inhumanly as if the men were animals.
- (C) Discipline was the armies inheritance from their seniors.
- (D) The harsh discipline to which the legions were, subjected to led to the odds and conditions being against them.

[GATE 2012 : IIT Delhi (EC, EE, IN)]

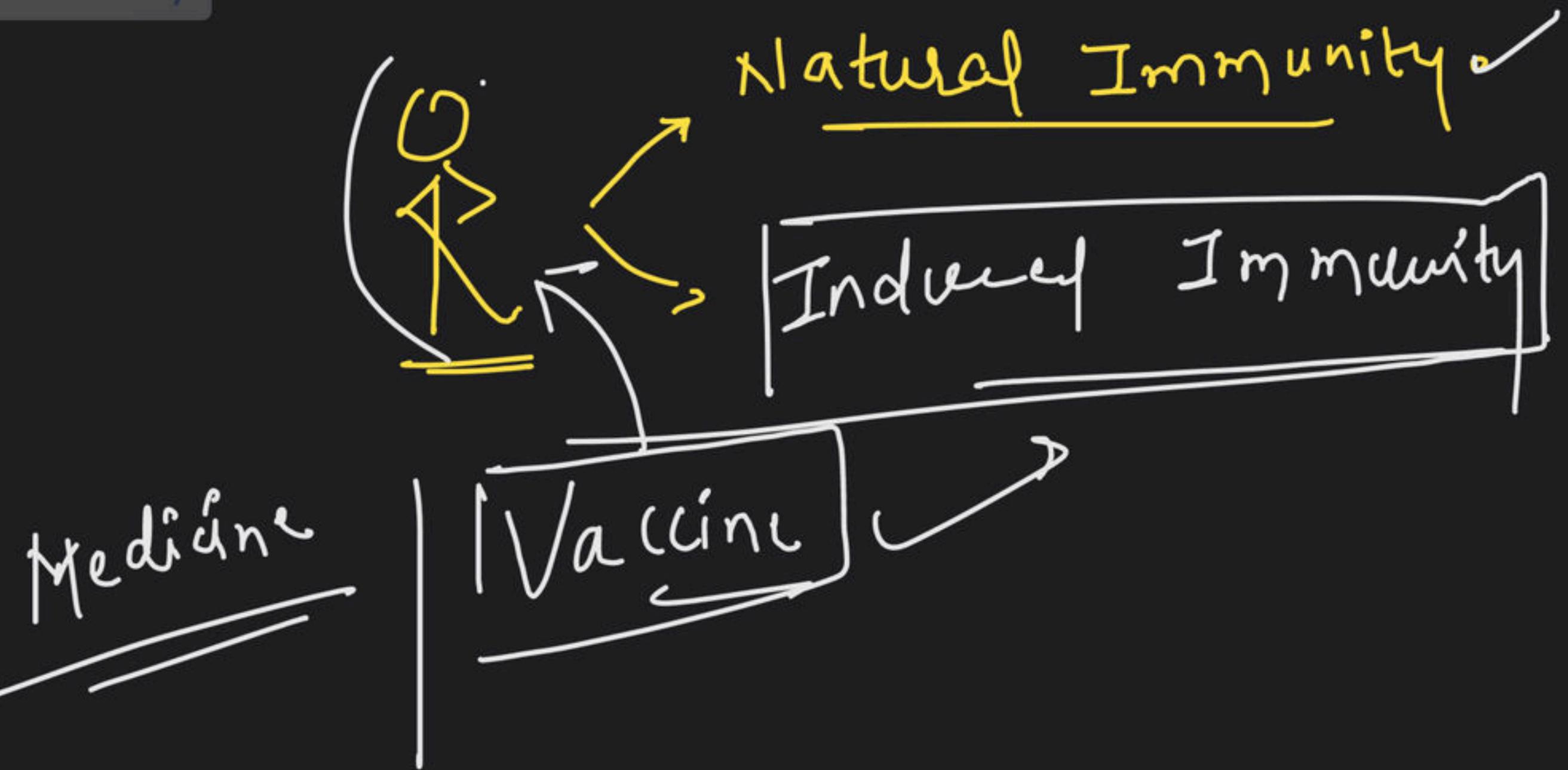


19



The horse has played a little known but very important role in the field of medicine. Horses were injected with toxins of diseases until their blood built up immunities. Then a serum was made from their blood. Serums to fight with diphtheria and tetanus were developed this way. It can be inferred from the passage that horses were

- (A) Given immunity to diseases
- (B) Generally quite immune to diseases
- (C) Given medicines to fight toxins
- (D) Given diphtheria and tetanus serums





20



Moving into a world of big data will require us to change our thinking about the merits of exactitude. To apply the conventional mindset of measurement to the digital, connected world of the twenty-first century is to miss a crucial point. As mentioned earlier, the obsession with exactness is an artefact of the information-deprived analog era. When data was sparse, every data point was critical, and thus great care was taken to avoid letting any point bias the analysis.

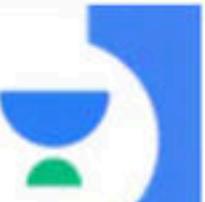
From “BIG DATA” Viktor Mayer-Schonberger and Kenneth Cukier

The main point of the paragraph is:

- (A) The twenty-first century is a digital world
- (B) Big data is obsessed with exactness
- (C) Exactitude is not critical in dealing with big data
- (D) Sparse data leads to a bias in the analysis

[GATE 2014 : IIT Kharagpur (CE Set - 2, IN)]





The Palghat Gap (or Palakkad Gap), a region about 30 km wide in the southern part of the Western Ghats in India, is lower than the hilly terrain to its north and south. The exact reasons for the formation of this gap are not clear. It results in the neighboring regions of Tamil Nadu getting more rainfall from the South West monsoon and the neighboring regions of Kerala having higher summer temperatures. What can be inferred from this passage?

- (A) The Palghat gap is caused by high rainfall and high temperatures in southern Tamil Nadu and Kerala
- (B) The regions in Tamil Nadu and Kerala that are near the Palghat Gap are low lying
- (C) The low terrain of the Palghat Gap has a significant impact on weather patterns in neighbouring parts of Tamil Nadu and Kerala
- (D) Higher summer temperatures result in higher rainfall near the Palghat Gap area

[GATE 2014 : IIT Kharagpur (CSE Set - 1, EE Set - 1)]



22



Statement: There were different streams of freedom movements in colonial India carried out by the moderates, liberals, radicals, socialists, and so on.

Which one of the following is the best inference from the above statement?

- (A) The emergence of nationalism in colonial India led to our Independence
- (B) Nationalism in India emerged in the context of colonialism
- (C) Nationalism in India is homogeneous
- (D) Nationalism in India is heterogeneous

[GATE 2013 : IIT Bombay (EC, EE, IN)]



The old city of Koenigsberg, which had a German majority population before World War 2, is now called Kaliningrad. After the events of the war, Kaliningrad is now a Russian territory and has a predominantly Russian population. It is bordered by the Baltic Sea on the north and the countries of Poland to the south and west and Lithuania to the east respectively. Which of the statements below can be inferred from this passage?

- (A) Kaliningrad was historically Russian in its ethnic make up
- (B) Kaliningrad is a part of Russia despite it not being contiguous with the rest of Russia
- (C) Koenigsberg was renamed Kaliningrad, as that was its original Russian name
- (D) Poland and Lithuania are on the route from Kaliningrad to the rest of Russia

[GATE 2014 : IIT Kharagpur (CSE Set - 2, EE Set - 2)]



Tanya is older than Eric. Cliff is older than Tanya. Eric is older than Cliff. If the first two statements are true, then the third statement is:

- (A) True
- (B) False
- (C) Uncertain
- (D) Data insufficient

[GATE 2015 : IIT Kanpur (ME Set - 3, IN)]



25



Where the film Bombay loses out is where every commercial film congenitally goes awry - becoming too simplistic to address serious issues and failing to translate real life to reel.

Which of the following can be inferred from the above line?

- (A) The film's director aimed at recreating real life on the silver screen.
- (B) The film was too simplistic for the audience's taste.
- (C) The film was successful in spite of its shortcomings.
- (D) None of these

26





Bhaichung was observing the pattern of people entering and leaving a car service centre. There was a single window where customers were being served. He saw that people inevitable came out of the centre in the order that they went in. however, the time they spent inside seemed to vary a lot : some people came out in a matter of minutes while for others in took much longer.

From this, what can one conclude?

- (A) The centre operates on a first-come-firstserved basis, but with variable service times, depending on specific customer needs.
- (B) Customers were served in an arbitrary order, since they tool varying amounts of time for service completion in the centre.
- (C) Since some people came out within a few minutes of entering the centre, the system is likely to operate on a last-comefirstserved basis.
- (D) Entering the centre early ensured that one would have shorter service times and most people attempted to do this.

27



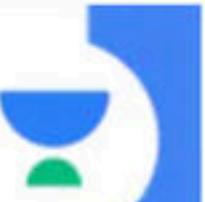
Rajan was not happy that Sajan decided to do the project on his own. On observing his unhappiness, Sajan explained to Rajan that he preferred to work independently.

Which one of the statements below is logically valid and can be inferred from the above sentences?

- (A) Rajan has decided to work only in a group.
- (B) Rajan and Sajan were formed into a group against their wishes.
- (C) Sajan had decided to give in to Rajan's request to work with him.
- (D) Rajan had believed that Sajan and he would be working together.

[GATE 2014 : IIT Kharagpur (CE Set - 1)]

28



Lamenting the gradual sidelining of the arts ill school curricula, a group of prominent artists wrote to the Chief Minister last year, asking him to allocate more funds to support arts education in schools. However, no such increase has been announced in this year's Budget. The artists expressed their deep anguish at their request not being approved, but many of them remain optimistic about funding in the future.

Which of the staternent(s) below is/are logically valid and can be inferred from the above statements?

- (i) The artists expected funding for the arts to increase this year
 - (ii) The Chief Minister was receptive to the idea of increasing funding for the arts
 - (iii) The Chief Minister is a prominent artist
 - (iv) Schools are giving less importance to arts education nowadays
- | | |
|------------------------|-------------------|
| (A) (iii) and (iv) | (B) (i) and (iv) |
| (C) (i), (ii) and (iv) | (D) (i) and (iii) |

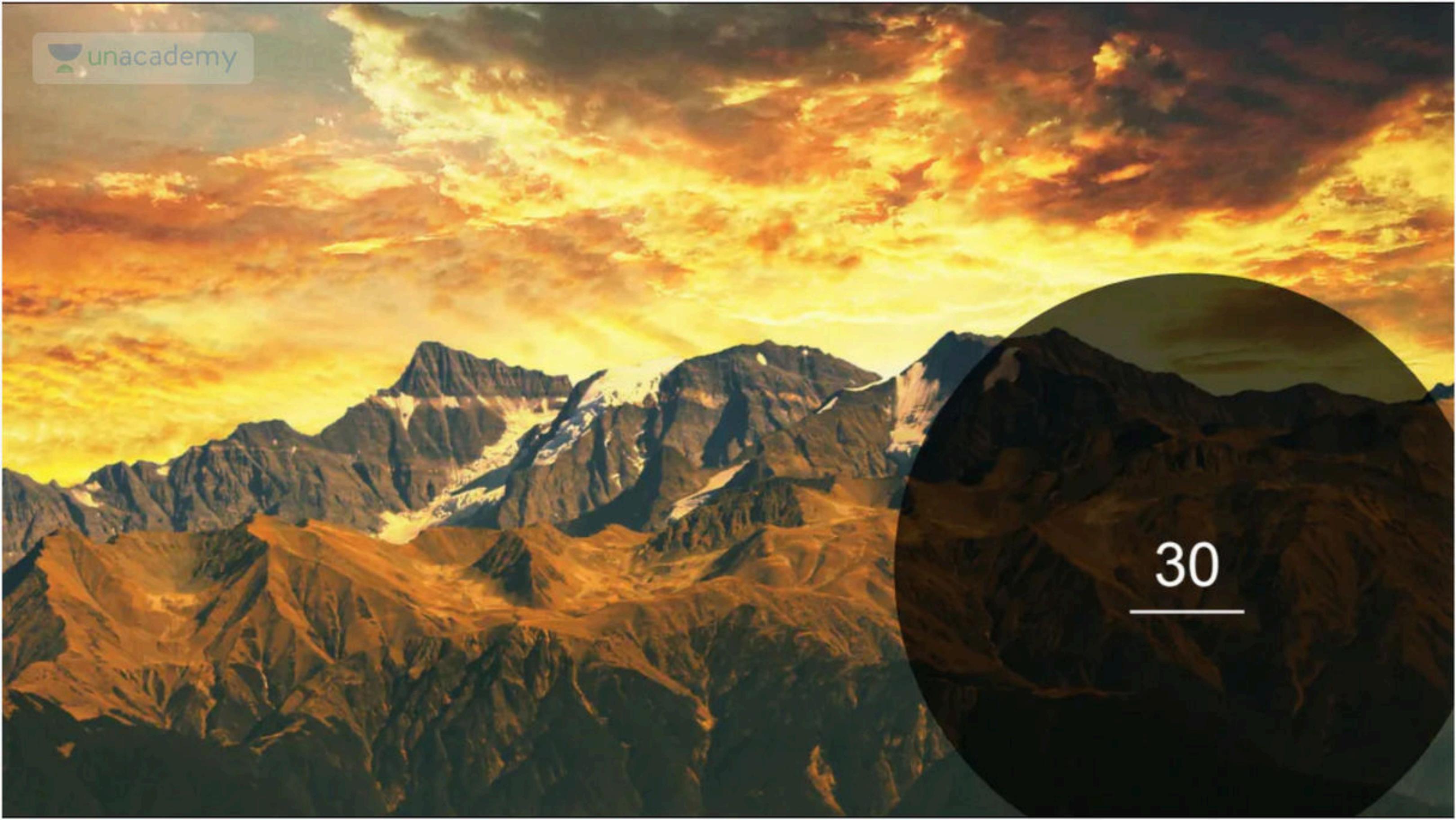
29



The number of people diagnosed with dengue fever (contracted from the bite of a mosquito) in north India is twice the number diagnosed last year. Municipal authorities have concluded that measures to control the mosquito population have failed in this region.

Which one of the following statements, if true, does not contradict this conclusion?

- (A) A high proportion of the affected population has returned from neighboring countries where dengue is prevalent
- (B) More cases of dengue are now reported because of an increase in the Municipal Office's administrative efficiency
- (C) Many more cases of dengue are being diagnosed this year since the introduction of a new and effective diagnostic test
- (D) The number of people with malarial fever (also contracted from mosquito bites) has increased this year



30



A poll of students appearing for masters in engineering indicated that 60% of the students believed that mechanical engineering is a profession unsuitable for women. A research study on women with masters or higher degrees in mechanical engineering found that 99% of such women were successful in their professions.

Which of the following can be logically inferred from the above paragraph?

- (A) Many students have misconceptions regarding various engineering disciplines.
- (B) Men with advanced degrees in mechanical engineering believe women are well suited to be mechanical engineers.
- (C) Mechanical engineering is a profession well suited for women with masters or higher degrees in mechanical engineering.
- (D) The number of women pursuing higher degrees in mechanical engineering is small.

[GATE 2016 : IISc Bangalore (EE Set - 2)]

31

Q1 What is the main obstacle likely to face the Allies in their attempt to capture Berlin?

- A) Anti-Germanic forces like the SS
- B) German forces holding the city
- C) German forces holding the city
- D) Strategic depth of supply lines

Q2 What is the main message found in the diary of a German pilot, David Maury?

- A) Anti-Germanic forces like the SS
- B) German forces holding the city
- C) German forces holding the city
- D) Strategic depth of supply lines

Q3 During World War II, which country was the primary target of the British bombing campaign?

- A) Germany
- B) France
- C) Italy
- D) Spain

Q4 In 1945, what was found by US troops in a German town?

- A) A German pilot's diary
- B) A German soldier's diary
- C) A German general's diary
- D) A German politician's diary



Humpty Dumpty sits on a wall every day while having lunch. The wall sometimes breaks. A person sitting on the wall falls if the wall breaks.

Which one of the statement below is logically valid and can be inferred from the above sentences?

- (A) Humpty Dumpty always falls while having lunch
- (B) Humpty Dumpty does not fall sometimes while having lunch
- (C) Humpty Dumpty never falls during dinner
- (D) When Humpty Dumpty does not sit on the wall, the wall does not break

[GATE 2015 : IIT Kanpur (EC Set - 1)]



32



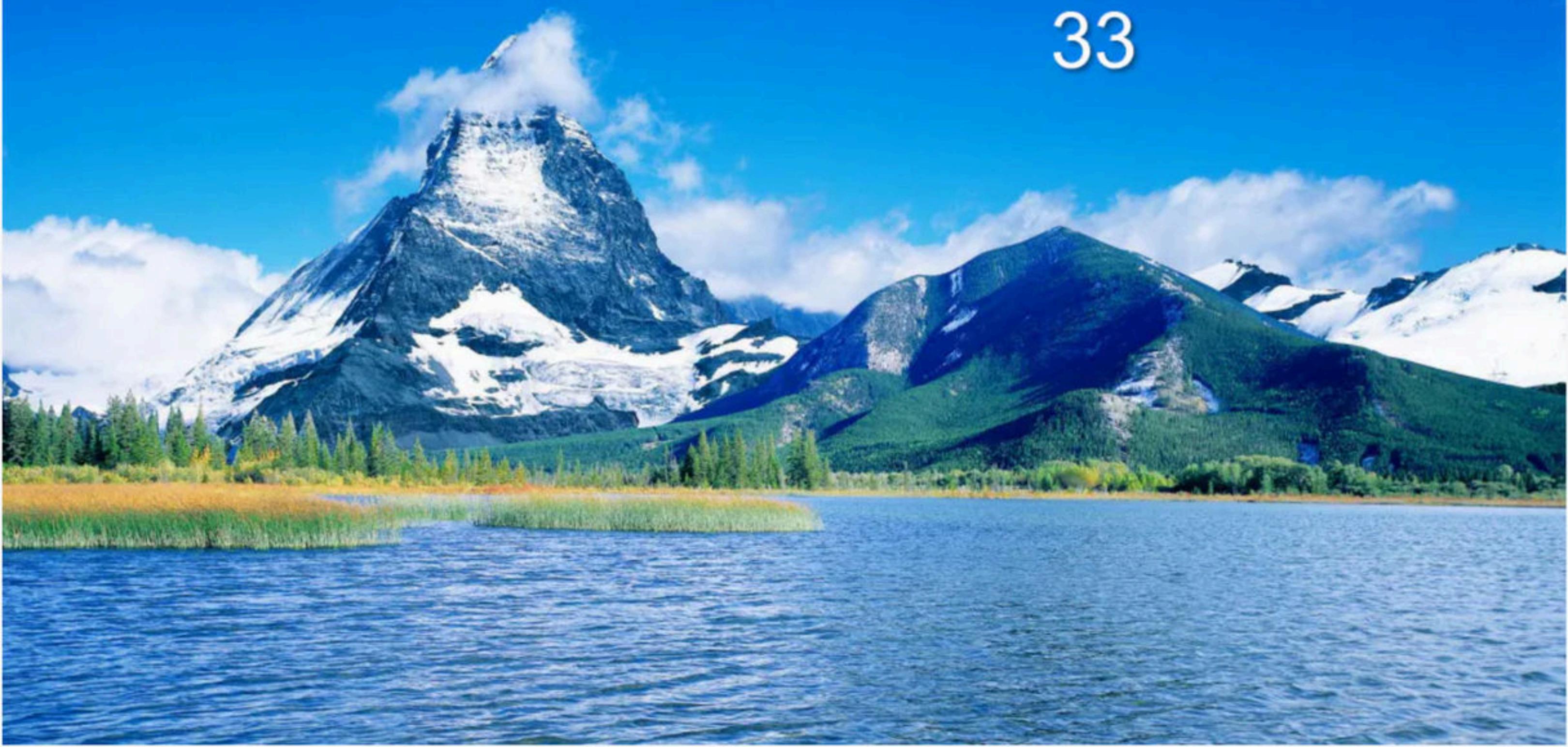
“If you are looking for a history of India, or for an account of the rise and fall of the British Raj, or for the reason of the cleaving of the subcontinent into two mutually antagonistic parts and the effects this mutilation will have in the respective sections, and ultimately on Asia, you will not find it in these pages for though I have spent a lifetime in the country, I lived too near the seat of events, and was too intimately associated

Which of the following statement best reflects the author’s opinion?

- (A) An intimate association does not allow for the necessary perspective.
- (B) Matters are recorded with an impartial perspective.
- (C) An intimate association offers an impartial perspective.
- (D) Actors are typically associated with the impartial recording of matters.

[GATE 2017 : IIT Roorkee (EC Set – 2)]

33





“The hold of the nationalist imagination on our colonial past is such that anything inadequately or improperly nationalist is just not history”.

Which of the following statements best reflects the author’s opinion?

- (A) Nationalist are highly imaginative.
- (B) History is viewed through the filter of nationalism.
- (C) Our colonial past never happened.
- (D) Nationalism has to be adequately and properly imagined.

[GATE 2017 : IIT Roorkee (EE, CS Set – 1)]

34





Today we consider, Ashoka as a great ruler because of the copious evidence he left behind in the form of stone carved edicts. Historians tend to correlate greatness of a king at his time with the availability of evidence today.

Which of the following can be logically inferred from the above sentences?

- (A) Emperors who do not leave significant sculpted evidence are completely forgotten.
- (B) Ashoka produced stone-carved edicts to ensure that later historians will respect him.
- (C) Statues of kings are a reminder of their greatness.
- (D) A king's greatness, as we know him today, is interpreted by historians.

[GATE 2016 : IISc Bangalore (CE Set - 2)]

35





Most experts feel that in spite of possessing all the technical skills required to be a batsman of the highest order, he is unlikely to be so due to lack of requisite temperament. He was guilty of throwing away his wicket several times after working hard to lay a strong foundation. His critics pointed out that until he addressed this problem success at the highest level will continue to elude him.

Which of the statement (s) below is/are logically valid and can be inferred from the above passage?

- (i) He was already a successful batsman at the highest level
 - (ii) He has to improve his temperament in order to become a great batsman
 - (iii) He failed to make many of his good starts count
 - (iv) Improving his technical skills will guarantee success
-
- (A) (iii) and (iv)
 - (B) (ii) and (iii)
 - (C) (i), (ii) and (iii)
 - (D) (ii) only

[GATE 2015 : IIT Kanpur (CE Set - 1, CSE Set - 3)]

36





By the beginning of the 20th century, several hypotheses were being proposed, suggesting a paradigm shift in our understanding of the universe. However, the clinching evidence was provided by experimental measurements of the position of a star which was directly behind our sun.

Which of the following inference(s) may be drawn from the above passage?

- (i) Our understanding of the universe changes based on the positions of stars
- (ii) Paradigm shifts usually occur at the beginning of centuries
- (iii) Stars are important objects in the universe
- (iv) Experimental evidence was important in confirming this paradigm shift

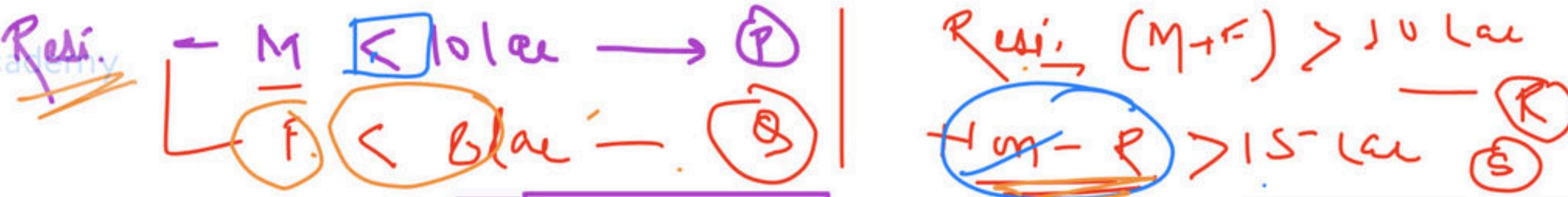
(A) (i), (ii) and (iv)
(C) (i) and (iv)

(B) (iii) only
(D) (iv) only

[GATE 2014 : IIT Kharagpur (CSE Set - 3, EE Set - 3)]

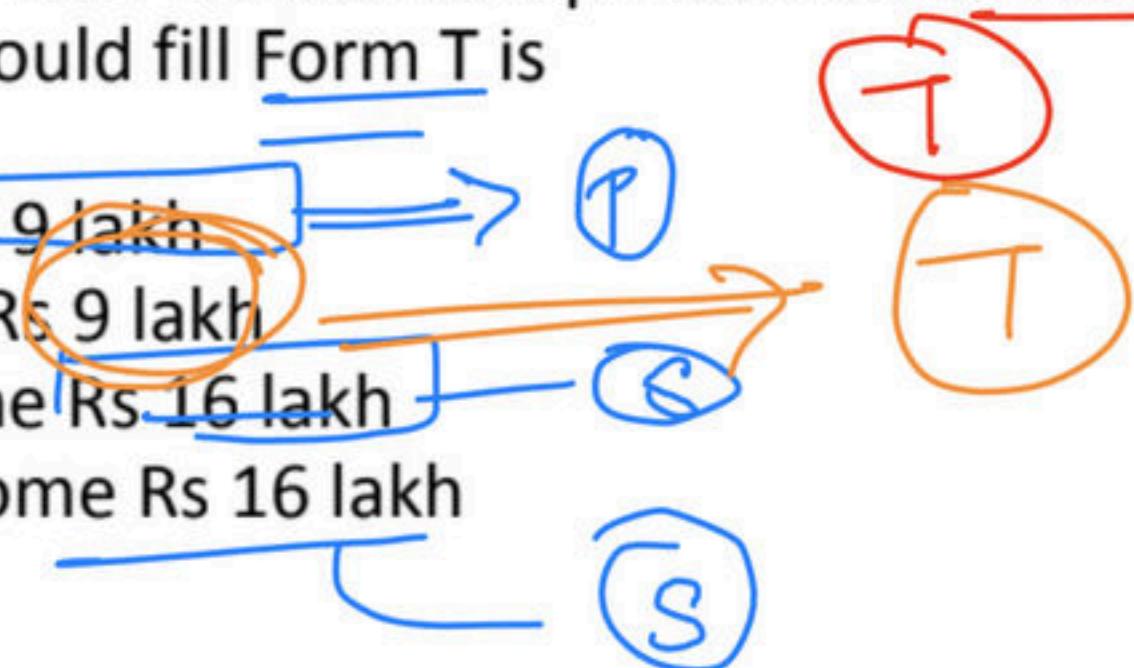
37

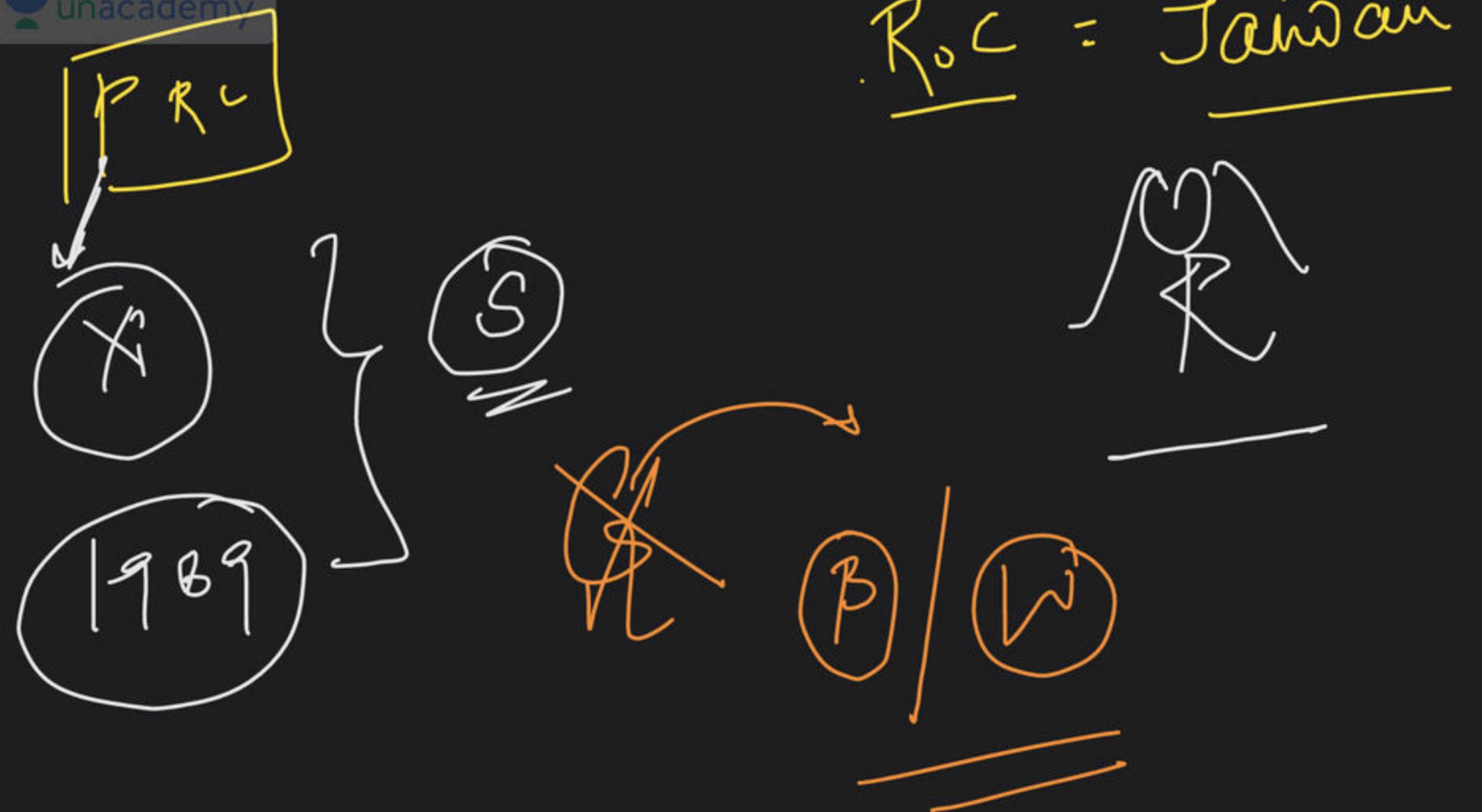




For submitting tax returns, all resident males with annual income below Rs 10 lakh should fill up Form P and all resident females with income below Rs 8 lakh should fill up Form S. All people with incomes above Rs 10 lakh should fill up Form R, except non residents with income above Rs 15 lakhs, who should fill up Form S. All others should fill Form T. An example of a person who should fill Form T is

- (A) A resident male with annual income Rs 9 lakh
- (B) A resident female with annual income Rs 9 lakh
- (C) A non-resident male with annual income Rs 16 lakh
- (D) A non-resident female with annual income Rs 16 lakh





38



A smart city integrates all modes of transport, uses clean energy and promotes sustainable use of resources. It also uses technology to ensure safety and security of the city, something which critics argue, will lead to a surveillance state.

Which of the following can be logically inferred from the above paragraph?

- (i) All smart cities encourage the formation of surveillance states.
- (ii) Surveillance is an integral part of a smart city.
- (iii) Sustainability and surveillance go hand in hand in a smart city.
- (iv) There is a perception that smart cities promote surveillance.

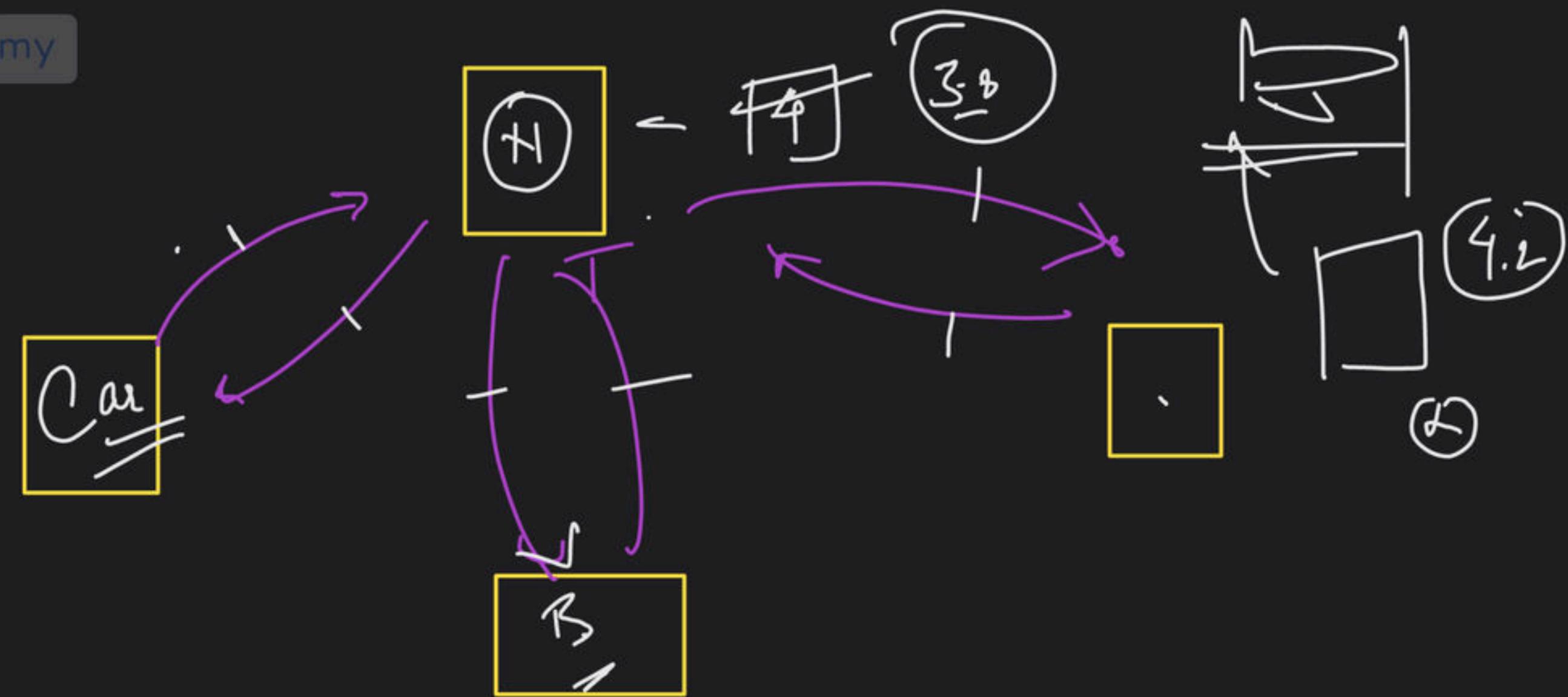
(A) (i) and (iv) only

(C) (iv) only

(B) (ii) and (iii) only

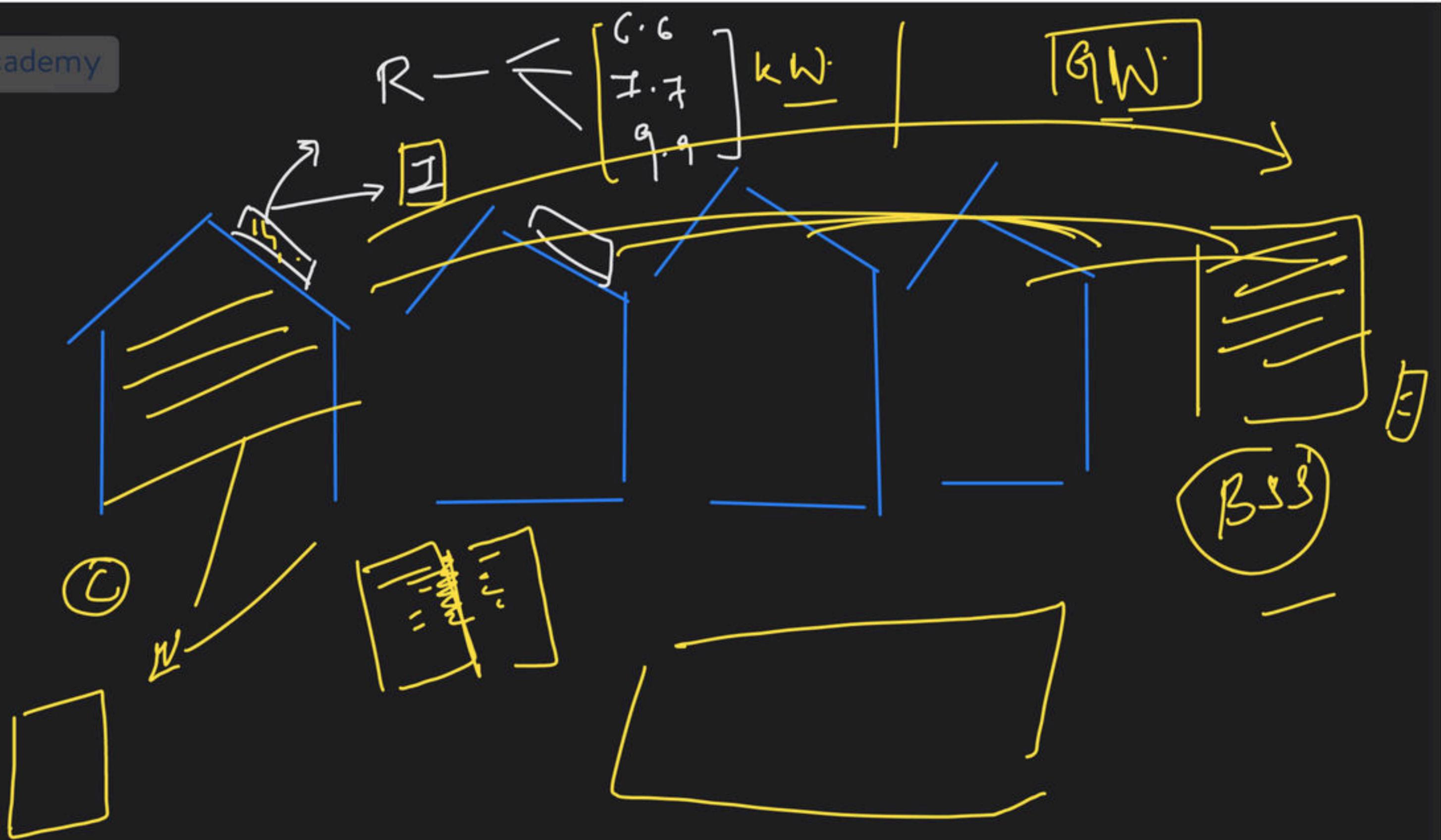
(D) (i) only

[GATE 2016 : IISc Bangalore (ME Set - 2)]



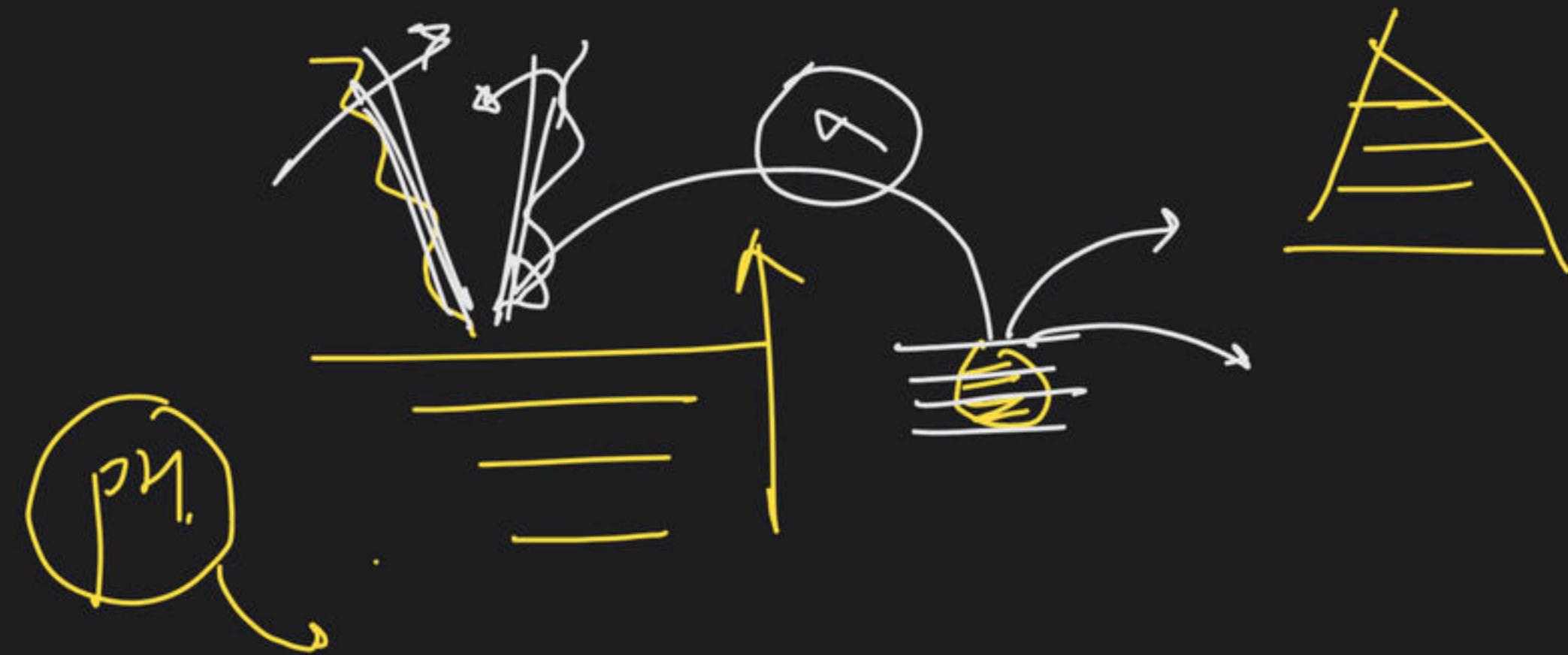
140





Paris $\xleftarrow{X^{\circ}C}$ α_{10} $\xrightarrow{3^{\circ}C}$

α_{05D}





IIT, Bombay GATE 2013 - EC



01



Which sentence of the below is grammatically most appropriate?

- Two and two add four.
- Two and two become four.
- Two and two are four.
- Two and two make four.



02



Statement: You can always give me a ring whenever you need.

Which one of the following is the best inference from the above statement?

- Because I have a nice caller tune.
- Because I have a better telephone facility.
- Because a friend in need is a friend indeed.
- Because you need not pay towards the telephone bills when you give me a ring.

03



In the summer of 2012, in New Delhi, the mean temperature of Monday to Wednesday was 41°C and of Tuesday to Thursday was 43°C . If the temperature on Thursday was 15% higher than that of Monday, then the temperature in $^{\circ}\text{C}$ on Thursday was

- 40
- 43
- 46
- 49

04



Complete the sentence:

Dare _____ mistakes.

- commit
- to commit
- committed
- committing



05



They were requested not to quarrel with others.

Which one of the following options is the closest in meaning to the word **quarrel**?

- make out
- call out
- dig out
- fall out

06

A car travels 8 km in the first quarter of an hour, 6 km in the second quarter and 16 km in the third quarter. The average speed of the car in km per hour over the entire journey is

- 30
- 36
- 40
- 24



07



Find the sum to n terms of the series $10 + 84 + 734 + \dots$

- $\frac{9(9^n+1)}{10} + 1$
- $\frac{9(9^n-1)}{8} + 1$
- $\frac{9(9^n-1)}{8} + n$
- $\frac{9(9^n-1)}{8} + n^2$



08



Statement: There were different streams of freedom movements in colonial India carried out by the moderates, liberals, radicals, socialists, and so on.

Which one of the following is the best inference from the above statement?

- The emergence of nationalism in colonial India led to our Independence.
- Nationalism in India emerged in the context of colonialism.
- Nationalism in India is homogeneous.
- Nationalism in India is heterogeneous.

09



The set of values of p for which the roots of the equation $3x^2 + 2x + p(p-1) = 0$ are of opposite sign is

- (- ∞ , 0)
- (0, ∞)
- (1, ∞)
- (0, 1)

10



Chance that a leap year selected at random will contain 53 Sundays is

$3/7$

$7/2$

$7/3$

$2/7$



GATE 2014 Official Paper Shift 1 - EC

01





Choose the most appropriate phrase from the options given below to complete the following sentence.

The aircraft _____ take off as soon as its flight plan was filed.

- is allowed to
- will be allowed to
- was allowed to
- has been allowed to

02



Read the statements:

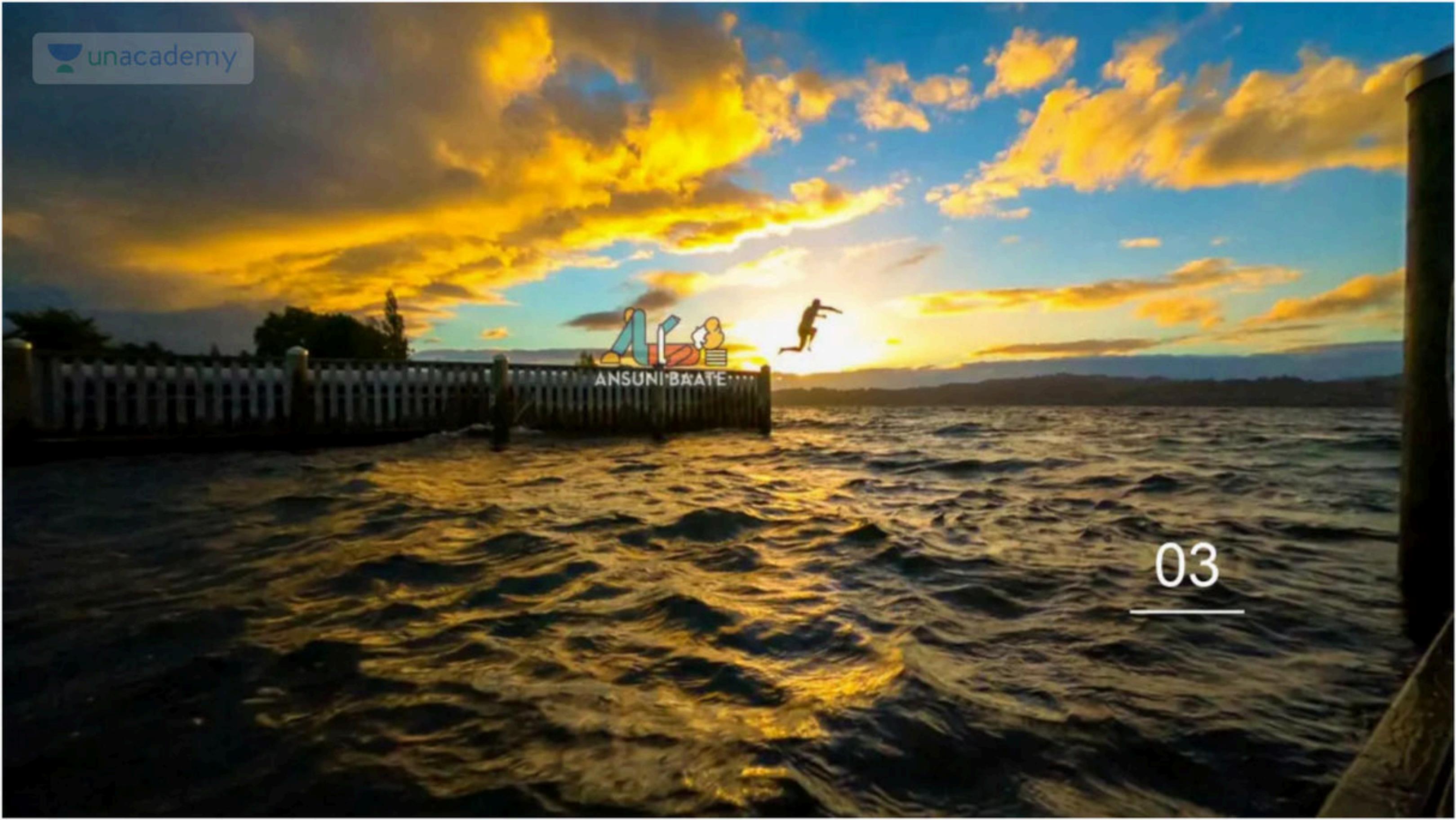
All women are entrepreneurs.

Some women are doctors

Which of the following conclusions can be logically inferred from the above statements?

- All women are doctors
- All doctors are entrepreneurs
- All entrepreneurs are women
- Some entrepreneurs are doctors

IIT, Kharagpur GATE 2014





Choose the most appropriate word from the options given below to complete the following sentence.

Many ancient cultures attributed disease to supernatural causes. However, modern science has largely helped _____ such notions.

- impel
- dispel
- propel
- repel

IIT, Kharagpur GATE 2014



04



The statistics of runs scored in a series by four batsmen are provided in the following table. Who is the most consistent batsman of these four?

Batsman	Average	Standard deviation
K	31.2	5.21
L	46.0	6.35
M	54.4	6.22
N	17.9	5.90

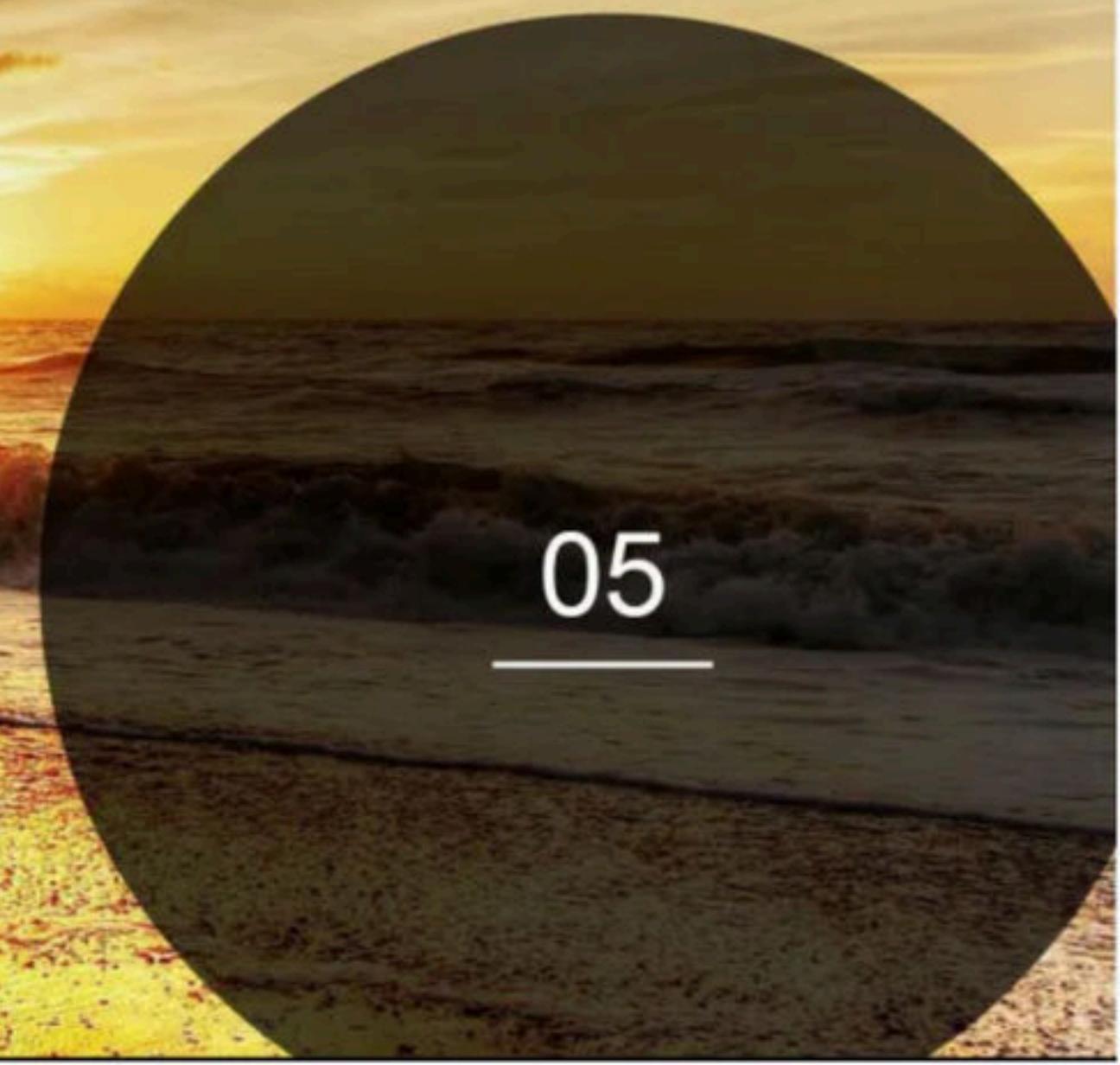
K

L

M

N

IIT, Kharagpur GATE 2014



05



What is the next number in the series'

12 35 81 173 357 _____

IIT, Kharagpur GATE 2014

06





Find the odd one from the following group:

W,E,K,O I,Q,W,A F,N,T,X N,V,B,D

- W,E,K,O
- I,Q,W,A
- F,N,T,X
- N,V,B,D

IIT, Kharagpur GATE 2014

07

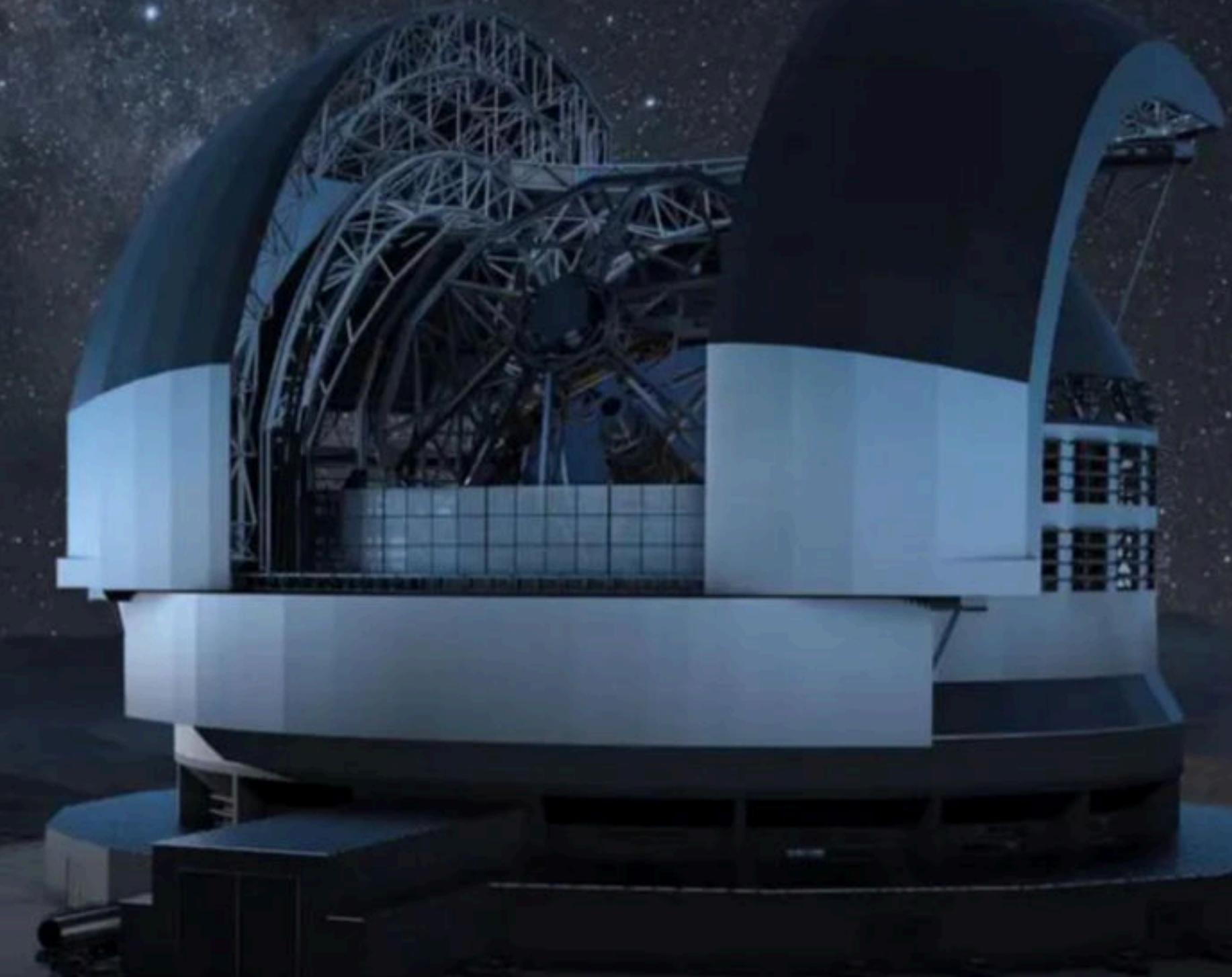




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- a non-resident male with annual income Rs 16 lakh
- a non-resident female with annual income Rs 16 lakh

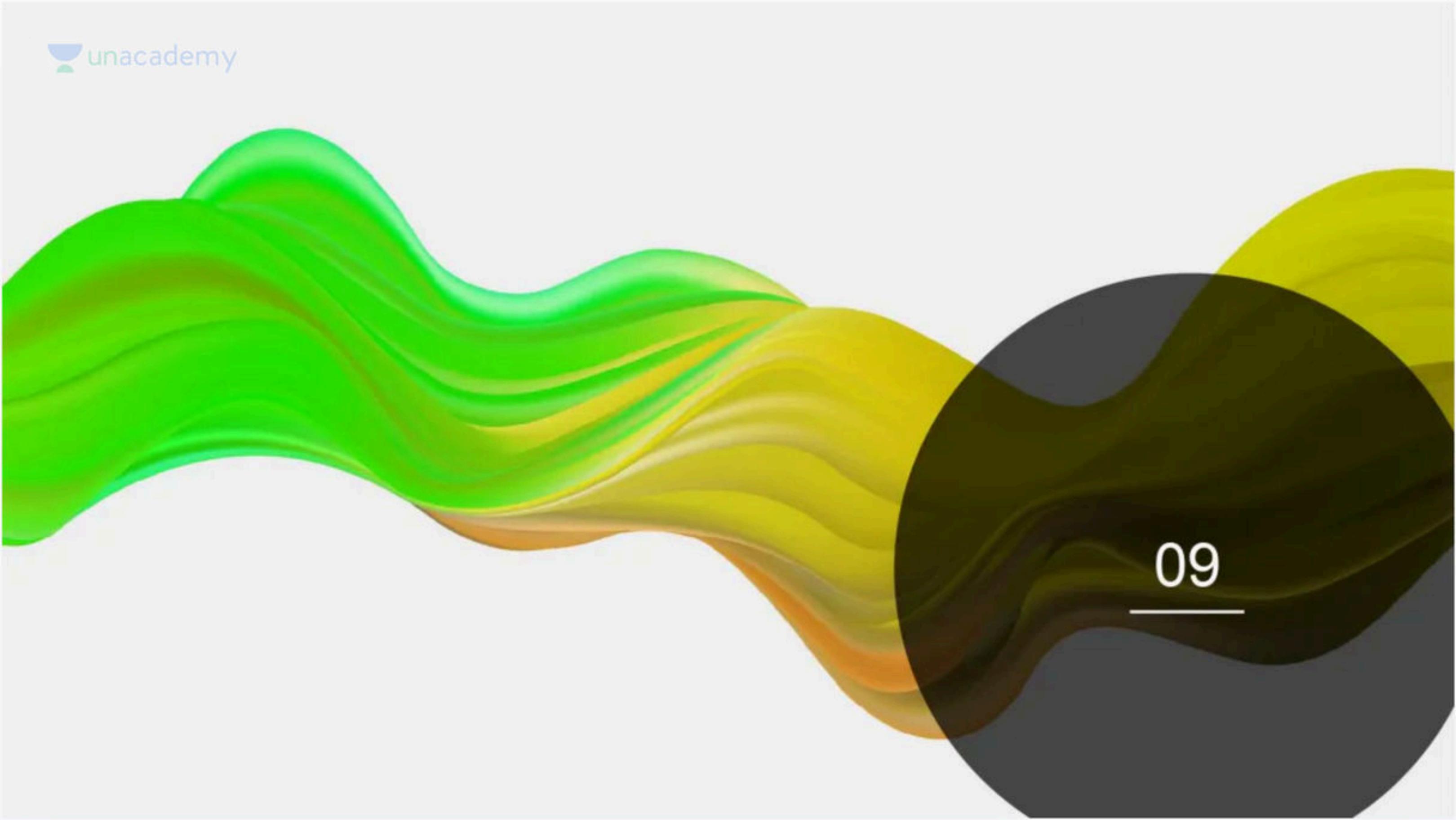
08





A train that is 280 metres long, travelling at a uniform speed, crosses a platform in 60 seconds and passes a man standing on the platform in 20 seconds. What is the length of the platform in metres?

IIT, Kharagpur GATE 2014



09

10



You are given three coins: one has heads on both faces, the second has tails on both faces, and the third has a head on one face and a tail on the other. You choose a coin at random and toss it, and it comes up heads. The probability that the other face is tails is

- 1/4
- 1/3
- 1/2
- 2/3

IIT, Kharagpur GATE 2014



GATE 2014 Official Paper Shift 2 - EC

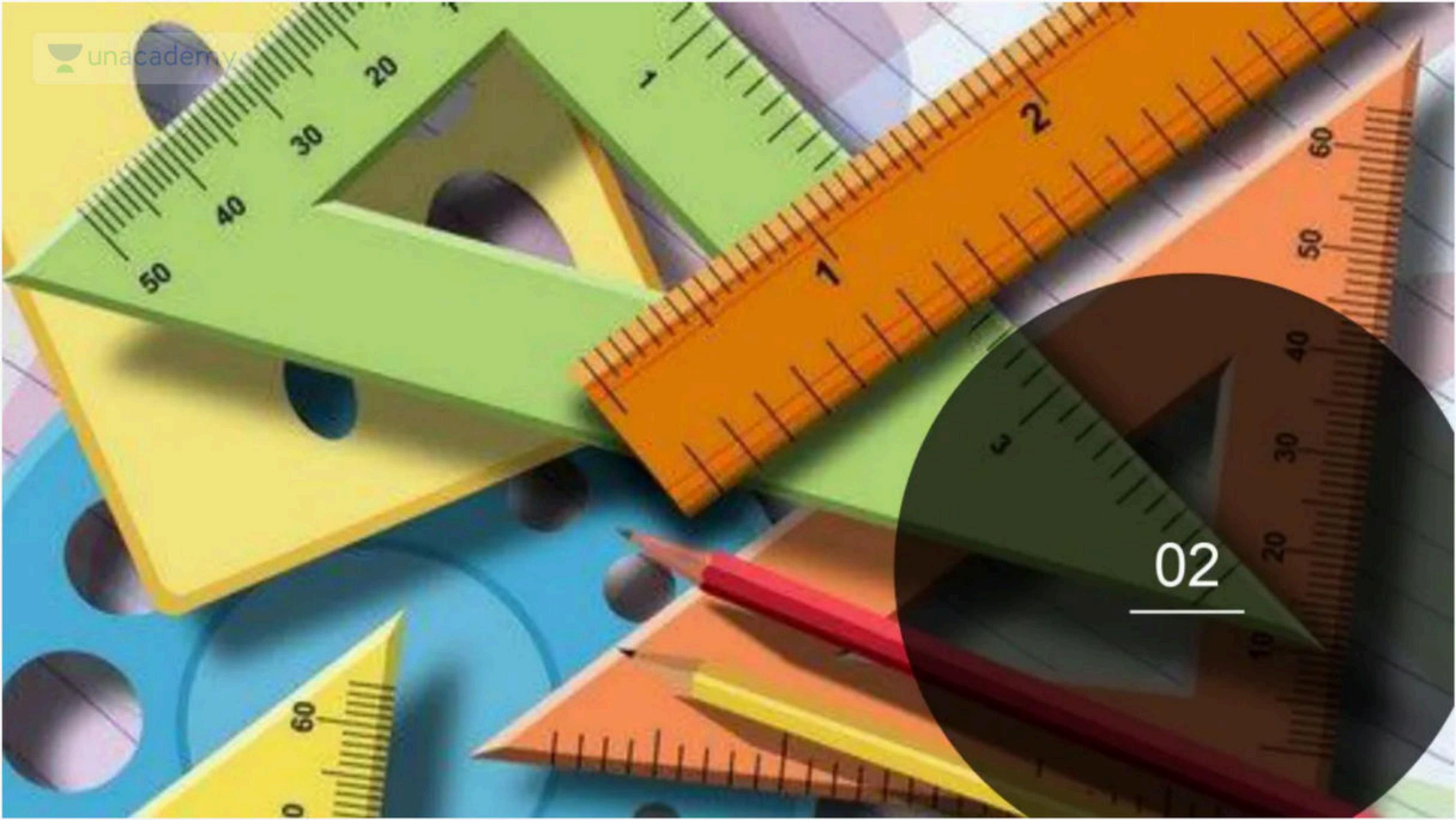
01



Communication and interpersonal skills are _____ important in their own ways.

- each
- both
- all
- either

IIT, Kharagpur GATE 2014





Which of the options given below best completes the following sentence?

She will feel much better if she _____.

- will get some rest
- gets some rest
- will be getting some rest
- is getting some rest

IIT, Kharagpur GATE 2014

03





Choose the most appropriate pair of words from the options given below to complete the following sentence.

She could not _____ the thought of _____ the election to her bitter rival.

- bear, loosing
- bare, loosing
- bear, losing
- bare, losing

IIT, Kharagpur GATE 2014

04



A regular die has six sides with numbers 1 to 6 marked on its sides. If a very large number of throws show the following frequencies of occurrence:

$1 \rightarrow 0.167$; $2 \rightarrow 0.167$; $3 \rightarrow 0.152$; $4 \rightarrow 0.166$; $5 \rightarrow 0.168$; $6 \rightarrow 0.180$. We call this die

- irregular
- biased
- Gaussian
- insufficient

IIT, Kharagpur GATE 2014

05





Fill in the missing number in the series.

2 3 6 15 _____ 157.5 630

IIT, Kharagpur GATE 2014

06



Find the odd one in the following group

Q,W,Z,B B,H,K,M W,C,G,J M,S,V,X

- Q,W,Z,B
- B,H,K,M
- W,C,G,J
- M,S,V,X

IIT, Kharagpur GATE 2014

07



Lights of four colors (red, blue, green, yellow) are hung on a ladder. On every step of the ladder there are two lights. If one of the lights is red, the other light on that step will always be blue. If one of the lights on a step is green, the other light on that step will always be yellow. Which of the following statements is not necessarily correct?

- The number of red lights is equal to the number of blue lights
- The number of green lights is equal to the number of yellow lights
- The sum of the red and green lights is equal to the sum of the yellow and blue lights
- The sum of the red and blue lights is equal to the sum of the green and yellow lights

IIT, Kharagpur GATE 2014

08



The sum of eight consecutive odd numbers is 656. The average of four consecutive even numbers is 87. What is the sum of the smallest odd number and second-largest even number?

IIT, Kharagpur GATE 2014



09

10





It takes 30 minutes to empty a half-full tank by draining it at a constant rate. It is decided to simultaneously pump water into the half-full tank while draining it. What is the rate at which water has to be pumped in so that it gets fully filled in 10 minutes?

- 4 times the draining rate
- 3 times the draining rate
- 2.5 times the draining rate
- 2 times the draining rate

IIT, Kharagpur GATE 2014



GATE 2014 SET 03 - EC





"India is a country of rich heritage and cultural diversity."

Which one of the following facts best supports the claim made in the above sentence?

- India is a union of 28 states and 7 union territories.
- India has a population of over 1.1 billion.
- India is home to 22 official languages and thousands of dialects.
- The Indian cricket team draws players from over ten states.

02





Fill in the blank with the most appropriate word given in options.

The value of one U.S. dollar is 65 Indian Rupees today, compared to 60 last year. The Indian Rupee has _____.

- depressed
- depreciated
- appreciated
- stabilized

IIT, Kharagpur GATE 2014

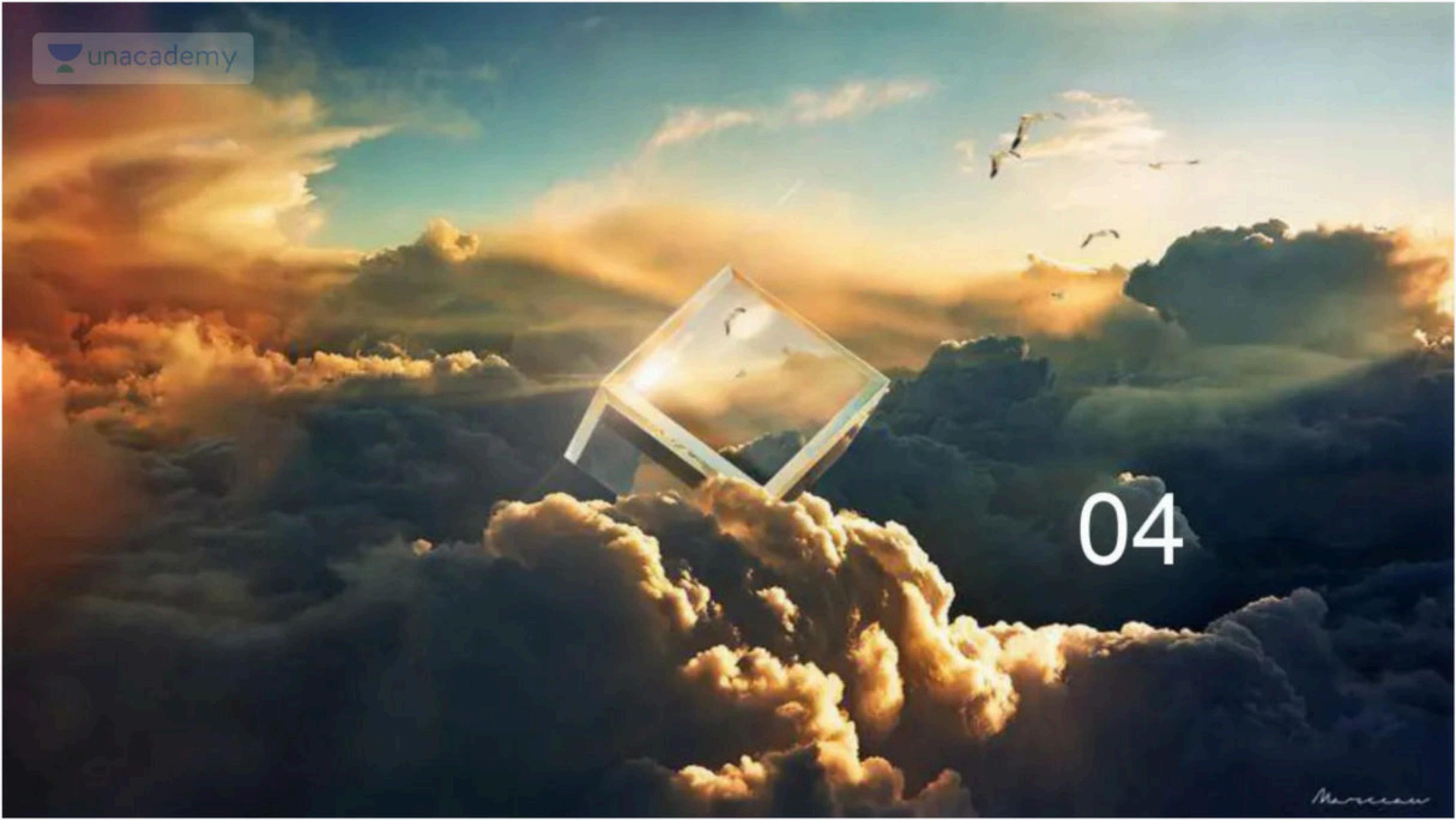
A landscape painting depicting a serene sunset over a body of water. A large, luminous sun is positioned in the upper center, partially obscured by a cluster of pink and white clouds. The sky transitions from a deep blue at the top to warm orange and yellow hues near the horizon. Numerous small birds are scattered across the sky. In the foreground, a small wooden boat with two figures is visible on the left, and another boat with figures is on the right. Distant, hazy mountains are visible on the horizon.

03

'Advice' is _____.

- a verb
- a noun
- an adjective
- both a verb and a noun

IIT, Kharagpur GATE 2014

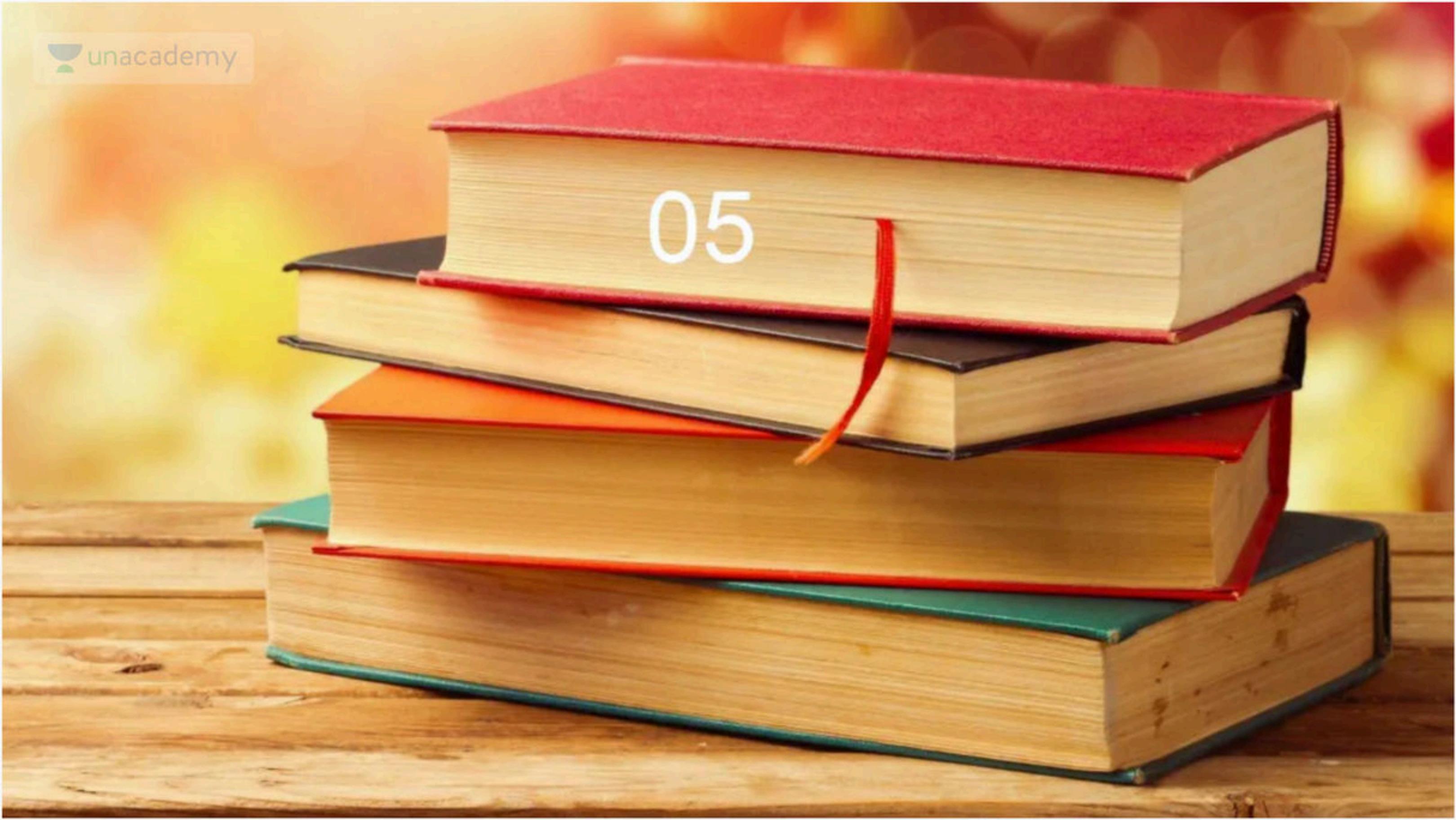


04



The next term in the series 81, 54, 36, 24, ... is _____.

IIT, Kharagpur GATE 2014



05



In which of the following options will the expression $P < M$ be definitely true?

- $M < R > P > S$
- $M > S < P < F$
- $Q < M < F = P$
- $P = A < R < M$

IIT, Kharagpur GATE 2014

06





Find the next term in the sequence: 7G, 11K, 13M, _____

- 15Q
- 17Q
- 15P
- 17P

IIT, Kharagpur GATE 2014

07

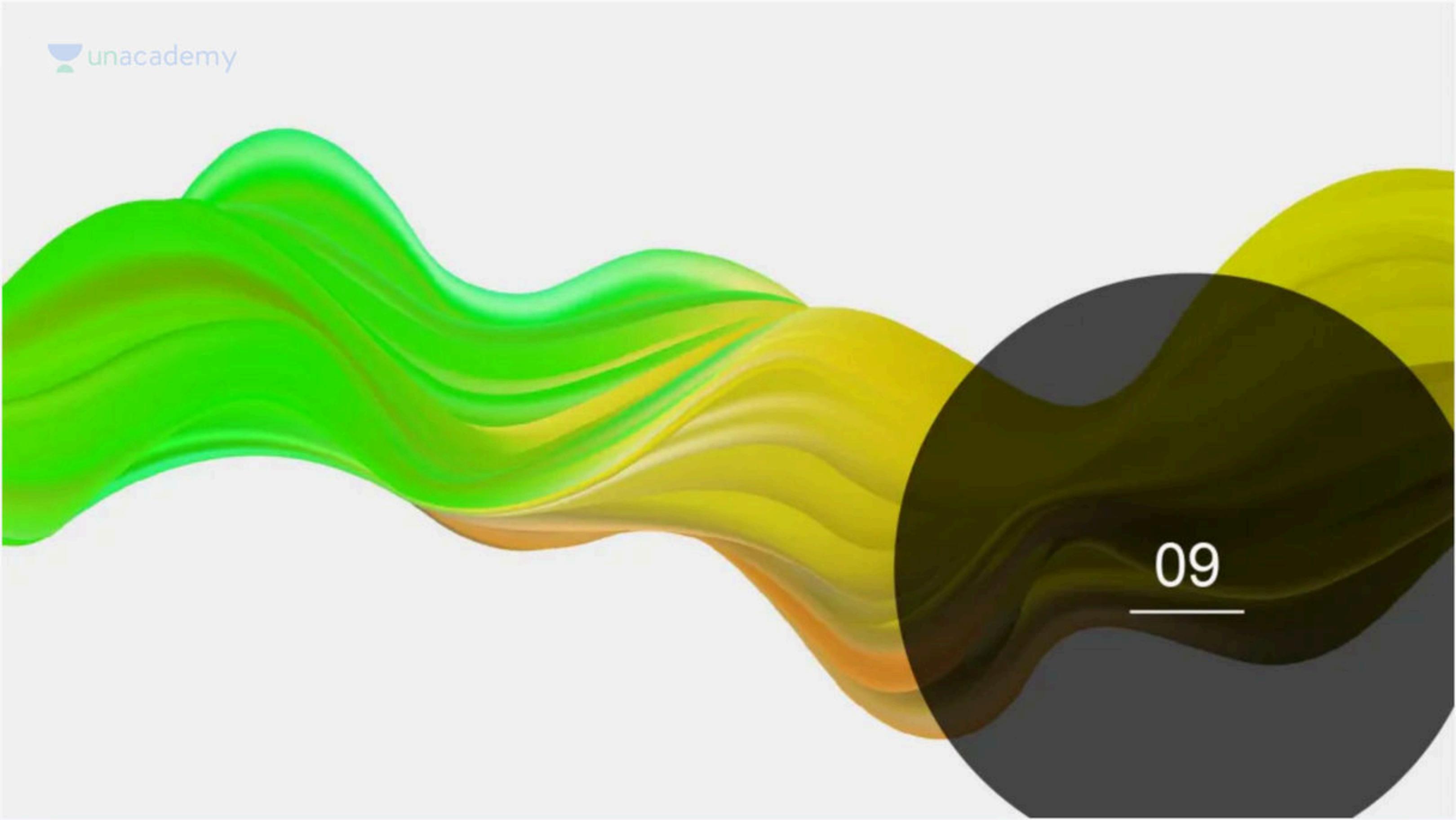






A man can row at 8 km per hour in still water. If it takes him thrice as long to row upstream, as to row downstream, then find the stream velocity in km per hour.

IIT, Kharagpur GATE 2014



09





A batch of one hundred bulbs is inspected by testing four randomly chosen bulbs. The batch is rejected if even one of the bulbs is defective. A batch typically has five defective bulbs. The probability that the current batch is accepted is _____.

IIT, Kharagpur GATE 2014



GATE 2014 SET 04 - EC

01

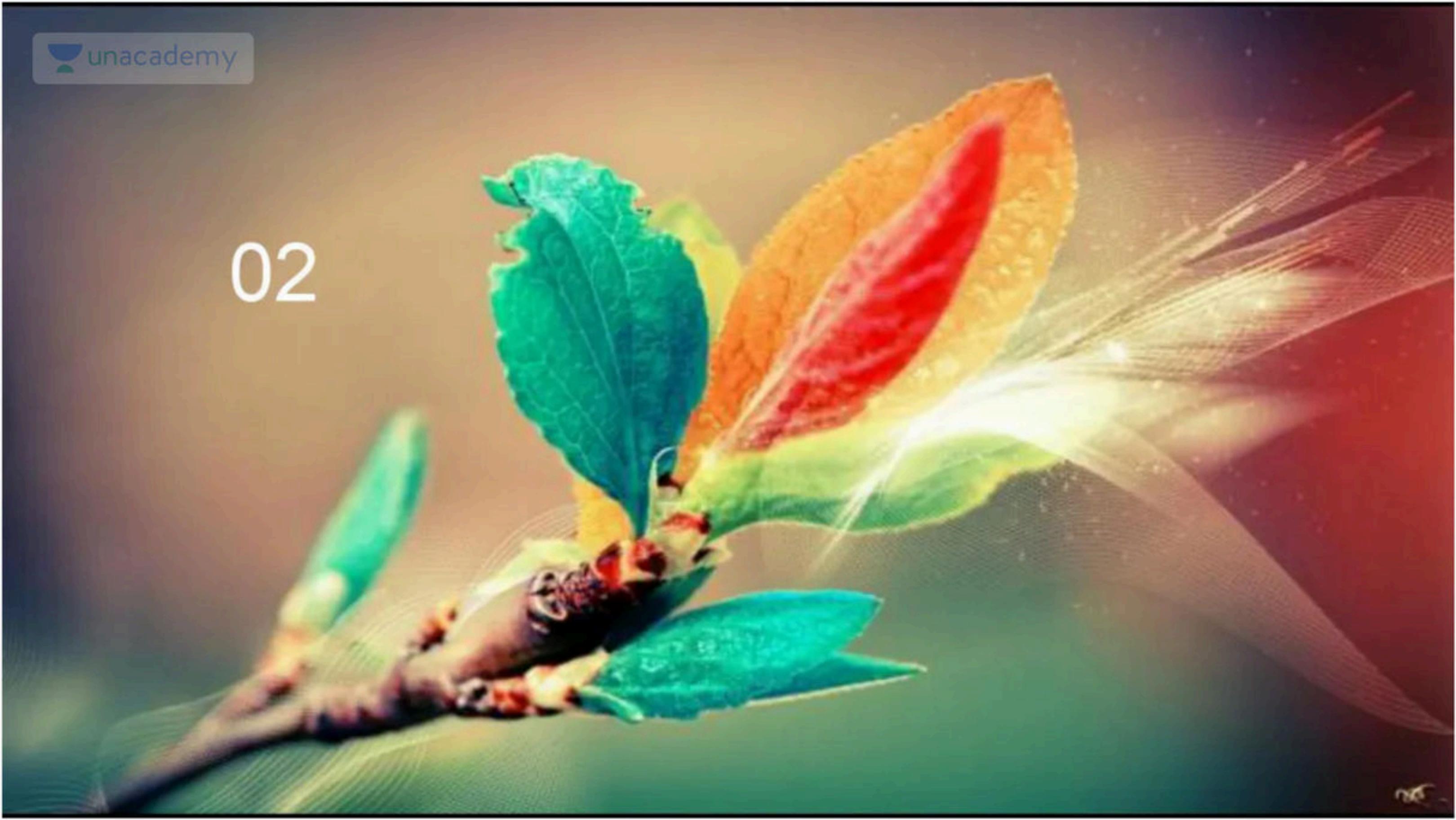


In a democracy, everybody has the freedom to disagree with the government.

- dissent
- descent
- decent
- decadent

IIT, Kharagpur GATE 2014

02





Select the most appropriate phrase given in the option to complete the meaning of the sentence.

After the discussion, Tom said to me, 'Please revert!' He expects me to _____.

- retract
- get back to him
- move in reverse
- retreat

IIT, Kharagpur GATE 2014



03



While receiving the award, the scientist said, "I feel vindicated".

Which of the following is closest in meaning to the word 'vindicated'?

- punished
- substantiated
- appreciated
- chastened

IIT, Kharagpur GATE 2014



04



Let $f(x, y) = x^n y^m = P$. If x is doubled and y is halved, the new value of f is

- $2^{n-m}P$
- $2^{b-n}P$
- $2(n-m)P$
- $2(m-n)P$

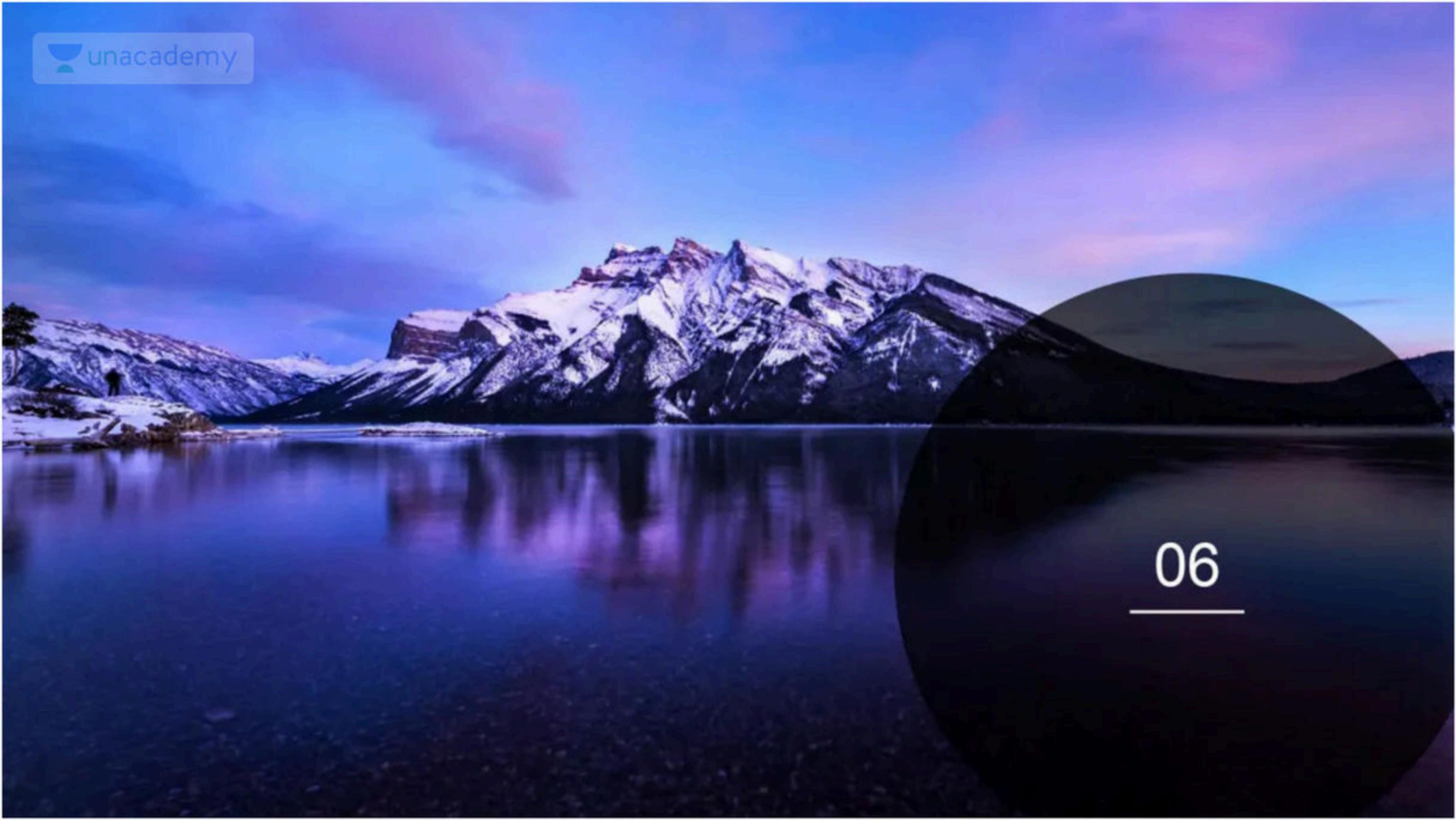
IIT, Kharagpur GATE 2014



05

In a sequence of 12 consecutive odd numbers, the sum of the first 5 numbers is 425. What is the sum of the last 5 numbers in the sequence?

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06



Find the next term in the sequence: 13M, 17Q, 19S, __

21W

21V

23W

23V

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If 'KCLFTSB' stands for 'best of luck' and 'SHSWDG' stands for 'good wishes', which of the following indicates 'ace the exam'?

- MCHTX
- MXHTC
- XMHCT
- XMHTC

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08



Industrial consumption of power doubled from 2000-2001 to 2010-2011. Find the annual rate of increase in percent assuming it to be uniform over the years.

- 5.6
- 7.2
- 10.0
- 12.2

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09

10



A five digit number is formed using the digits 1,3,5,7 and 9 without repeating any of them. What is the sum of all such possible five digit numbers?

- 6666660
- 6666600
- 6666666
- 6666606

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GATE 2015 Official Paper Shift 1 - EC

01



Choose the most appropriate word from the option given below to complete the following sentence.

The principal presented the chief guest with a _____, as token of appreciation.

- momento
- memento
- momentum
- moment



02



Choose the appropriate word / phrase, out of the four options given below, to complete the following sentence:

Frogs _____

croak

roar

hiss

patter

03



Choose the word most similar in meaning to the given word:

Educe:

- Exert
- Educate
- Extract
- Extend

04



Operators ■, Δ and → are defined by : $a \blacksquare b = \frac{a-b}{a+b}$; $a \Delta b = \frac{a+b}{a-b}$; $a \rightarrow b = ab$. find the value of $(66 \blacksquare 6) \rightarrow (66 \Delta 6)$

-2

-1

1

2

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05





If $\log_x \left(\frac{5}{7}\right) = -\frac{1}{3}$, then the value of x is

- 343 / 125
- 125 / 343
- 25 / 49
- 49 / 25

06



The following question presents a sentence, part of which is underlined. Beneath the sentence you find four ways of phrasing the underlined part. Following the requirements of the standard written English select the answer that produces the most effective sentence.

Tuberculosis, together with its effects, ranks one of the leading causes of death in India.

- ranks as one of the leading causes of death
- rank as one of the leading causes of death
- has the rank of one of the leading causes of death



07



Read the following paragraph and choose the correct statement.

Climate change has reduced human security and threatened human wellbeing. An ignored reality of human progress is that human security largely depends upon environmental security. But on the contrary, human progress seems contradictory to environmental security. To keep up both at the required level is a challenge to be addressed by one and all. One of the ways to curb the climate change may be suitable scientific innovations, while the other may be the Gandhian perspective on Small scale progress with focus on sustainability.

- Human progress and security are positively associated with environmental security.
- Human progress is contradictory to environmental security
- Human security is contradictory to environmental security.
- Human progress depends upon environmental security.



08

09



A cube of side 3 units is formed using a set of smaller cubes of side 1 unit. Find the proportion of the number of faces of the smaller cubes visible to those which are NOT visible.

- 1 : 4
- 1 : 3
- 1 : 2
- 2 : 3

10

Humpty dumpty sits on a wall every day while having lunch. The wall sometimes breaks. A person sitting on the wall falls if the wall breaks.

Which one of the statements below is logically valid and can be inferred from the above sentences?

- Humpty Dumpty always falls while having lunch.
- Humpty Dumpty does not fall sometimes while having lunch
- Humpty Dumpty never falls during dinner
- When Humpty Dumpty does not sit on the wall, the wall does not break



GATE 2015 Official Paper Shift 2 - EC

01





Choose the appropriate word / phrase, out of the four options given below, to complete the following sentence:

Dhoni, as well as the other team members of Indian team, _____ present on the occasion

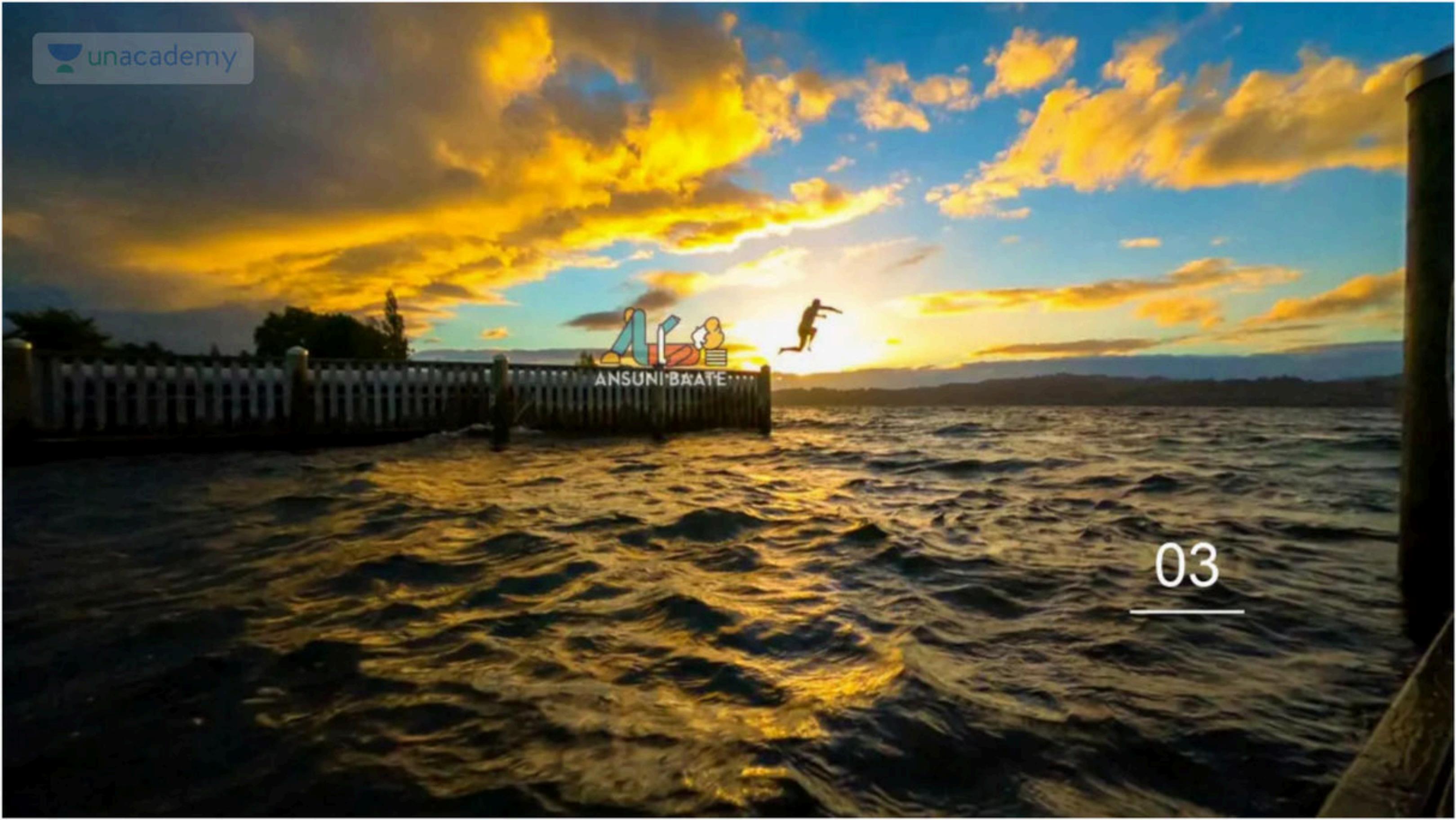
- were
- was
- has
- have

02



Choose the word most similar in meaning to the given word: Awkward

- Inept
- Graceful
- Suitable
- Dreadful

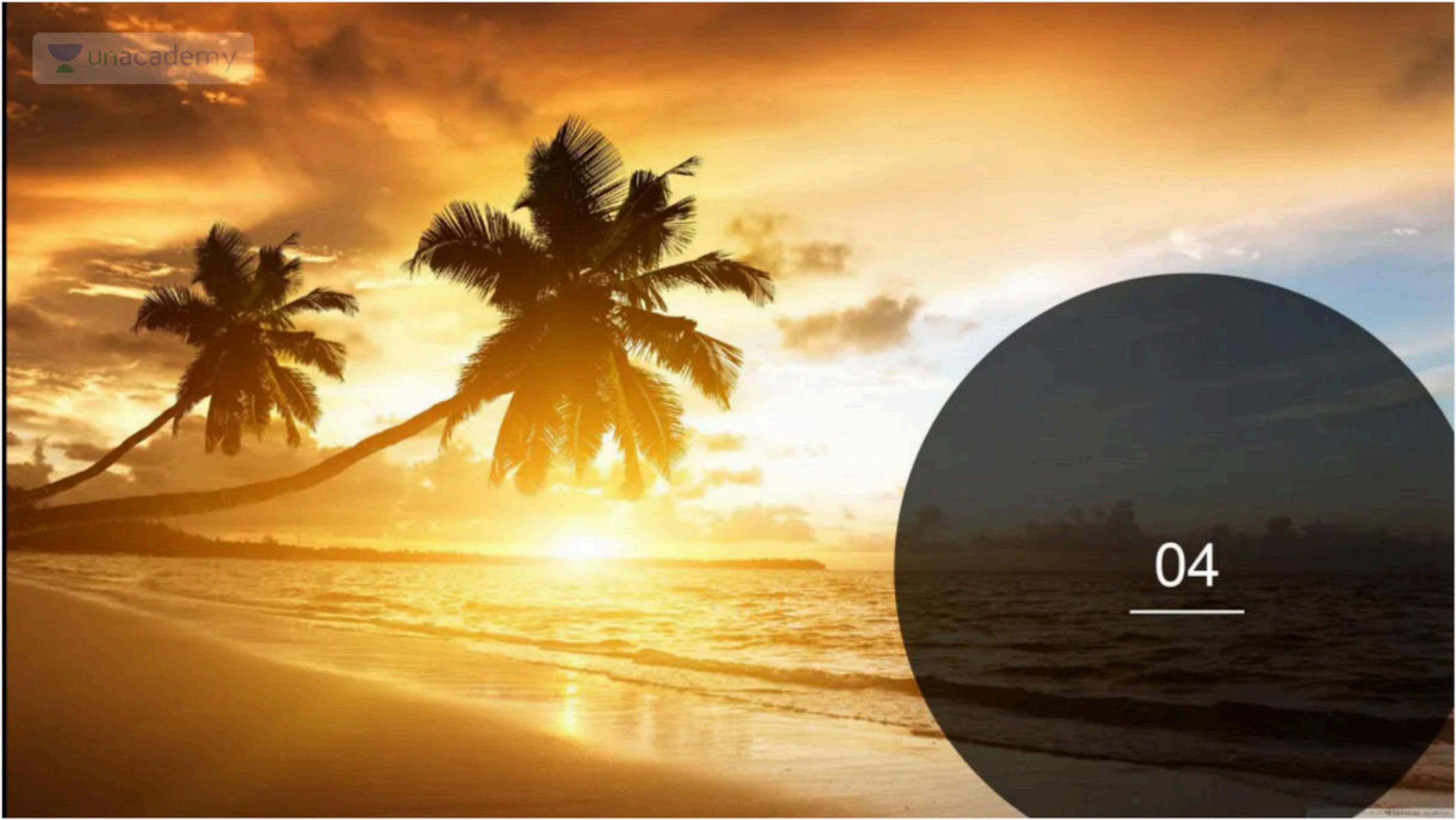


03



What is the adverb for the given word below? Misogynous

- Misogynousness
- Misogyny
- Misogynously
- Misogynous



04

An electric bus has onboard instruments that report the total electricity consumed since the start of the trip as well as the total distance covered. During a single day of operation, the bus travels on stretches M, N, O and P, in that order. the cumulative distances travelled and the corresponding electricity consumption are shown in the Table below:

Stretch	Cumulative distance(km)	Electricity used (kWh)
M	20	12
N	45	25
O	75	45
P	100	57

The stretch where the electricity consumption per km is minimum is

M

N

O

P



05



Ram and Ramesh appeared in an interview for two vacancies in the same department. The probability of Ram's selection is $1/6$ and that of Ramesh is $1/8$. What is the probability that only one of them will be selected?

- $47/48$
- $1/4$
- $13/48$
- $35/48$

06





In the following sentence, certain parts are marked in bold and marked P, Q and R. One of the parts may contain certain error or may not be acceptable is standard written communication. Select the part containing an error. Choose 4 as your answer if there is no error.

The student corrected **all the errors** (P) that the **instructor marked** (Q) on the **answer book**. (R)

- P
- Q
- R
- No error

07





Given below are two statements followed by two conclusions. Assuming these statements to be true, decide which one logically follows.

Statements:

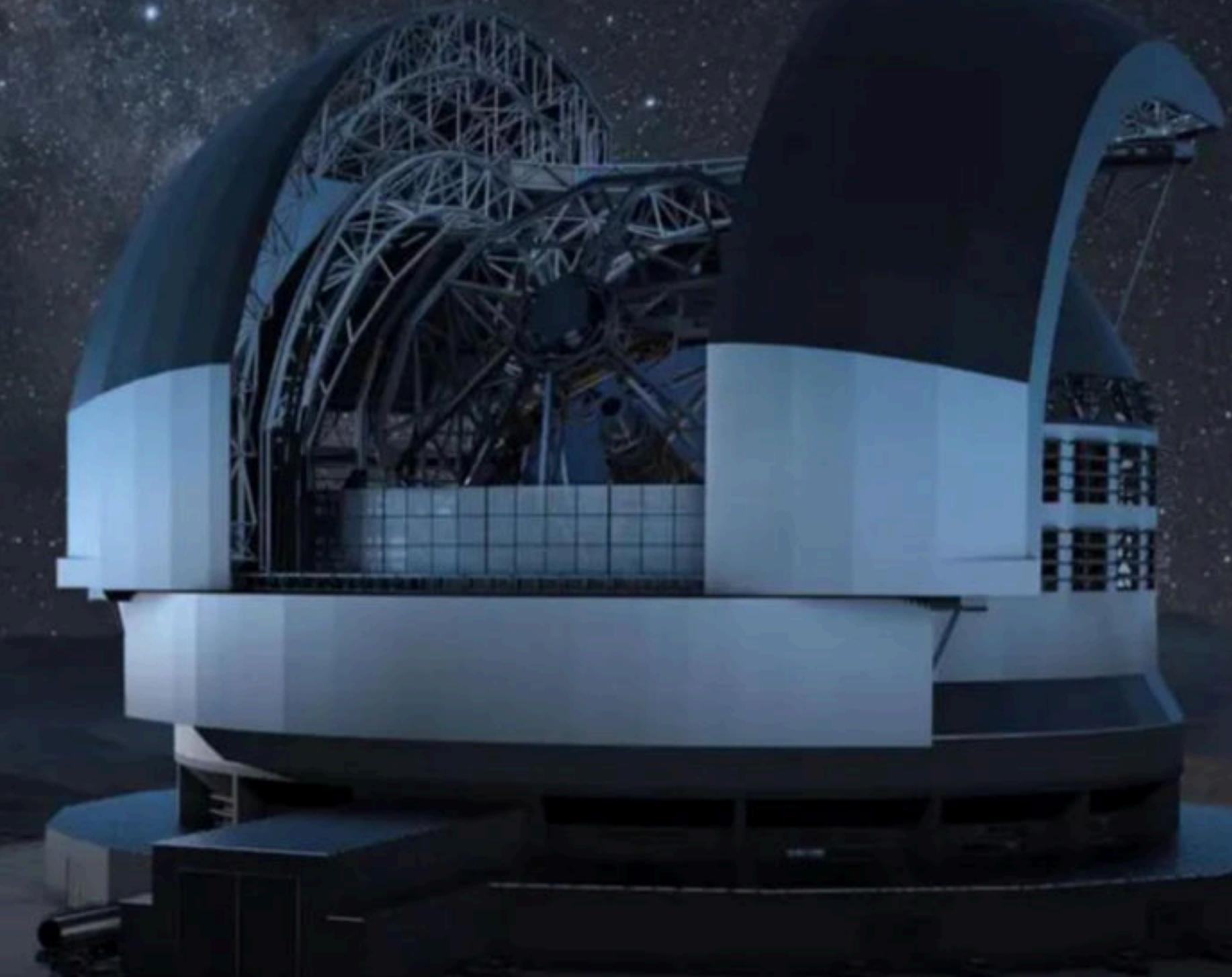
- I. All film stars are playback singers
- II. All film directors are film stars.

Conclusions:

- I. All film directors are playback singers
- II. Some film star are film directors

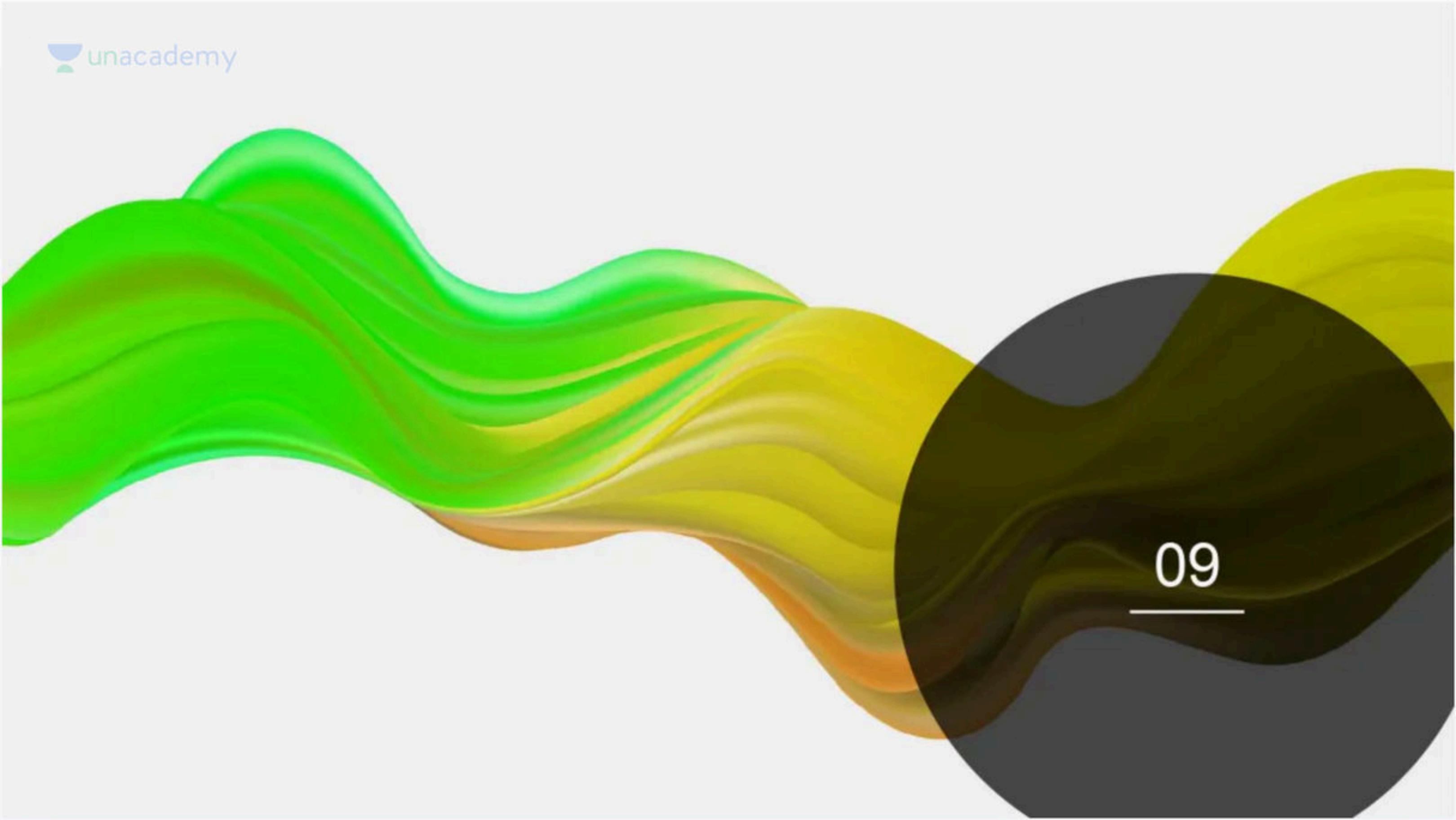
- Only conclusion I follows
- Only conclusion II follows
- Neither conclusions I nor II follows
- Both conclusion I and II follow

08



A tiger is 50 leaps of its own behind a deer. The tiger takes 5 leaps per minute to the deer's 4. If the tiger and the deer cover 8 metre and 5 metre per leap respectively, what distance in metres will the tiger have to run before it catches the deer?

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09

If $a^2 + b^2 + c^2 = 1$, then $ab + bc + ac$ lies in the interval

- $[1, \frac{2}{3}]$
- $[-\frac{1}{2}, 1]$
- $[-1, \frac{1}{2}]$
- $[2, -4]$

10



Lamenting the gradual sidelining of the arts in school curricula, a group of prominent artists wrote to the Chief Minister last year, asking him to allocate more funds to support arts education in schools. However, no such increase has been announced in this year's Budget. The artists expressed their deep anguish at their request not being approved, but many of them remain optimistic about funding in the future.

Which of the statement(s) below is/are logically valid and can be inferred from the above statements?

- (i) The artists expected funding for the arts to increase this year.
 - (ii) The Chief Minister was receptive to the idea of increasing funding for the arts.
 - (iii) The Chief Minister is a prominent artist.
 - (iv) Schools are giving less importance to arts education nowadays,
-
- (iii) and (iv)
 - (i) and (iv)
 - (i), (ii) and (iv)
 - (i) and (iii)



GATE 2015 Official Paper Shift 3 - EC





Choose the most appropriate word from the options given below to complete the following sentence? If the athlete had wanted to come first in the race, he _____ several hours every day.

- Should practice
- Should have practiced
- Practiced
- Should be practicing

02





Choose the most suitable one-word substitute for the following expression:

Connotation of a road or way

- Pertinacious
- Viaticum
- Clandestine
- Ravenous

A landscape painting depicting a serene sunset over a body of water. A large, luminous sun is positioned behind a cluster of pink and white clouds, casting a warm glow across the sky. Numerous small birds are scattered throughout the scene, some flying in the upper right and others near the horizon. In the foreground, a small wooden boat with two figures is visible on the left, and another boat with several people is on the right. Distant, hazy mountains are visible on the horizon.

03



Choose the correct verb to fill in the blank below:

Let us _____.

- Introvert
- alternate
- atheist
- altruist



04

Find the missing sequence in the letter series below:

A, CD, GHI, ?, UVWXYZ

- LMN
- MNO
- MNOP
- NOPQ



05

If $x > y > 1$, which of the following must be true?

- (i) $\ln x > \ln y$
 - (ii) $e^x > e^y$
 - (iii) $y^2 > x^2$
 - (iv) $\cos x > \cos y$
-
- (i) and (ii)
 - (i) and (iii)
 - (iii) and (iv)
 - (ii) and (iv)

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06





Ram and Shyam shared a secret and promised to each other that it would remain between them. Ram expressed himself in one of the following ways as given in the choices below. Identify the correct way as per standard English.

- It would remain between you and me.
- It would remain between I and you
- It would remain between you and I
- It would remain with me.

07



In the following question, the first and the last sentence of the passage are in order and numbered 1 and 6. The rest of the passage is split into 4 parts and numbered as 2,3,4, and 5. These 4 parts are not arranged in proper order. Read the sentences and arrange them in a logical sequence to make a passage and choose the correct sequence from the given options.

1. One Diwali, the family rises early in the morning.
2. The whole family, including the young and the old enjoy doing this,
3. Children let off fireworks later in the night with their friends.
4. At sunset, the lamps are lit and the family performs various rituals
5. Father, mother, and children visit relatives and exchange gifts and sweets.
6. Houses look so pretty with lighted lamps all around.

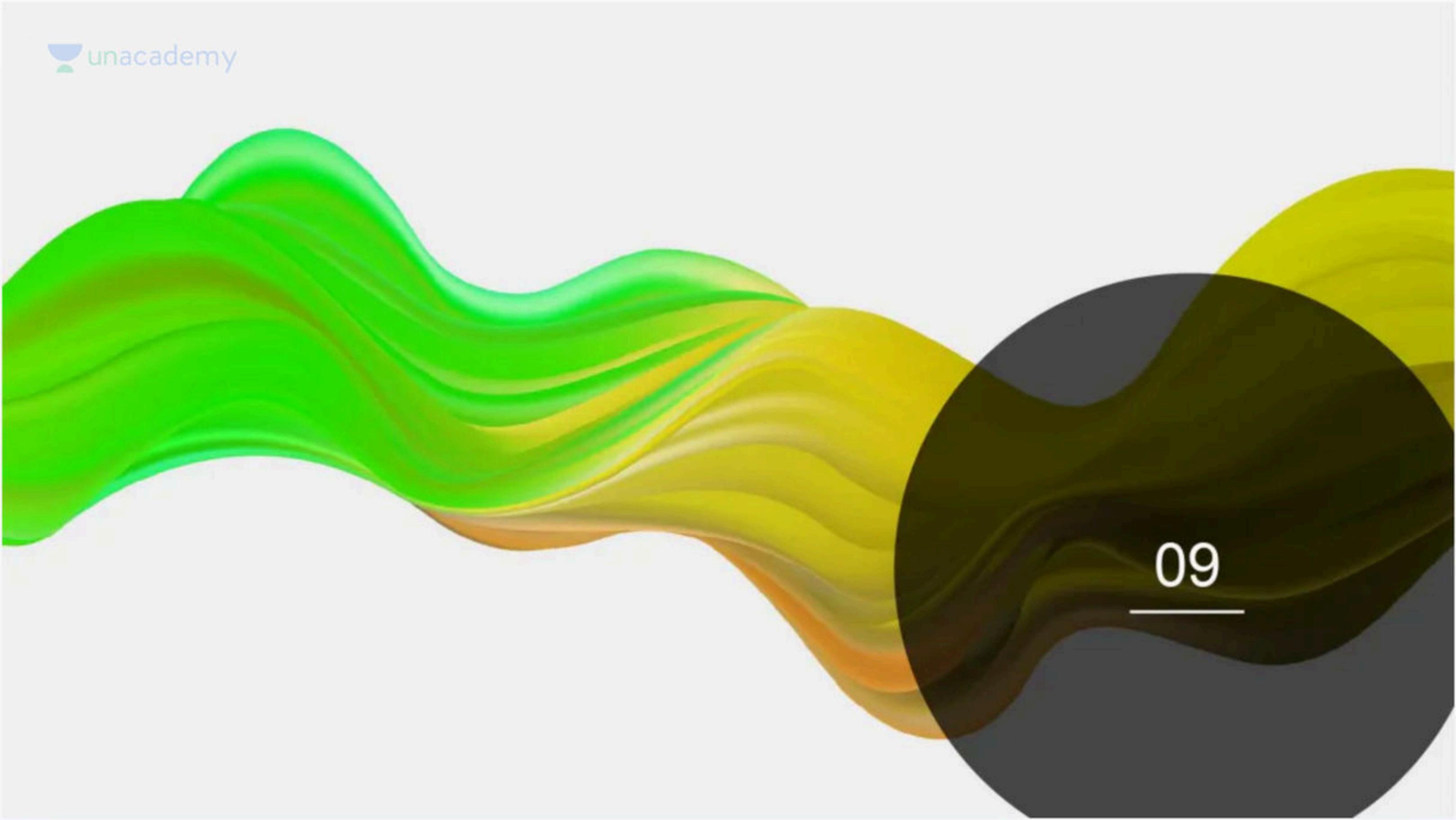
- 2, 5, 3, 4
- 5, 2, 4, 3
- 3, 5, 4, 2
- 4, 5, 2, 3





From a circular sheet of paper of radius 30cm, a sector of 10% area is removed. If the remaining part is used to make a conical surface, then the ratio of the radius and height of the cone is _____.

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09



$\log \tan 1^\circ + \log \tan 2^\circ + \dots + \log \tan 89^\circ$ is

- 1
- $\frac{1}{\sqrt{2}}$
- 0
- 1





Ms X will be in Bagdogra from 01/05/2014 to 20/05/2014 and from 22/05/2014 to 31/05/2014. On the morning of 21/05/2014, she will reach Kochi via Mumbai Which one of the statements below is logically valid and can be inferred from the above sentences?

- Ms. X will be in Kochi for one day, only in May
- Ms. X will be in Kochi for only one day in May
- Ms. X will be only in Kochi for one day in May
- Only Ms. X will be in Kochi for one day in May.



GATE 2016 Official Paper Shift 01 - EC

01





Which of the following is CORRECT with respect to grammar and usage? Mount Everest is _____.

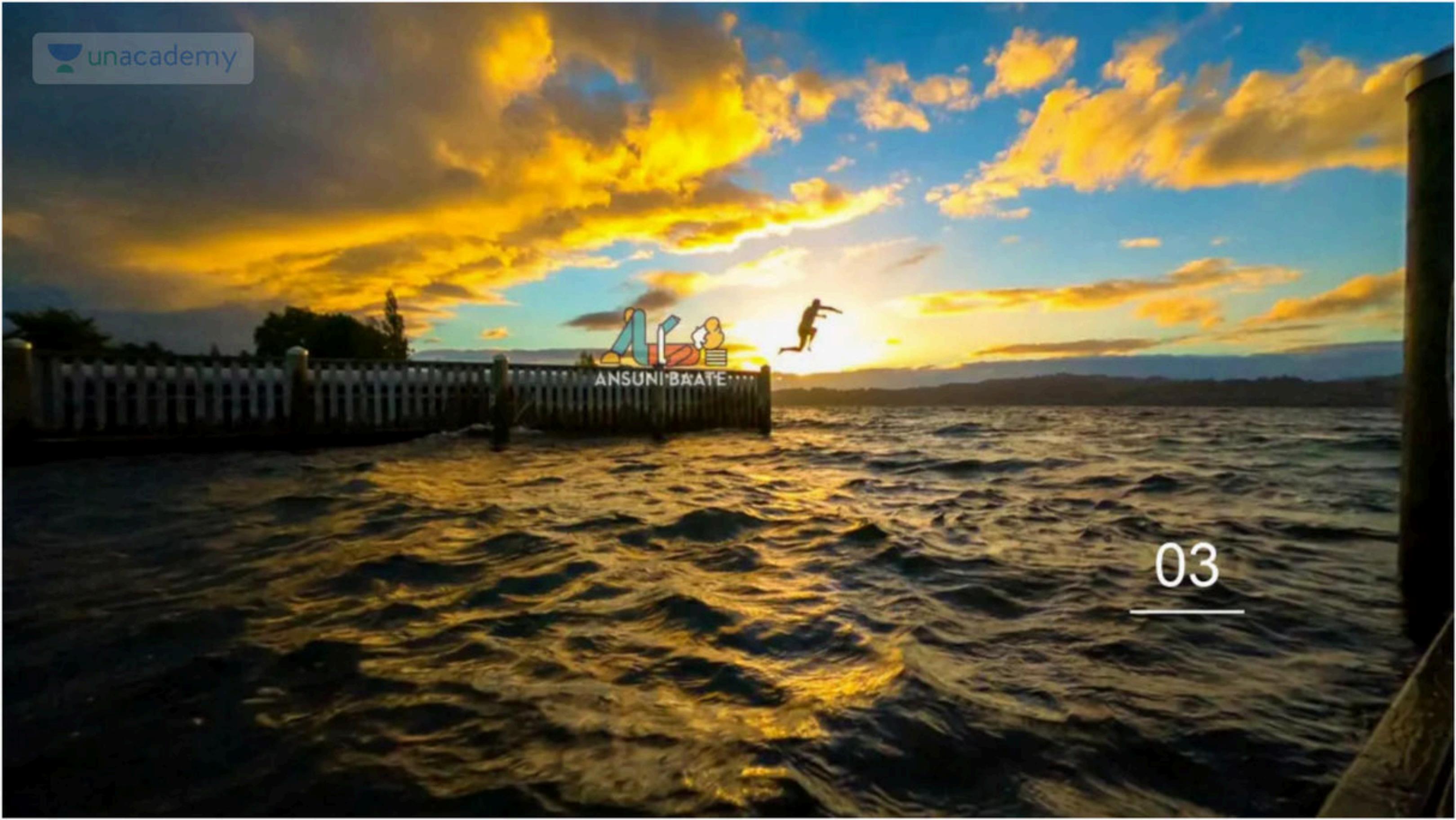
- the highest peak in the world
- highest peak in the world
- one of highest peak in the world
- one of the highest peak in the world

02



The policeman asked the victim of a theft, "What did you _____?"

- loose
- lose
- loss
- louse



03



Despite the new medicine's _____ in treating diabetes, it is not _____ widely.

- effectiveness --- prescribed
- availability --- used
- prescription --- available
- acceptance --- proscribed



04



In a huge pile of apples and oranges, both ripe and unripe mixed together, 15% are unripe fruits. Of the unripe fruits, 45% are apples. Of the ripe ones, 66% are oranges. If the pile contains a total of 5692000 fruits, how many of them are apples?

- 2029198
- 2467482
- 2789080
- 3577422



05



Michael lives 10 km away from where I live. Ahmed lives 5 km away and Susan lives 7 km away from where I live. Arun is farther away than Ahmed but closer than Susan from where I live. From the information provided here, what is one possible distance (in km) at which I live from Arun's place?

- 3.00
- 4.99
- 6.02
- 7.01

06





A person moving through a tuberculosis prone zone has a 50% probability of becoming infected. However, only 30% of infected people develop the disease. What percentage of people moving through a tuberculosis prone zone remains infected but does not show symptoms of disease?

- 15
- 33
- 35
- 37

07

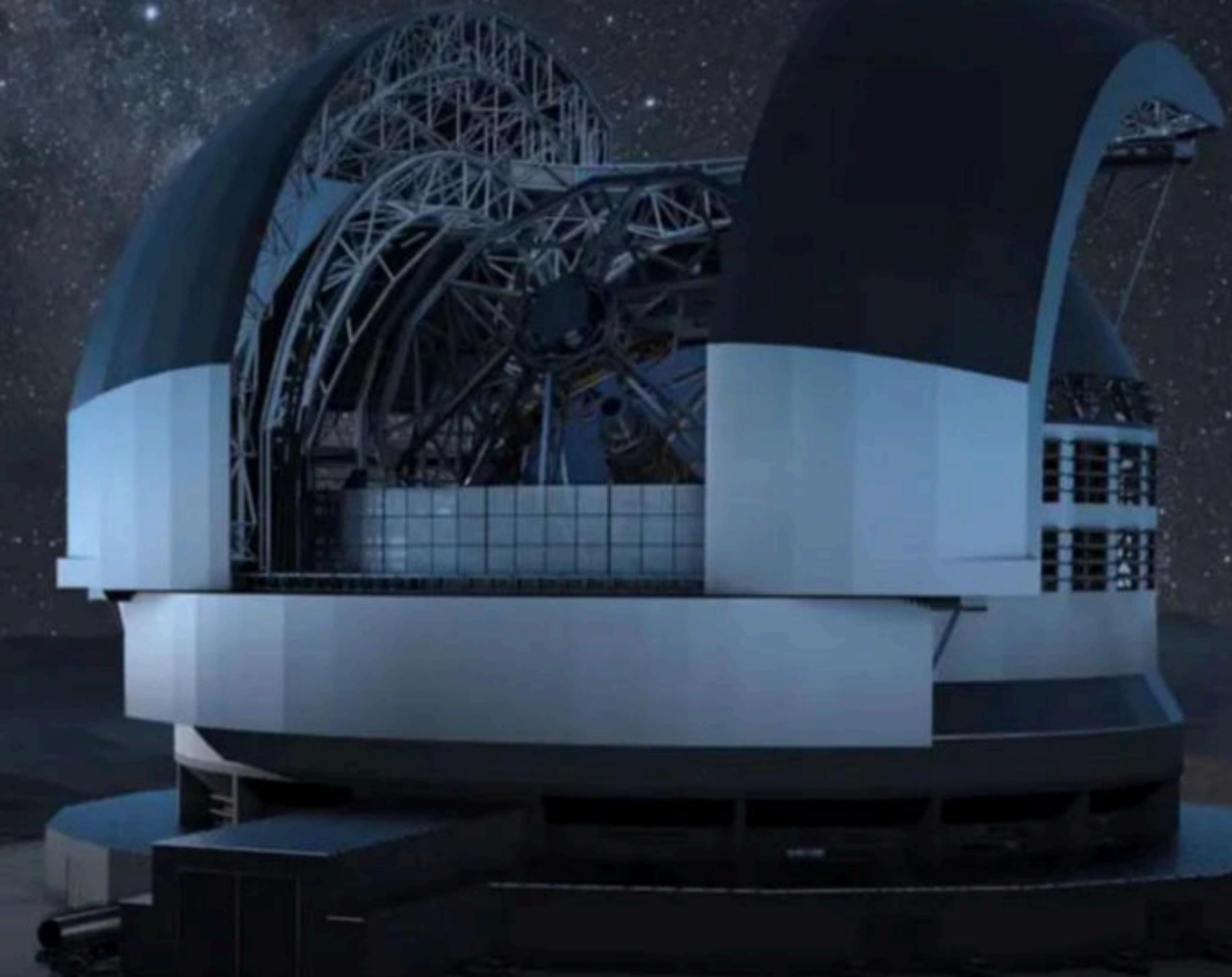




In a world filled with uncertainty, he was glad to have many good friends. He had always assisted them in times of need and was confident that they would reciprocate. However, the events of the last week proved him wrong. Which of the following inference(s) is/are logically valid and can be inferred from the above passage?

- (i) His friends were always asking him to help them.
 - (ii) He felt that when in need of help, his friends would let him down.
 - (iii) He was sure that his friends would help him when in need.
 - (iv) His friends did not help him last week.
-
- (i) and (ii)
 - (iii) and (iv)
 - (iii) only
 - (iv) only

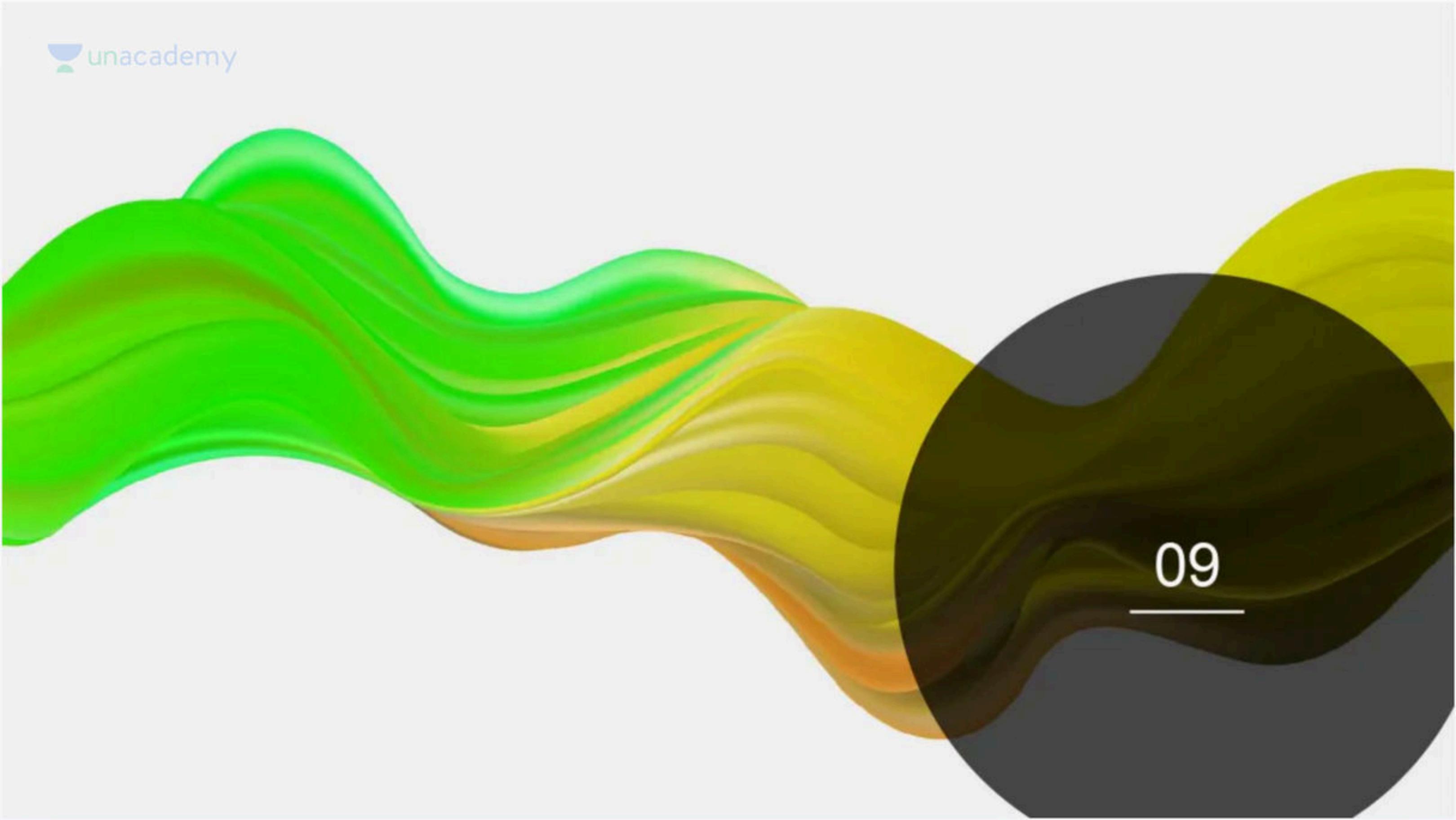
08





Leela is older than her cousin Pavithra. Pavithra's brother Shiva is older than Leela. When Pavithra and Shiva are visiting Leela, all three like to play chess. Pavithra wins more often than Leela does. Which one of the following statements must be TRUE based on the above?

- When Shiva plays chess with Leela and Pavithra, he often loses.
- Leela is the oldest of the three.
- Shiva is a better chess player than Pavithra.
- Pavithra is the youngest of the three.



09



If $q^{-a} = \frac{1}{r}$ and $r^{-b} = \frac{1}{s}$ and $S^{-c} = \frac{1}{q}$, the value of abc is _____

- (rqs) $^{-1}$
- 0
- 1
- $r^+q^+s^+$

10



P, Q, R and S are working on a project. Q can finish the task in 25 days, working alone for 12 hours a day. R can finish the task in 50 days, working alone for 12 hours per day. Q worked 12 hours a day but took sick leave in the beginning for two days. R worked 18 hours a day on all days. What is the ratio of work done by Q and R after 7 days from the start of the project?

- 10:11
- 11:10
- 20:21
- 21:20



GATE 2016 Official Paper Shift 2 - EC





Based on the given statements, select the appropriate option with respect to grammar and usage.

Statements

(i) The height of Mr. X is 6 feet.

(ii) The height of Mr. Y is 5 feet.

- Mr. X is longer than Mr. Y.
- Mr. X is more elongated than Mr. Y.
- Mr. X is taller than Mr. Y.
- Mr. X is lengthier than Mr. Y.

02





The students _____ the teacher on teachers' day for twenty years of dedicated teaching.

- facilitated
- felicitated
- fantasized
- fecilitated

A landscape painting depicting a serene sunset over a body of water. A large, luminous sun is positioned in the upper center, partially obscured by a cluster of pink and white clouds. The sky transitions from a deep blue at the top to warm orange and yellow hues near the horizon. Numerous small birds are scattered across the sky. In the foreground, a small wooden boat with two figures is visible on the left, and another boat with figures is on the right. Distant, hazy mountains are visible on the horizon.

03



After India's cricket world cup victory in 1983, Shrotriya who was playing both tennis and cricket till then, decided to concentrate only on cricket. And the rest is history.

What does the underlined phrase mean in this context?

- history will rest in peace
- rest is recorded in history books
- rest is well known
- rest is archaic

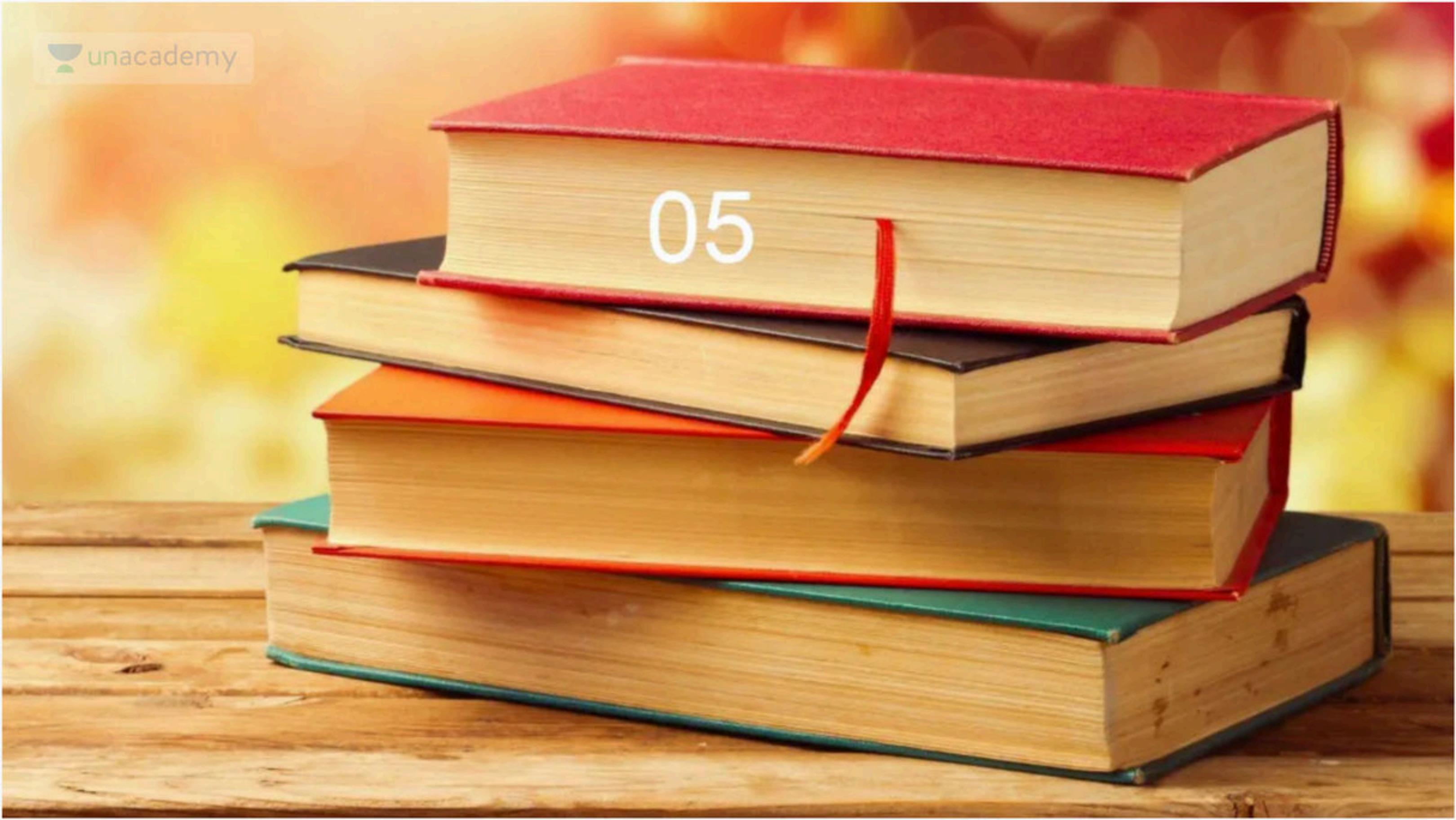


04



Given $(9 \text{ inches})^{\frac{1}{2}} = (0.25 \text{ yards})^{\frac{1}{2}}$. Which one of the following statements is TRUE?

- 3 inches = 0.5 yards
- 9 inches = 1.5 yards
- 9 inches = 0.25 yards
- 81 inches = 0.0625 yards



05



S, M, E and F are working in shifts in a team to finish a project. M works with twice the efficiency of others but for half as many days as E worked. S and M have 6 hour shifts in a day, whereas E and F have 12 hours shifts. What is the ratio of contribution of M to contribution of E in the project?

1:1

1:2

1:4

2:1

06



07



Social science disciplines were in existence in an amorphous form until the colonial period when they were institutionalized. In varying degrees, they were intended to further the colonial interest. In the time of globalization and the economic rise of postcolonial countries like India, conventional ways of knowledge production have become obsolete.

Which of the following can be logically inferred from the above statements?

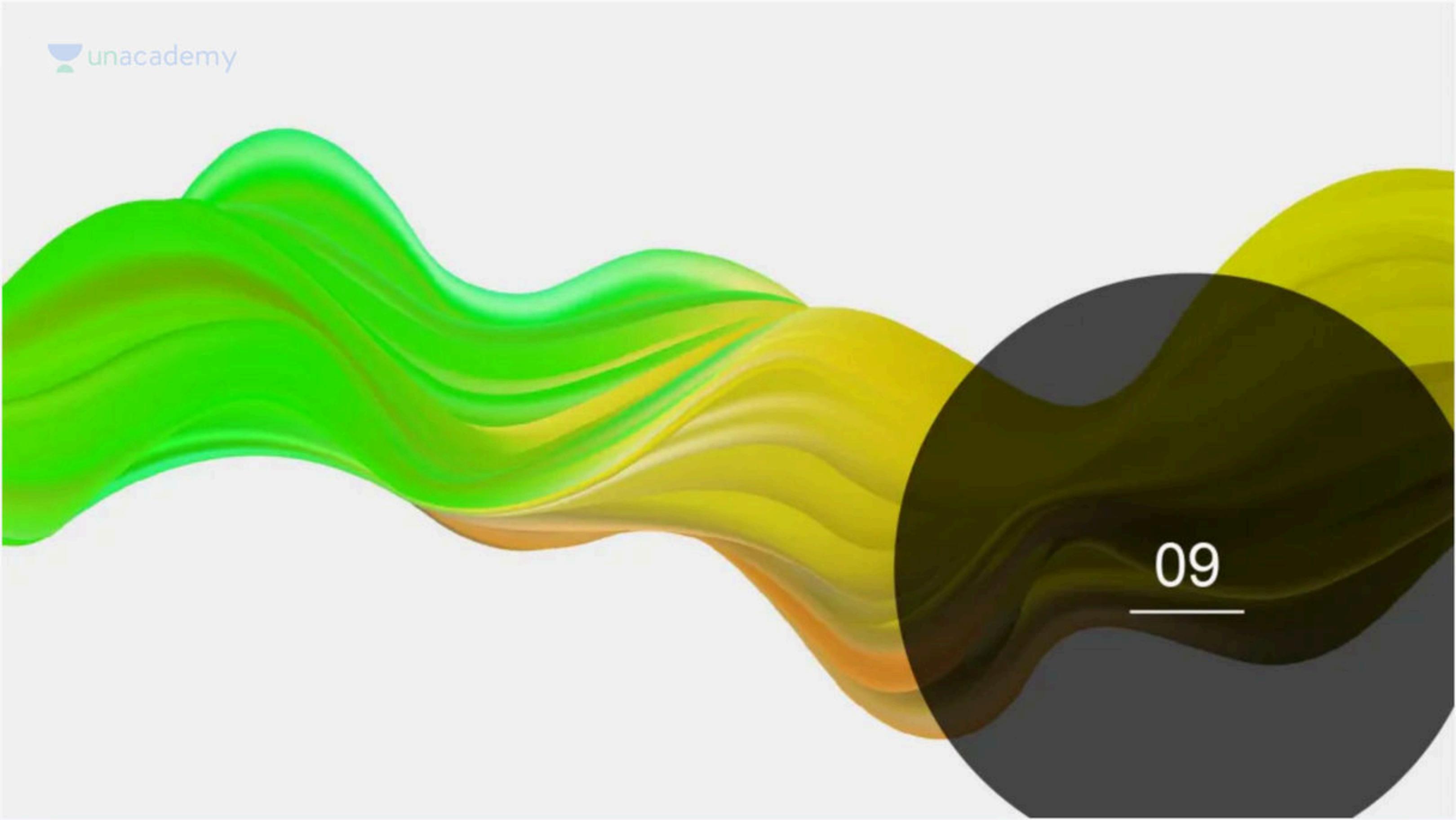
- i. Social science disciplines have become obsolete.
 - ii. Social science disciplines had a pre-colonial origin.
 - iii. Social science disciplines always promote colonialism
 - iv. Social science must maintain disciplinary boundaries.
-
- (ii) only
 - (i) and (iii) only
 - (ii) and (iv) only
 - (iii) and (iv) only





Two and a quarter hours back, when seen in a mirror, the reflection of a wall clock without number markings seemed to show 1:30. What is the actual current time shown by the clock?

- 8:15
- 11:15
- 12:15
- 12:45



09



M and N start from the same location. M travels 10 km East and then 10 km North-East. N travels 5 km South and then 4 km South-East. What is the shortest distance (in km) between M and N at the end of their travel?

- 18.60
- 22.50
- 20.61
- 25.00





A wire of length 340 mm is to be cut into two parts. One of the parts is to be made into a square and the other into a rectangle where sides are in the ratio of 1:2. What is the length of the side of the square (in mm) such that the combined area of the square and the rectangle is a MINIMUM?

- 30
- 40
- 120
- 180



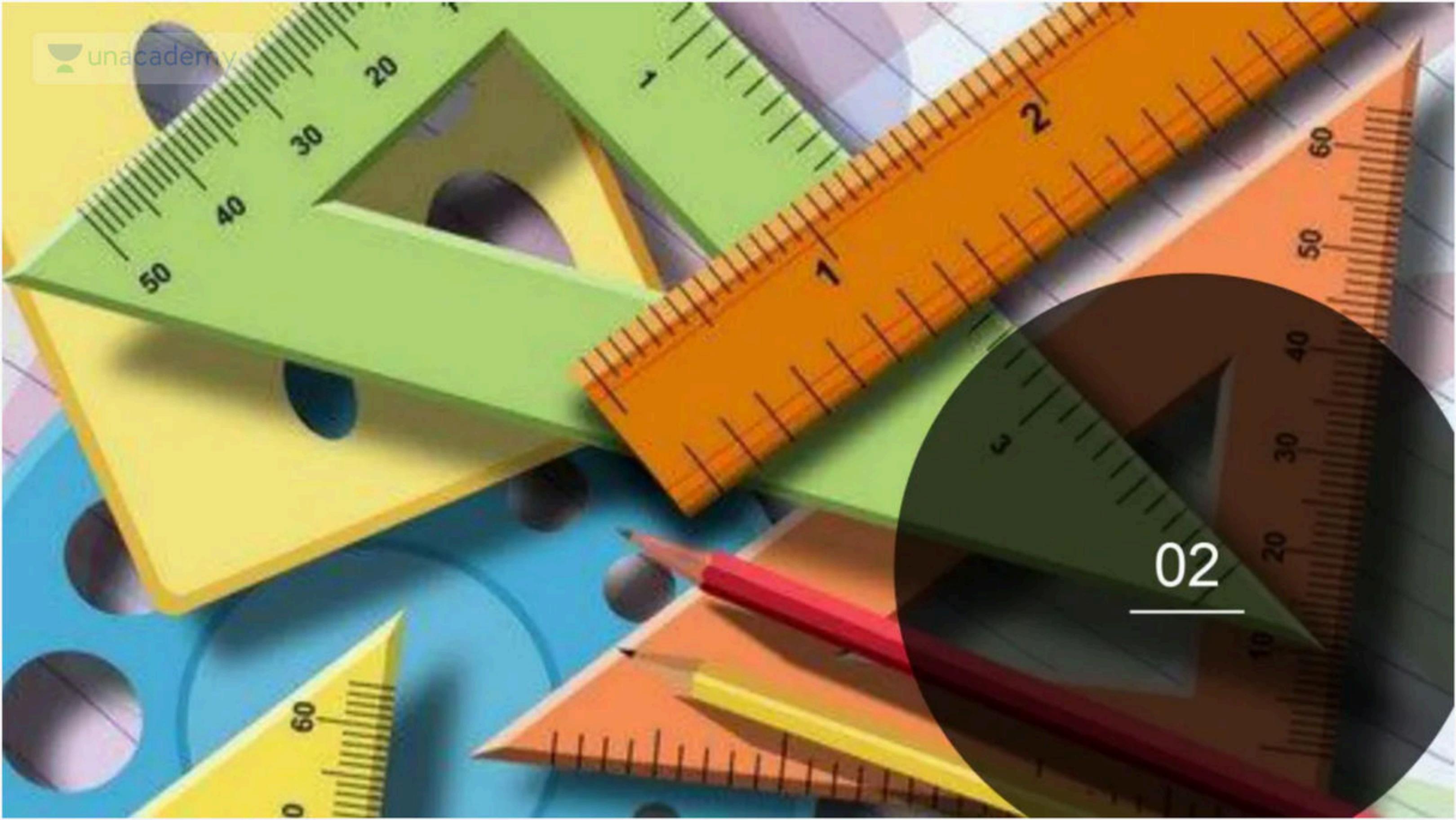
GATE 2017 Official Paper Shift 1 - EC

01



She has a sharp tongue and it can occasionally turn _____

- hurtful
- left
- methodical
- vital





I _____ made arrangements had I _____ informed earlier

- could have, been
- would have. being
- had, have
- had been, been

03





In the summer, water consumption is known to decrease overall by 25%. A Water Board official states that in the summer household consumption decreases by 20%, while other consumption increases by 70%. Which of the following statements is correct?

- The ratio of household to other consumption is 8/17
- The ratio of household to other consumption is 1/17
- The ratio of household to other consumption is 17/8
- There are errors in the official's statement.

04



40% of deaths on city roads may be attributed to drunken driving. The number of degrees needed to represent this as a slice of a pie chart is

- 120
- 144
- 160
- 212

05





Some tables are shelves. Some shelves are chairs. All chairs are benches. Which of the following conclusions can be deduced from the preceding sentences?

- i) At least one bench is a table
 - ii) At least one shelf is a bench
 - iii) At least one chair is a table
 - iv) All benches are chairs
-
- Only i
 - Only ii
 - Only ii and iii
 - Only iv

06



"If you are looking for a history of India, or for an account of the rise and fall of the British Raj, or for the reason of the cleaving of the subcontinent into two mutually antagonistic parts and the effects, this mutilation will have in the respective sections, and ultimately on Asia, you will not find it in these pages; for though I have spent a lifetime in the country. I lived too near the seat of events, and was too intimately associated with the actors, to get the perspective needed for the impartial recording of these matters".

Here, the word 'antagonistic' is closest in meaning to

- Impartial
- Argumentative
- Separated
- Hostile

07



S, T, U, V, W, X, Y and Z are seated around a circular table. T's neighbours are Y and V, Z is seated third to the left of T and second to the right of S. U's neighbours are S and Y and T and W are not seated opposite each other. Who is third to the left of V?

X

W

U

T

08



Trucks (10 m long) and cars (5 m long) go on a single lane bridge. There must be a gap of at least 20 m after each truck and a gap of at least 15 m after each car. Trucks and cars travel at a speed of 36 km/h. If cars and trucks go alternately, what is the maximum number of vehicles that can use the bridge in one hour?

- 1440
- 1200
- 720
- 600

09

There are 3 Indians and 3 Chinese in a group of 6 people. How many subgroups of this group can we choose so that every subgroup has at least one Indian?

- 56
- 52
- 48
- 44

10





GATE 2017 Official Paper Shift 2 - EC

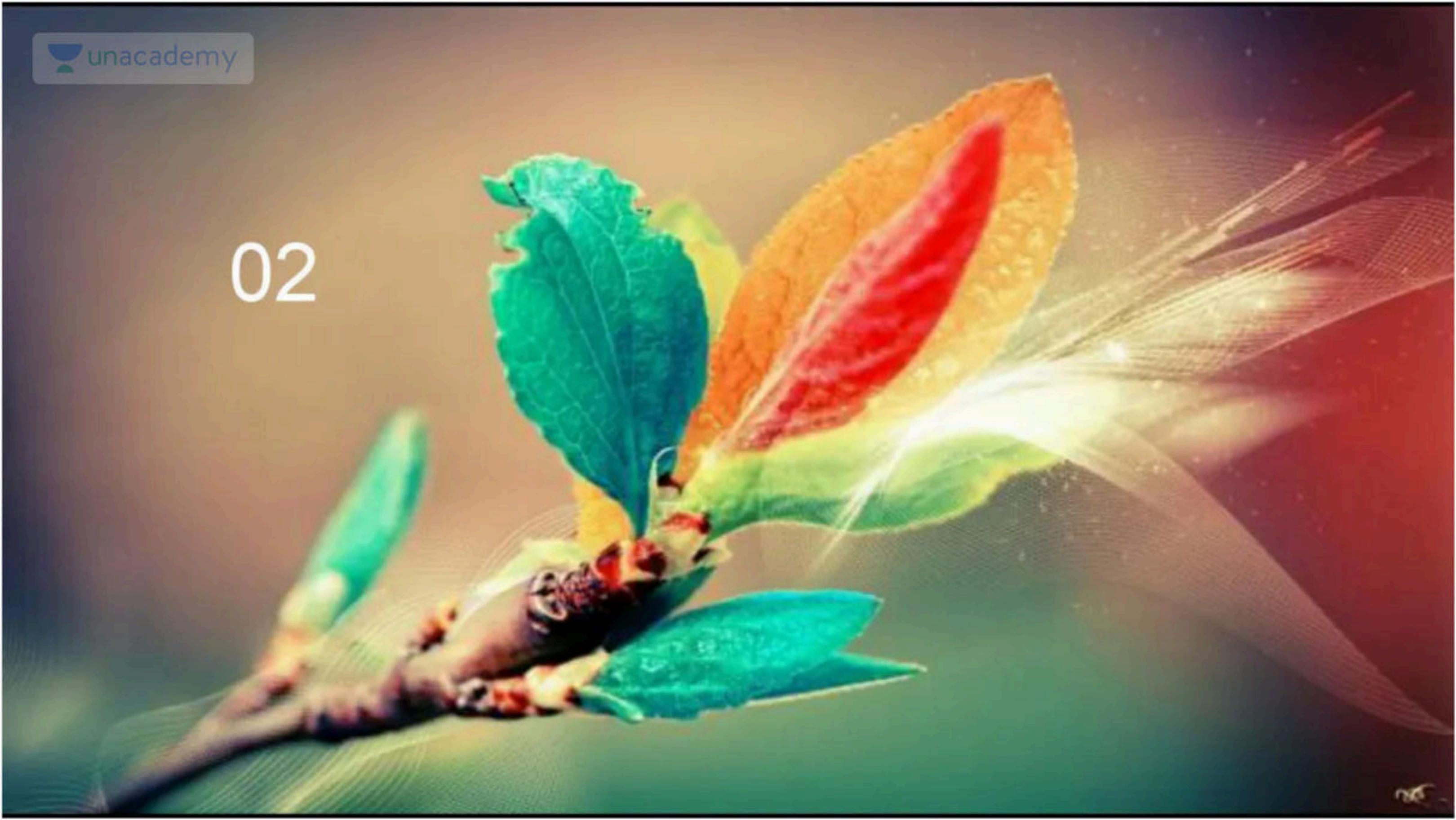
01



The ninth and the tenth of this month are Monday and Tuesday _____.

- figuratively
- retrospectively
- respectively
- rightfully

02





It is _____ to read this year's textbook _____ the last year's.

- easier, than
- most easy, than
- easier, from
- easiest, from



03

A rule states that in order to drink beer, one must be over 18 years old. In a bar, there are 4 people. P is 16 years old, Q is 25 years old, R is drinking milkshake and S is drinking a beer. What must be checked to ensure that the rule is being followed?

- Only P's drink
- Only P's drink and S's age
- Only S's age
- Only P's drink, Q's drink and S's age



04

Fatima starts from point P, goes North for 3 km, and then East for 4 km to reach point Q. She then turns to face point P and goes 15 km in that direction. She then goes North for 6 km. How far is she from point P, and in which direction should she go to reach point P?

- 8 km, East
- 12 km, North
- 6 km, East
- 10 km, North

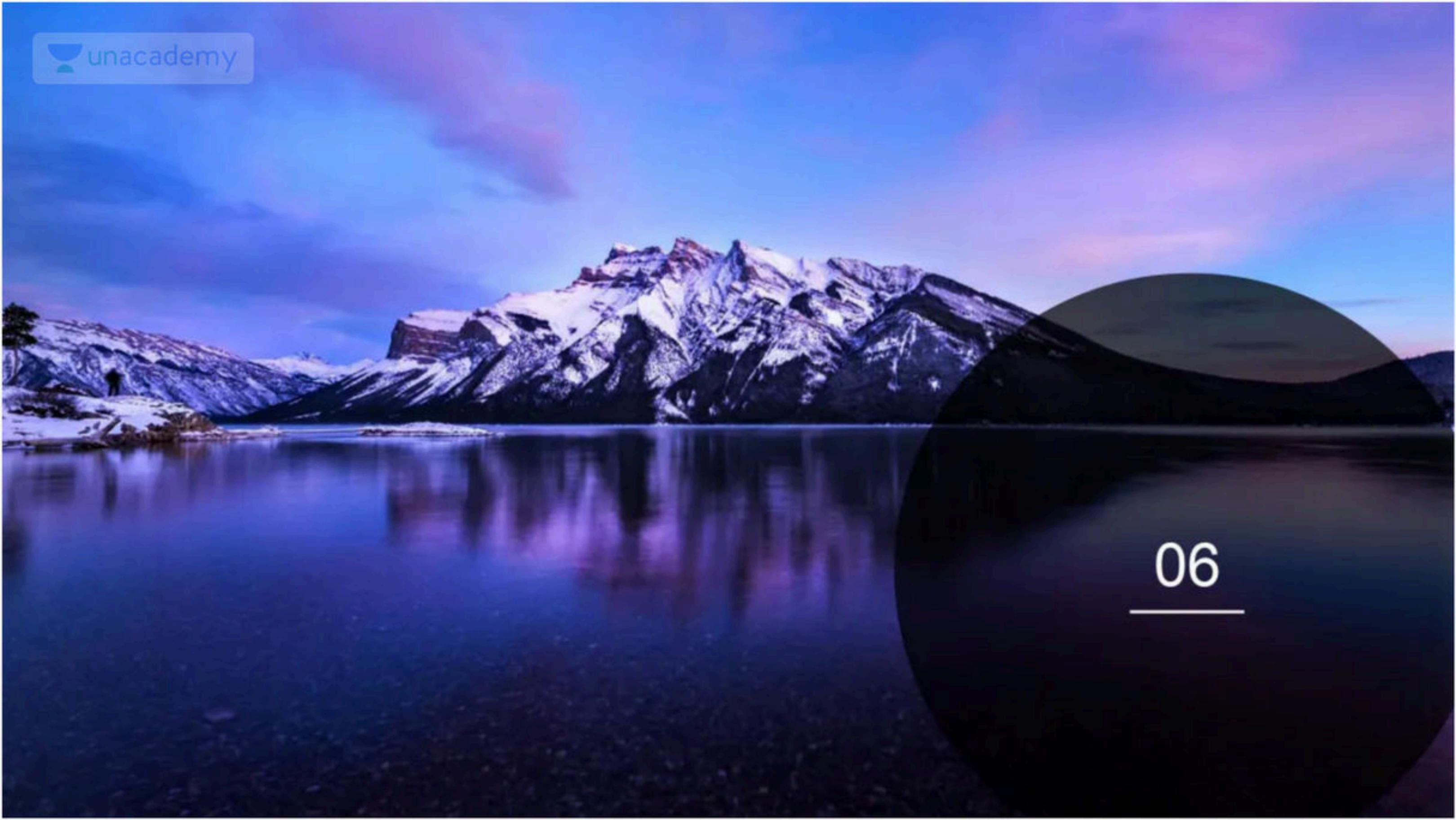


05



500 students are taking one or more courses out of Chemistry, Physics, and Mathematics. Registration records indicate course enrolment as follows: Chemistry (329), Physics (186), Mathematics (295), Chemistry and Physics (83), Chemistry and Mathematics (217), and Physics and Mathematics (63). How many students are taking all 3 subjects?

- 37
- 43
- 47
- 53



06



"If you are looking for a history of India, or for an account of the rise and fall of the British Raj, or for the reason of the cleaving of the subcontinent into two mutually antagonistic parts and the effects this mutilation will have in the respective sections, and ultimately on Asia, you will not find it in these pages; for though I have spent a lifetime in the country, I lived too near the seat of events, and was too intimately associated with the actors, to get the perspective needed for the impartial recording of these matters."

Which of the following statements best reflects the author's opinion?

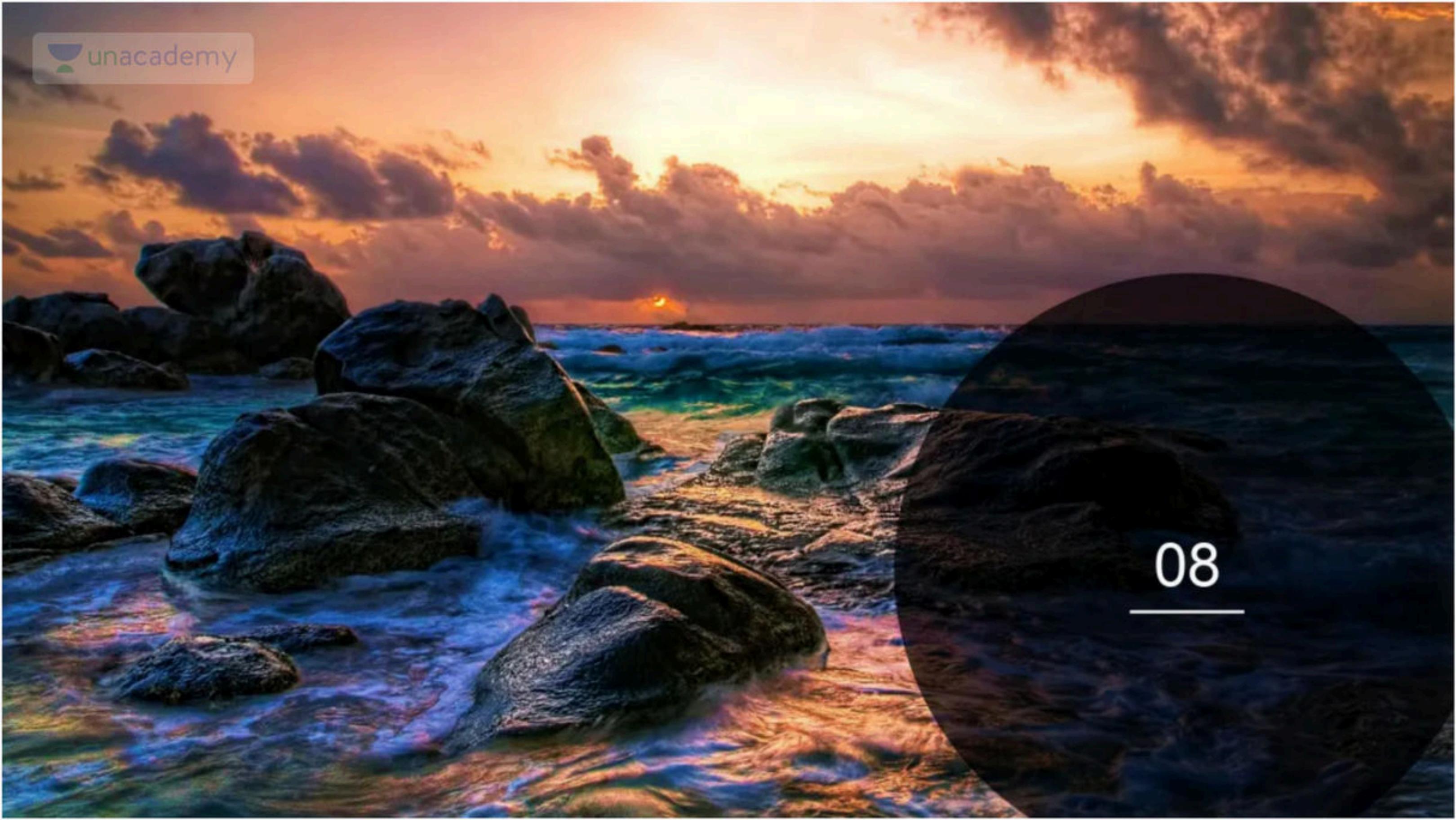
- An intimate association does not allow for the necessary perspective.
- Matters are recorded with an impartial perspective.
- An intimate association offers an impartial perspective.
- Actors are typically associated with the impartial recording of matters.





Each of P, Q, R, S, W, X, Y and Z has been married at most once. X and Y are married and have two children P and Q. Z is the grandfather of the daughter S of P. Further, Z and W are married and are parents of R. Which one of the following must necessarily be FALSE?

- X is the mother-in-law of R
- P and R are not married to each other
- P is a son of X and Y
- Q cannot be married to R



08

1200 men and 500 women can build a bridge in 2 weeks. 900 men and 250 women will take 3 weeks to build the same bridge. How many men will be needed to build the bridge in one week?

- 3000
- 3300
- 3600
- 3900



09



The number of 3-digit numbers such that the digit 1 is never to the immediate right of 2 is

- 781
- 791
- 881
- 891

10



GATE 2018 Official Paper - EC

01



"By giving him the last _____ of the cake, you will ensure lasting _____ in our house today".

The words that best fill the blanks in the above sentence are

- peas, piece
- piece, peace
- peace, piece
- peace, peas



02



"Even though there is a vast scope for its _____, tourism has remained a/am _____ area."

The words that best fill the blanks in the above sentence are

- Improvement, neglected
- Rejection, approved
- Fame, glum
- Interest, disinterested

03

If the number 715_423 is divisible by 3 (_ denotes the missing digit in the thousandths place), then the smallest whole number in the place of _ is _____.

0

2

5

6

04



What is the value of $1 + \frac{1}{4} + \frac{1}{16} + \frac{1}{64} + \frac{1}{256} + \dots$?

2

$\frac{7}{4}$

$\frac{3}{2}$

$\frac{4}{3}$



05



A 1.5 m tall person is standing at a distance of 3 m from a lamp post. The light from the lamp at the top of the post casts her shadow. The length of the shadow is twice her height. What is the height of the lamp post in meters?

- 1.5
- 3
- 4.5
- 6

06



Leila aspires to buy a car worth Rs. 10,00,000 after 5 years. What is the minimum amount in Rupees that she should deposit now in a bank which offers 10% annual rate of interest, if the interest was compounded annually?

- 5,00,000
- 6,21,000
- 6,66,667
- 7,50,000



07



Two alloys A and B contain gold and copper in the ratios of 2 : 3 and 3 : 7 by mass, respectively. Equal ratio of alloys A and B are melted to make an alloy C. The ratio of gold to copper in alloy C is ____.

- 5 : 10
- 7 : 13
- 6 : 11
- 9 : 13



08

The Cricket Board has long recognized John's potential as a leader of the team. However, his on-field temper has always been a matter of concern for them since his junior days. While this aggression has filled stadiums with die-hard fans, it has taken a toll on his own batting. Until recently, it appeared that he found it difficult to convert his aggression into big scores. Over the past three seasons though, that picture of John has been replaced by a cerebral, calculative and successful batsman-captain. After many years, it appears that the team has finally found a complete captain.

Which of the following statements can be logically inferred from the above paragraph?

- i) Even as a junior cricketer, John was considered a good captain.
 - ii) Finding a complete captain is a challenge.
 - iii) Fans and the Cricket Board have differing views on what they want in a captain.
 - iv) Over the past three seasons, John has accumulated big scores.
- (i), (ii) and (iii) only
- (iii) and (iv) only
- (ii) and (iv) only
- (i), (ii), (iii) and (iv)

09



A cab was involved in a hit and run accident at night. You are given the following data about the cabs in the city and the accident.

- (i) 85% of cabs in the city are green and the remaining cabs are blue.
- (ii) A witness identified the cab involved in the accident as blue.
- (iii) It is known that a witness can correctly identify the cab color only 80% of the time.

Which of the following options is closest to the probability that the accident was caused by a blue cab?

- 12%
- 15%
- 41%
- 80%

10

A coastal region with unparalleled beauty is home to many species of animals. It is dotted with coral reefs and unspoiled white sandy beaches. It has remained inaccessible to tourists due to poor connectivity and lack of accommodation. A company has spotted the opportunity and is planning to develop a luxury resort with helicopter service to the nearest major city airport. Environmentalists are upset that this would lead to the region becoming crowded and polluted like any other major beach resorts.

Which one of the following statements can be logically inferred from the information given in the above paragraph?

- The culture and tradition of the local people will be influenced by the tourists.
- The region will become crowded and polluted due to tourism.
- The coral reefs are on the decline and could soon vanish.
- Helicopter connectivity would lead to an increase in tourists coming to the region.



GATE 2019 Official Paper - EC

01





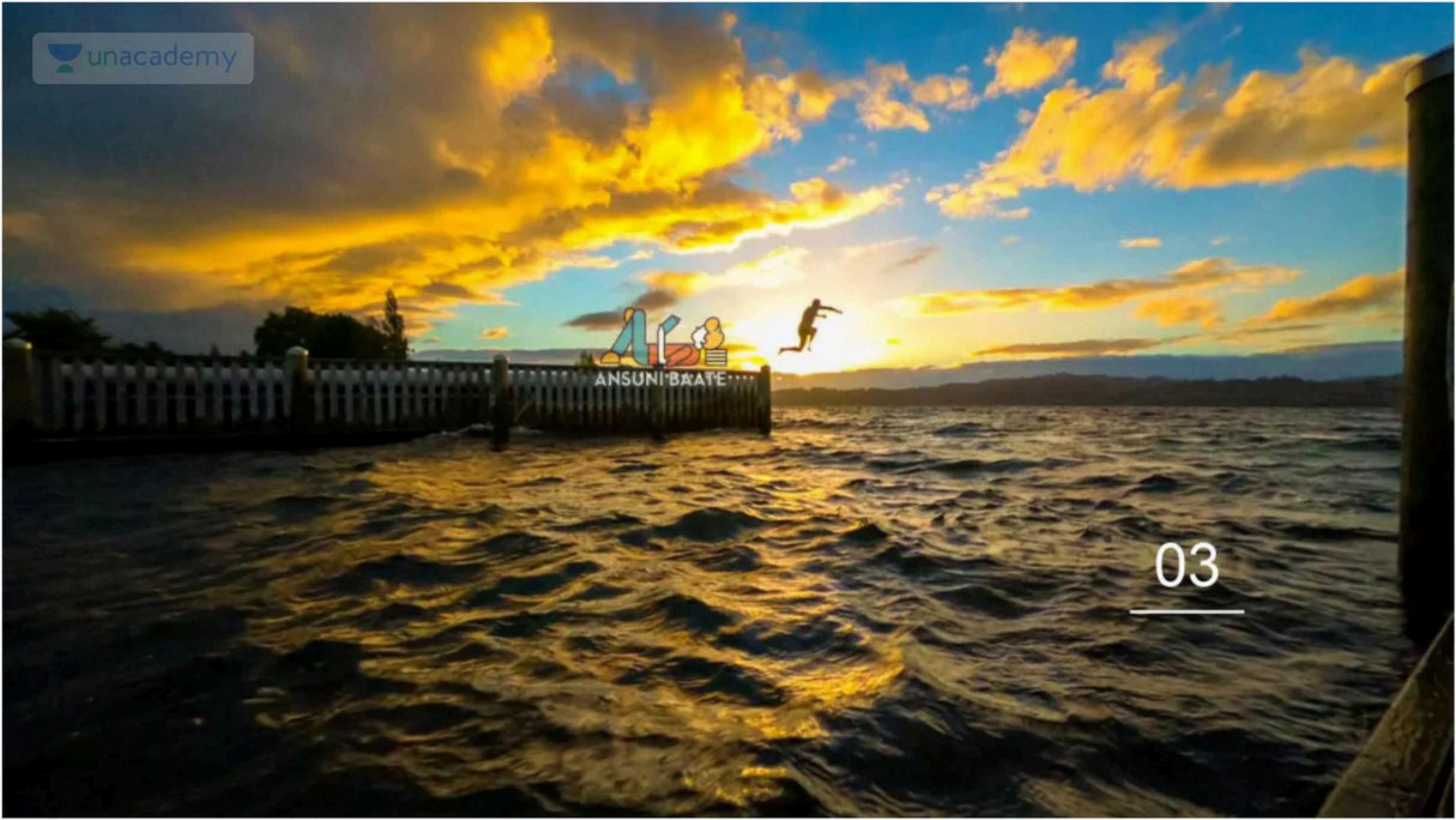
The strategies that the company _____ to sell its products _____ house-to-house marketing.

- use, includes
- uses, include
- used, includes
- uses, including

02

The boat arrived _____ dawn.

- in
- at
- on
- under

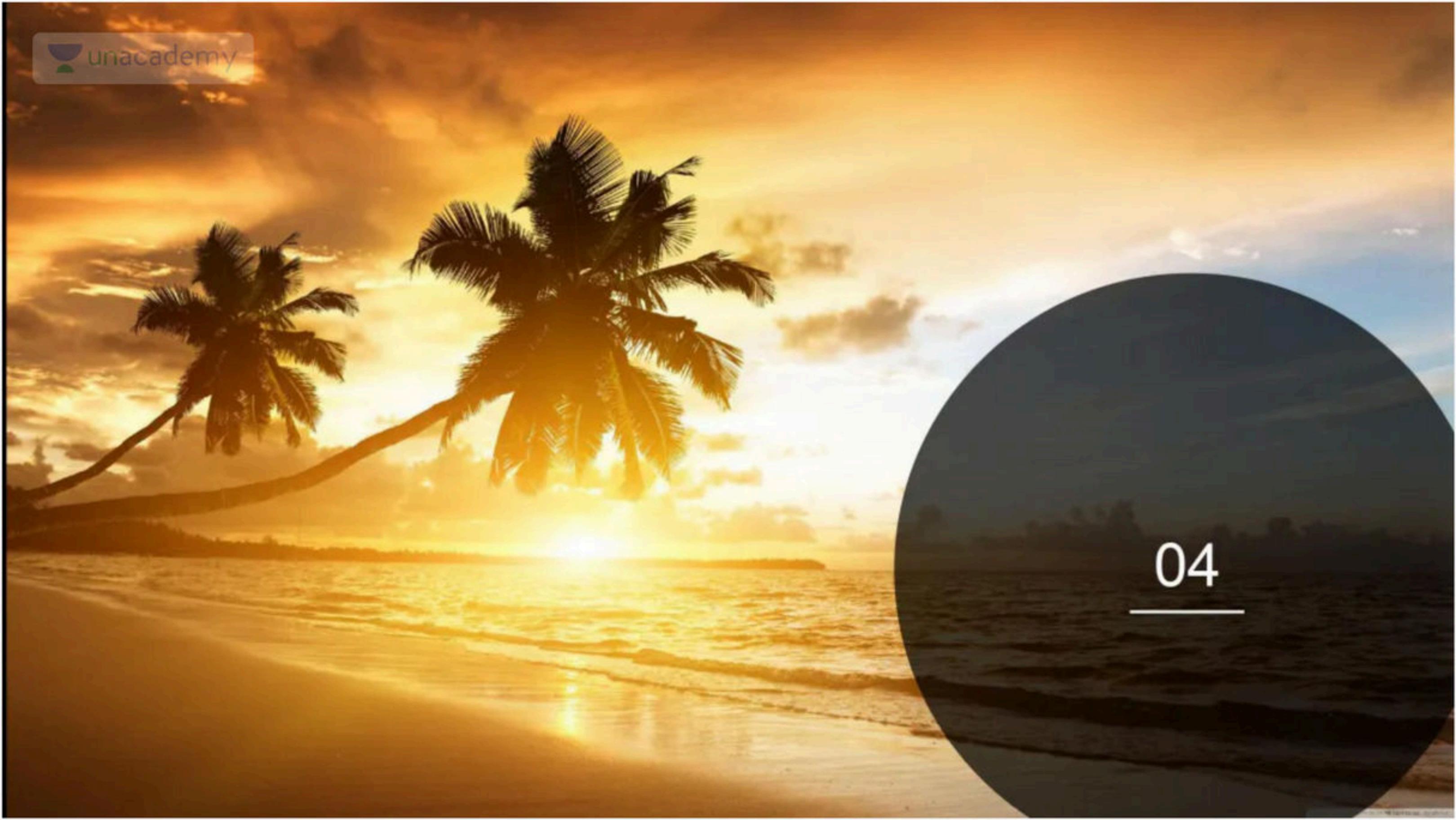


03



It would take one machine 4 hours to complete a production order and another machine 2 hour to complete the same order. If both machines work simultaneously at their respective constant rates, the time taken to complete the same order is _____ hours.

- 2/3
- 3/4
- 4/3
- 7/3

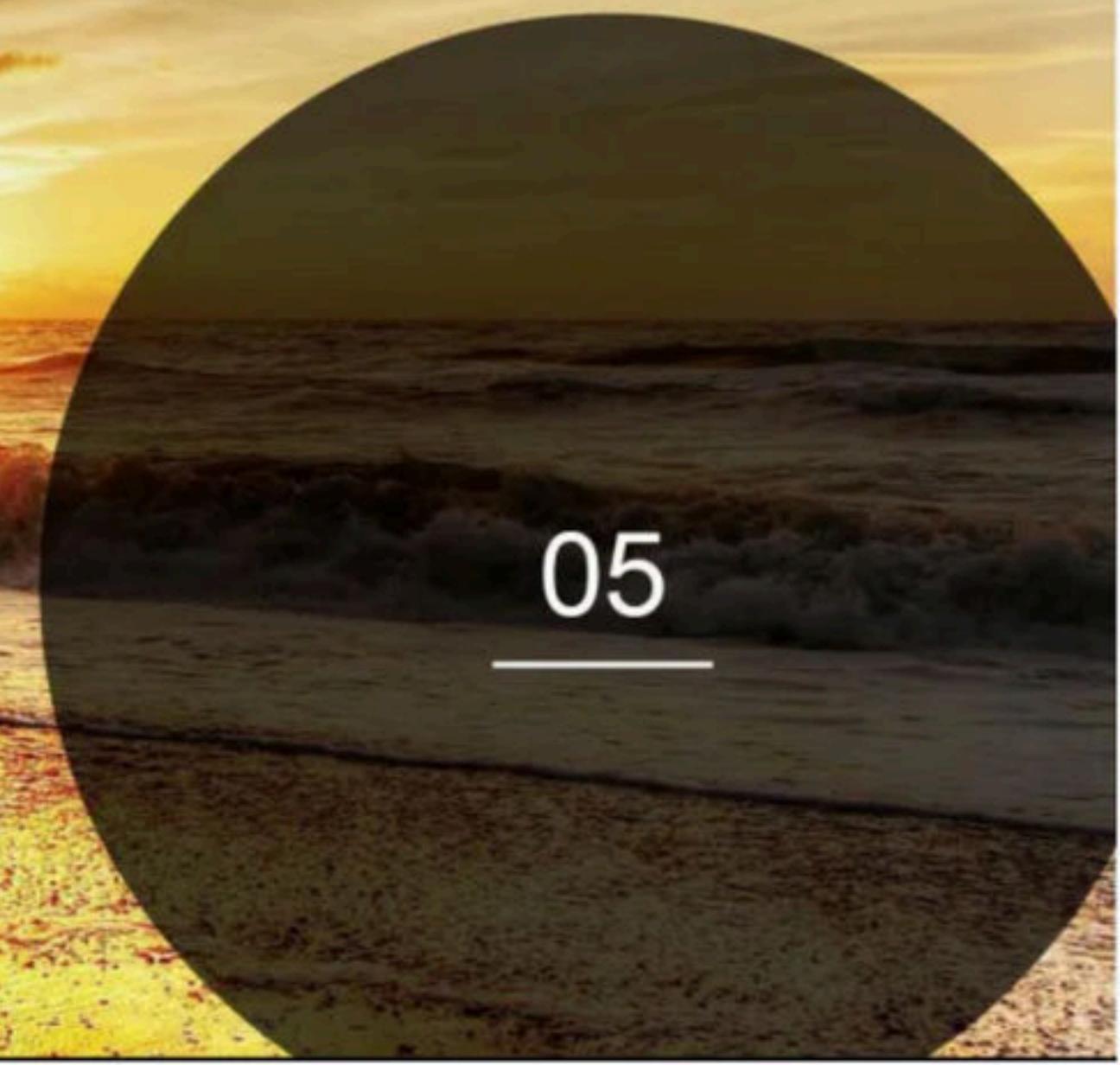


04



Five different books (P, Q, R, S, T) are to be arranged on a shelf. The books R and S are to be arranged first second, respectively from the right side of the shelf. The number of different orders in which P, Q and T may be arranged is _____.

- 2
- 6
- 12
- 120



05



When he did not come home, she _____ him lying dead on the roadside somewhere.

- concluded
- looked
- notice
- pictured

06





Four people are standing in a line facing you. They are Rahul, Mathew, Seema, and Lohit. One is an engineer, one is a doctor, one a teacher, and another a dancer. You are told that:

1. Mathew is not standing next to Seema
2. There are two people standing between Lohit and the engineer
3. Rahul is not a doctor
4. The teacher and the dancer are standing next to each other
5. Seema is turning to her right to speak to the doctor standing next to her

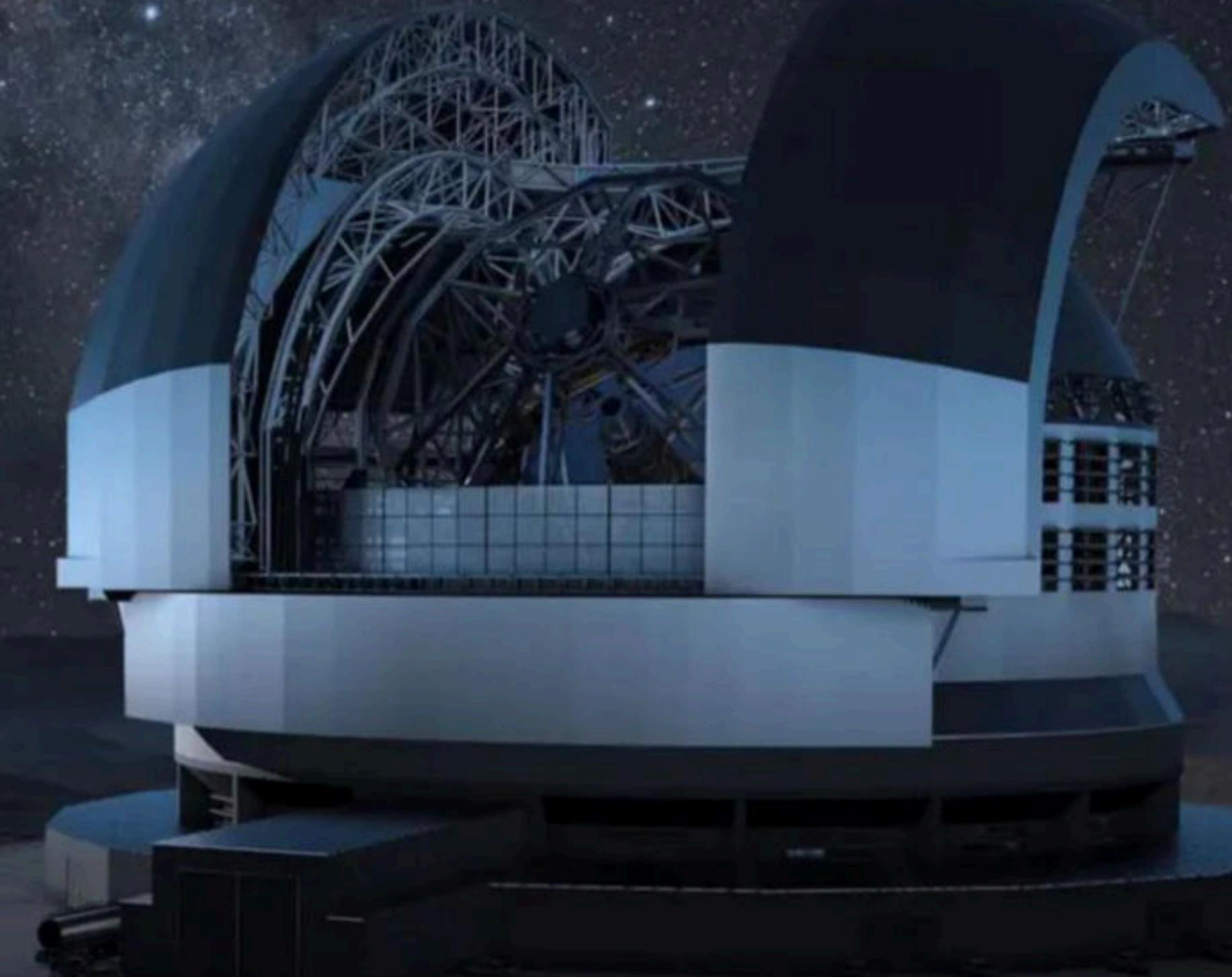
Who among them is an engineer?

- Seema
- Lohit
- Rahul
- Mathew

07



08



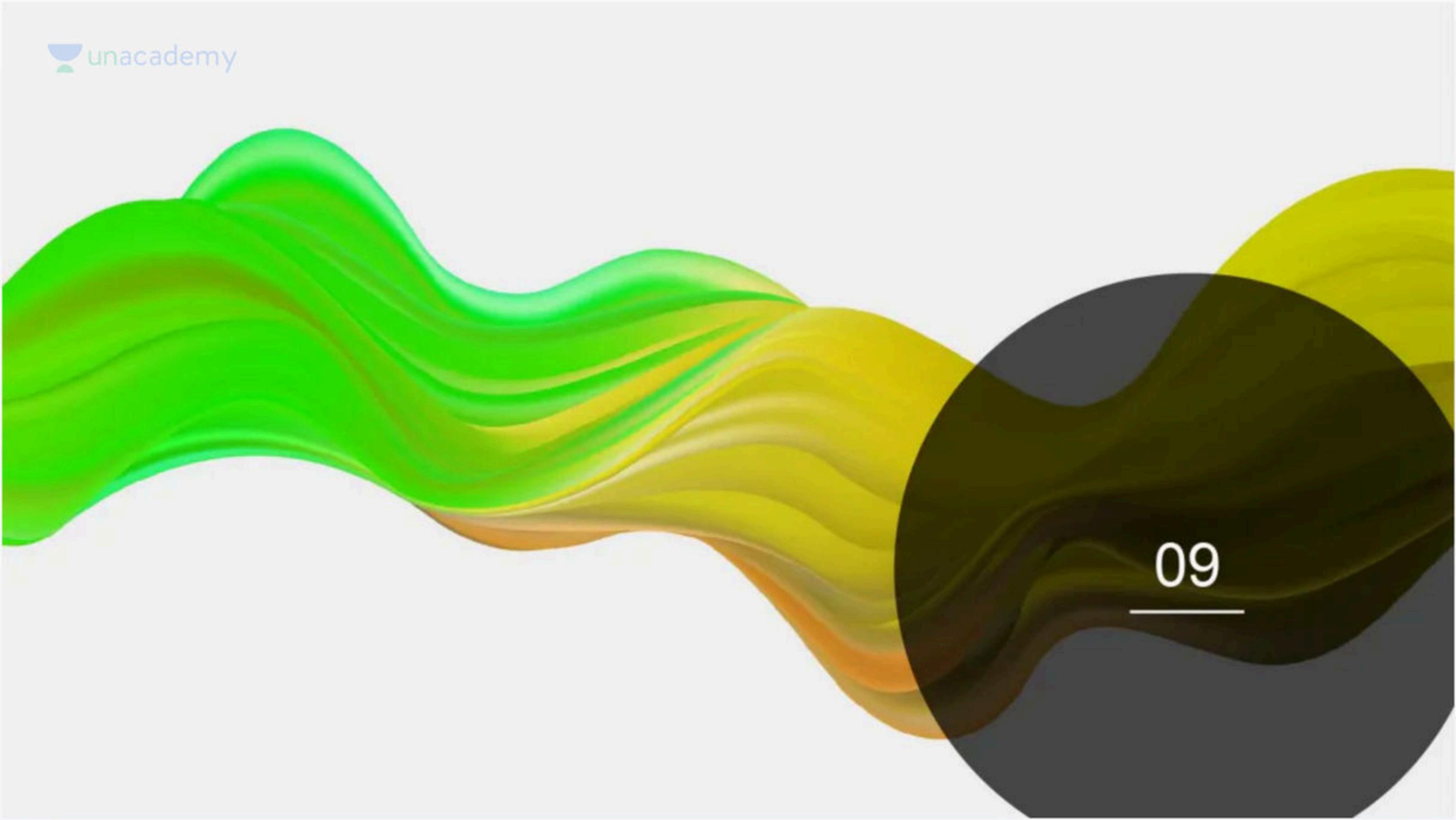


"Indian history was written by British historians – extremely well documented and researched, but not always impartial. History had to serve its purpose: Everything was made subservient to the glory of the Union Jack. Latter-day Indian scholars presented a contrary picture."

From the text above, we can infer that:

Indian history written by British historians _____

- was well documented and not researched but was always biased.
- was not well documented and researched and was always biased.
- was well documented and researched but was sometimes biased.
- was not well documented and researched and was sometimes biased.



09



Two design consultants, P and Q, started working from 8 AM for a client. The client budgeted a total of USD 3000 for the consultants. P stopped working when the hour hand moved by 210 degrees on the clock. Q stopped working when the hour hand moved by 240 degrees. P took two tea breaks of 15 minutes each during her shift, but took no lunch break. Q took only one lunch break for 20 minutes, but no tea breaks. The market rate for consultants is USD 200 per hour and breaks are not paid. After paying the consultants, the client shall have USD remaining in the budget.

- 000.00
- 166.67
- 300.00
- 433.33

10



GATE 2020 Official Paper - EC





The untimely loss of life is a cause of serious global concern as thousands of people get killed _____ accidents every year while many other die _____ diseases like cardiovascular disease, cancer, etc

- in, of
- from, of
- during, from
- from, from

02





He was not only accused of theft _____ of conspiracy.

- rather
- but also
- but even
- rather than

A landscape painting depicting a serene sunset over a body of water. A large, luminous sun is positioned behind a cluster of pink and white clouds, casting a warm glow across the sky. Numerous small birds are scattered throughout the scene, some in flight against the bright sky and others silhouetted against the horizon. In the foreground, a small wooden boat with two figures is visible on the left, and another boat with several figures is on the right. Distant, hazy mountains are visible on the horizon.

03



Select the word that fits the analogy:

Explicit : Implicit :: Express :

- Impress
- Repress
- Compress
- Suppress

IIT, Delhi GATE 2020



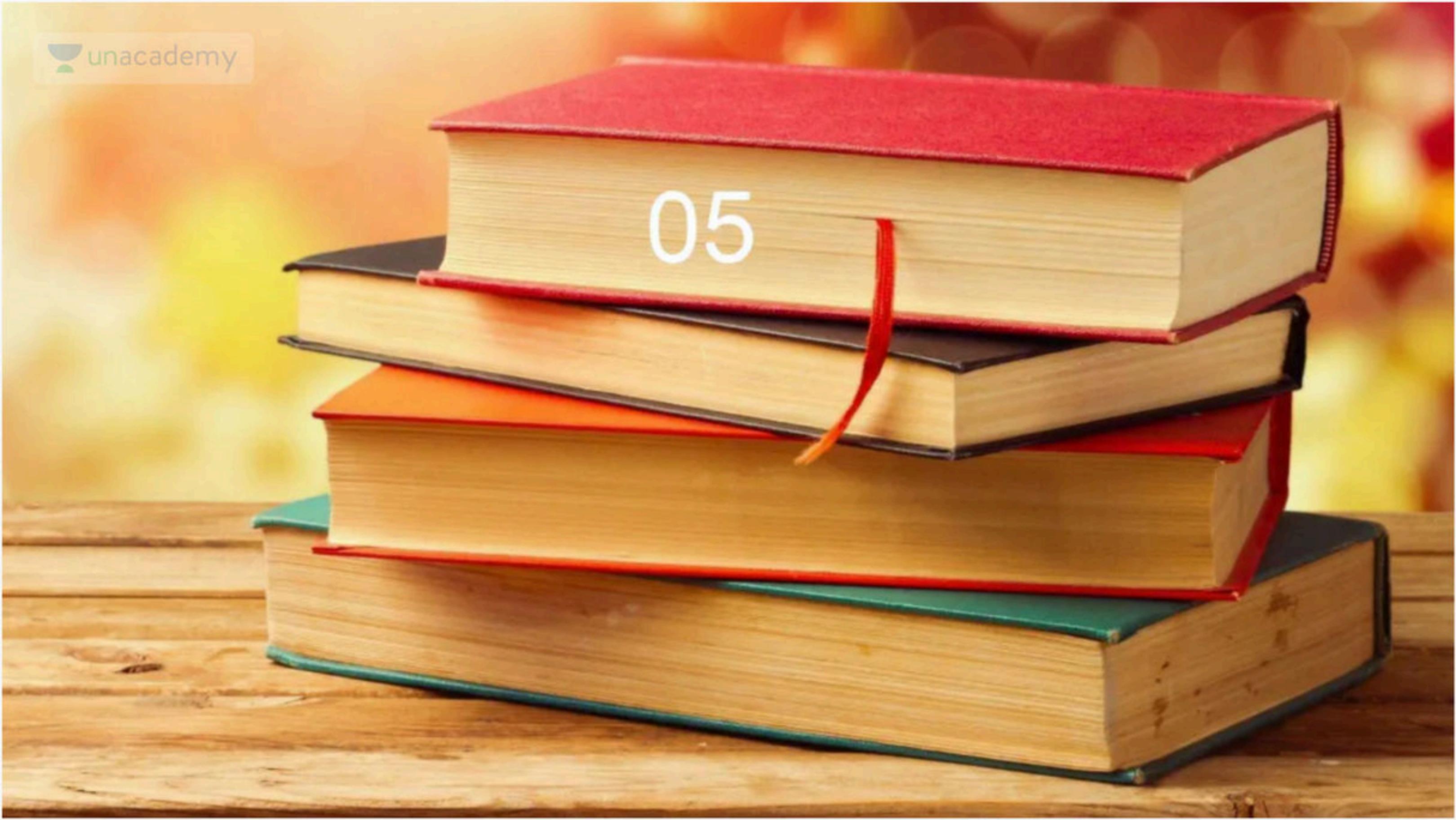
04



The Canadian constitution requires that equal importance be given to English and French. Last year, Air Canada lost a lawsuit and had to pay a six-figure fine to a French-speaking couple after they filed complaints about formal in-flight announcements in English lasting 15 seconds, as opposed to informal 5-second messages in French.

The French-speaking couple were upset at

- the in-flight announcements being made in English.
- the English announcements being clearer than the French ones.
- the English announcements being longer than the French ones.
- equal importance being given to English and French



05

A superadditive function $f(\cdot)$ satisfies the following property:

$$f(x_1 + x_2) \geq f(x_1) + f(x_2)$$

Which of the following functions is a superadditive function for $x > 1$?

e^x

\sqrt{x}

$1/x$

e^{-x}

06





The global financial crisis in 2008 is considered to be the most serious worldwide financial crisis, which started with the sub-prime lending crisis in USA in 2007. The sub-prime lending crisis led to the banking crisis in 2008 with the collapse of Lehman Brothers in 2008. The sub-prime lending refers to the provision of loans to those borrowers who may have difficulties in repaying loans, and it arises because of excess liquidity following the East Asian crisis.

Which one of the following sequences shows the correct precedence as per the given passage?

- East Asian crisis → subprime lending crisis → banking crisis → global financial crisis.
- Subprime lending crisis → global financial crisis → banking crisis → East Asian crisis.
- Banking crisis → subprime lending crisis → global financial crisis → East Asian crisis.
- Global financial crisis → East Asian crisis → banking crisis → subprime lending crisis.

07

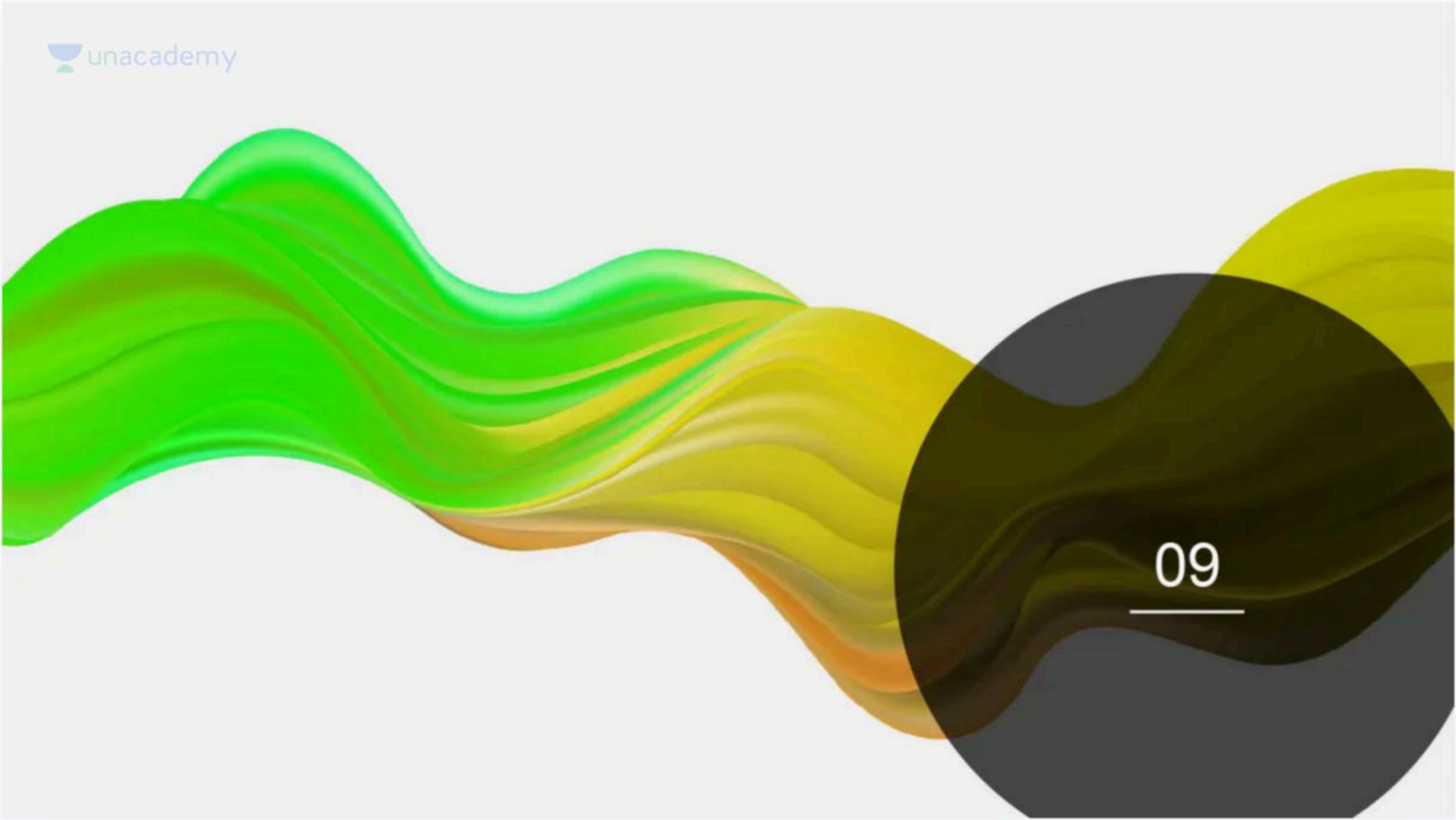




It is quarter past three in your watch. The angle between the hour hand and the minute hand is

- 0°
- 7.5°
- 15°
- 22.5°





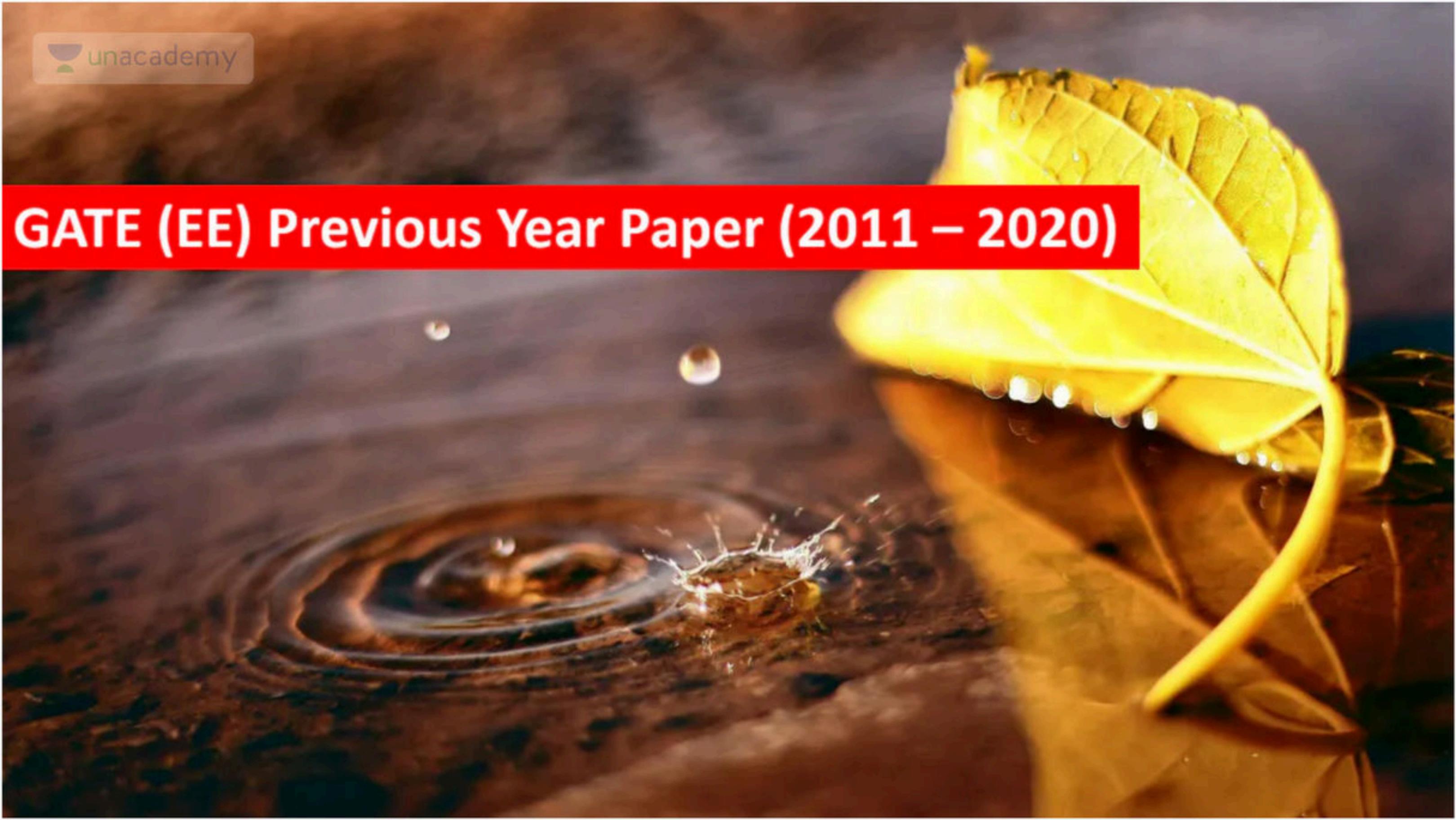
09

a, b, c are real numbers. The quadratic equation $ax^2 - bx + c = 0$ has equal roots, which is β , then

- $\beta = b/a$
- $\beta^2 = ac$
- $\beta^3 = bc/(2a^2)$
- $b^2 \neq 4ac$



GATE (EE) Previous Year Paper (2011 – 2020)





IIT, Madras GATE 2011 - (EE)

01



There are two candidates P and Q in an election. During the campaign, 40% of the voters promised to vote for P, and rest for Q. However, on the day of election 15% of the voters went back on their promise to vote for P and instead voted for Q. 25% of the voters went back on their promise to vote for Q and instead voted for P. Suppose, P lost by 2 votes, then what was the total number of voters?

- 100
- 110
- 90
- 95

IIT, Madras GATE 2011



02



Choose the most appropriate word from the options given below to complete the following sentence:

It was her view that the country's problems had been _____ by foreign technocrats, so that to invite them to come back would be counter-productive.

- identified
- ascertained
- exacerbated
- analysed

03



Choose the word from the options given below that is most nearly opposite in meaning to the given word:

Frequency

- periodicity
- rarity
- gradualness
- persistency

IIT, Madras GATE 2011

04



Choose the most appropriate word from the options given below to complete the following sentence:

Under ethical guidelines recently adopted by the Indian Medical Association, human genes are to be manipulated only to correct diseases for which _____ treatments are unsatisfactory.

- similar
- most
- uncommon
- available

IIT, Madras GATE 2011

05





The question below consists of a pair of related words followed by four pairs of words. Select the pair that best expresses the relation in the original pair:

Gladiator : Arena

- Dancer : Stage
- Commuter : Train
- Teacher : Classroom
- Lawyer : Courtroom

IIT, Madras GATE 2011

06



07



Three friends, R, S and T shared toffee from a bowl. R took $\frac{1}{3}$ rd of the toffees, but returned four to the bowl. S took $\frac{1}{4}$ th of what was left but returned three toffees to the bowl. T took half of the remainder but returned two back into the bowl. If the bowl had 17 toffees left, how many toffees were originally there in the bowl?

38

31

48

41

IIT, Madras GATE 2011



08



Given that $f(y) = |y|/y$, and q is any non-zero real number, the value of $|f(q) - f(-q)|$ is

- 0
- 1
- 1
- 2

IIT, Madras GATE 2011

09



The sum of n terms of the series $4 + 44 + 444 + \dots$ is

- $(4/81) [10^{n+1} - 9n - 1]$
- $(4/81) [10^{n-1} - 9n - 1]$
- $(4/81) [10^{n+1} - 9n - 10]$
- $(4/81) [10^n - 9n - 10]$

10



The horse has played a little known but very important role in the field of medicine. Horses were injected with toxins of diseases until their blood built up immunities. Then a serum was made from their blood. Serums to fight with diphtheria and tetanus were developed this way.

It can be inferred from the passage, that horses were

- given immunity to diseases
- generally quite immune to diseases
- given medicines to fight toxins
- given diphtheria and tetanus serums



IIT, Delhi GATE 2012 - (EE)

01



One of the parts (A, B, C, D) in the sentence given below contains an ERROR. Which one of the following is INCORRECT?

I requested that he should be given the driving test today instead of tomorrow.

- requested that
- should be given
- the driving test
- instead of tomorrow

IIT, Delhi GATE 2012



02



If $(1.001)^{1259} = 3.52$ and $(1.001)^{2062} = 7.85$, then $(1.001)^{3321} =$

2.23

4.33

11.37

27.64

IIT, Delhi GATE 2012

03



Choose the most appropriate alternative from the options given below to complete the following sentence:

If the tired soldier wanted to lie down, he _____ the mattress out on the balcony.

- should take
- shall take
- should have taken
- will have taken

04



Choose the most appropriate word from the options given below to complete the following sentence:

Given the seriousness of the situation that he had to face, his _____ was impressive.

- beggary
- nomenclature
- jealousy
- nonchalance

IIT, Delhi GATE 2012



05



Which one of the following options is the closest in meaning to the word given below?

Latitude

- Eligibility
- Freedom
- Coercion
- Meticulousness

06



A and B are friends. They decide to meet between 1 PM and 2 PM on a given day. There is a condition that whoever arrives first will not wait for the other for more than 15 minutes. The probability that they will meet on that day is

1/4

1/16

7/16

9/16

IIT, Delhi GATE 2012



07



One of the legacies of the Roman legions was discipline. In the legions, military law prevailed and discipline was brutal. Discipline on the battlefield kept units obedient, intact and fighting, even when the odds and conditions were against them.

Which one of the following statements best sums up the meaning of the above passage?

- Thorough regimentation was the main reason for the efficiency of the Roman legions even in adverse circumstances.
- The legions were treated inhumanly as if the men were animals.
- Discipline was the armies' inheritance from their seniors.
- The harsh discipline to which the legions were subjected led to the odds and conditions being against them.



08

Raju has 14 currency notes in his pocket consisting of only Rs. 20 notes and Rs. 10 notes. The total money value of the notes is Rs. 230. The number of Rs. 10 notes that Raju has is

- 5
- 6
- 9
- 10

IIT, Delhi GATE 2012

09



There are eight bags of rice looking alike, seven of which have equal weight and one is slightly heavier. The weighing balance is of unlimited capacity. Using this balance, the minimum number of weighings required to identify the heavier bag is

- 2
- 3
- 4
- 8

10

The data given in the following table summarizes the monthly budget of an average household

Category	Amount (Rs.)
Food	4000
Clothing	1200
Rent	2000
Savings	1500
Other expenses	1800

The approximate percentage of the monthly budget NOT spent on savings is

- 10%
- 14%
- 81%
- 86%

IIT, Delhi GATE 2012



IIT, Bombay GATE 2013 - (EE)

01



They were requested not to quarrel with others.

Which one of the following options is the closest in meaning to the word **quarrel**?

- make out
- call out
- dig out
- fall out



02



In the summer of 2012, in New Delhi, the mean temperature of Monday to Wednesday was 41°C and of Tuesday to Thursday was 43°C . If the temperature on Thursday was 15% higher than that of Monday, then the temperature in $^{\circ}\text{C}$ on Thursday was

- 40
- 43
- 46
- 49

03



Complete the sentence:

Dare _____ mistakes.

- commit
- to commit
- committed
- committing

04



Which sentence of the below is grammatically most appropriate?

- Two and two add four.
- Two and two become four.
- Two and two are four.
- Two and two make four.

IIT, Bombay GATE 2013

05





Statement: You can always give me a ring whenever you need.

Which one of the following is the best inference from the above statement?

- Because I have a nice caller tune.
- Because I have a better telephone facility.
- Because a friend in need is a friend indeed.
- Because you need not pay towards the telephone bills when you give me a ring.

06



What is the chance that a leap year, selected at random, will contain 53 Saturdays?

$2/7$

$3/7$

$1/7$

$5/7$



07



Statement: There were different streams of freedom movements in colonial India carried out by the moderates, liberals, radicals, socialists, and so on.

Which one of the following is the best inference from the above statement?

- The emergence of nationalism in colonial India led to our Independence.
- Nationalism in India emerged in the context of colonialism.
- Nationalism in India is homogeneous.
- Nationalism in India is heterogeneous.



08



The set of values of p for which the roots of the equation $3x^2 + 2x + p(p-1) = 0$ are of opposite sign is

- (- ∞ , 0)
- (0, ∞)
- (1, ∞)
- (0, 1)

09



A car travels 8 km in the first quarter of an hour, 6 km in the second quarter and 16 km in the third quarter. The average speed of the car in km per hour over the entire journey is

- 30
- 36
- 40
- 24

10

Find the sum to n terms of the series $10 + 84 + 734 + \dots$

- $\frac{9(9^n+1)}{10} + 1$
- $\frac{9(9^n-1)}{8} + 1$
- $\frac{9(9^n-1)}{8} + n$
- $\frac{9(9^n-1)}{8} + n^2$



GATE EE 2014 Official Paper Shift 1 - (EE)

01



Which of the following options is the closest in meaning to the phrase underlined in the sentence below?

It is fascinating to see life forms cope with varied environmental conditions.

- adopt to
- adapt to
- adept in
- accept with

IIT, Kharagpur GATE 2014



02



Choose the most appropriate word from the options given below to complete the following sentence.

He could not understand the judges awarding her the first prize, because he thought that her performance was quite _____.

- superb
- medium
- mediocre
- exhilarating

IIT, Kharagpur GATE 2014

03



In a press meet on the recent scam, the minister said, "The buck stops here". What did the minister convey by the statement?

- He wants all the money
- He will return the money
- He will assume final responsibility
- He will resist all enquiries

IIT, Kharagpur GATE 2014

04



If $\left(z + \frac{1}{z}\right)^2 = 98$, compute $(z^4 + 1/z^2)$

IIT, Kharagpur GATE 2014



05



The roots of $ax^2 + bx + c = 0$ are real and positive. a, b and c are real. Then $ax^2 + b|x| + c = 0$ has

- no roots
- 2 real roots
- 3 real roots
- 4 real roots

IIT, Kharagpur GATE 2014

06



The Palghat Gap (or Palakkad Gap), a region about 30 km wide in the southern part of the Western Ghats in India, is lower than the hilly terrain to its north and south. The exact reasons for the formation of this gap are not clear. It results in the neighbouring regions of Tamil Nadu getting more rainfall from the South West monsoon and the neighbouring regions of Kerala having higher summer temperatures.

What can be inferred from this passage?

- The Palghat gap is caused by high rainfall and high temperatures in southern Tamil Nadu and Kerala
- The regions in Tamil Nadu and Kerala that are near the Palghat Gap are low-lying
- The low terrain of the Palghat Gap has a significant impact on weather patterns in neighbouring parts of Tamil Nadu and Kerala
- Higher summer temperatures result in higher rainfall near the Palghat Gap area



07



Geneticists say that they are very close to confirming the genetic roots of psychiatric illnesses such as depression and schizophrenia, and consequently, that doctors will be able to eradicate these diseases through early identification and gene therapy.

On which of the following assumptions does the statement above rely?

- Strategies are now available for eliminating psychiatric illnesses
- Certain psychiatric illnesses have a genetic basis
- All human diseases can be traced back to genes and how they are expressed
- In the future, genetics will become the only relevant field for identifying psychiatric illnesses

IIT, Kharagpur GATE 2014



08

Round-trip tickets to a tourist destination are eligible for a discount of 10% on the total fare. In addition, groups of 4 or more get a discount of 5% on the total fare. If the one way single person fare is Rs 100, a group of 5 tourists purchasing round-trip tickets will be charged Rs ___

IIT, Kharagpur GATE 2014

09



In a survey, 300 respondents were asked whether they own a vehicle or not. If yes, they were further asked to mention whether they own a car or scooter or both. Their responses are tabulated below. What percent of respondents do not own a scooter?

		Men	Women
Own vehicle	Car	40	34
	Scooter	30	20
	Both	60	46
	Do not own vehicle	20	50

IIT, Kharagpur GATE 2014

10



When a point inside of a tetrahedron (a solid with four triangular surfaces) is connected by straight lines to its corners, how many (new) internal planes are created with these lines? _____

IIT, Kharagpur GATE 2014



GATE EE 2014 Official Paper Shift 2 - (EE)

01



Choose the most appropriate phrase from the options given below to complete the following sentence.

India is a post-colonial country because

- it was a former British colony
- Indian Information Technology professionals have colonized the world
- India does not follow any colonial practices
- India has helped other countries gain freedom

IIT, Kharagpur GATE 2014



02



Who _____ was coming to see us this evening?

- you said
- did you say
- did you say that
- had you said

03

Match the columns.

unacademy

	Column 1		Column 2
1	Eradicate	P	Misrepresent
2	Distort	Q	Soak completely
3	Saturate	R	Use
4	Utilize	S	Destroy utterly

1 : S, 2 : P, 3 : Q, 4 : R

1 : P, 2 : Q, 3 : R, 4 : S

1 : Q, 2 : R, 3 : S, 4 : P

1 : S, 2 : P, 3 : R, 4 : Q

IIT, Kharagpur GATE 2014

04



What is the average of all multiples of 10 from 2 to 198?

90

100

110

120

IIT, Kharagpur GATE 2014



05

The value of $\sqrt{12 + \sqrt{12 + \sqrt{12 + \dots}}}$ is

- 3.464
- 3.932
- 4.000
- 4.444

IIT, Kharagpur GATE 2014

06



The old city of Koenigsberg, which had a German majority population before World War 2, is now called Kaliningrad. After the events of the war, Kaliningrad is now a Russian territory and has a Predominantly Russian population. It is bordered by the Baltic Sea on the north and the countries of Poland to the south and west and Lithuania to the east respectively.

Which of the statements below can be inferred from this passage?

- Kaliningrad was historically Russian in its ethnic make up
- Kaliningrad is a part of Russia despite it not being contiguous with the rest of Russia
- Koenigsberg was renamed Kaliningrad, as that was its original Russian name
- Poland and Lithuania are on the route from Kaliningrad to the rest of Russia



07



The number of people diagnosed with dengue fever (contracted from the bite of a mosquito) in north India is twice the number diagnosed last year. Municipal authorities have concluded that measures to control the mosquito population have failed in this region.

Which one of the following statements, if true, does not contradict this conclusion?

- A high proportion of the affected population has returned from neighbouring countries where dengue is prevalent
- More cases of dengue are now reported because of an increase in the Municipal Office's administrative efficiency
- Many more cases of dengue are being diagnosed this year since the introduction of a new and effective diagnostic test
- The number of people with malarial fever (also contracted from mosquito bites) has increased this year



08



If x is real and $|x^2 - 2x + 3| = 11$, then possible values of $|-x^3 + x^2 - x|$ include

- 2, 4
- 2, 14
- 4, 52
- 14, 52

IIT, Kharagpur GATE 2014

09

10



At what time between 6 a.m. and 7 a.m. will the minute hand and hour hand of a clock make an angle closest to 60° ?

- 6 : 22 a.m.
- 6 : 27 a.m.
- 6 : 38 a.m.
- 6 : 45 a.m.

IIT, Kharagpur GATE 2014



GATE EE 2014 Official Paper Shift 3 - (EE)

01



While trying to collect (I) an envelope from under the table (II), Mr. X fell down and (III) was losing consciousness (IV)

Which one of the above-underlined parts of the sentence is NOT appropriate?

- I
- II
- III
- IV

IIT, Kharagpur GATE 2014



02



If she _____ how to calibrate the instrument, she _____ done the experiment.

- knows, will have
- knew, had
- had known, could have
- should have known, would have

03



Choose the word that is opposite in meaning to the word “coherent”.

- Sticky
- Well-connected
- Rambling
- Friendly

IIT, Kharagpur GATE 2014

04



Which number does not belong in the series below?

2, 5, 10, 17, 26, 37, 50, 64

17

37

64

26

IIT, Kharagpur GATE 2014

05



The table below has question-wise data on the performance of students in an examination. The marks for each question are also listed. There is no negative or partial marking in the examination.

Q No.	Marks	Answered Correctly	Answered Wrongly	Not Attempted
1	2	21	17	6
2	3	15	27	2
3	2	23	18	3

What is the average of the marks obtained by the class in the examination?

1.34

1.74

3.02

3.91

IIT, Kharagpur GATE 2014

06



A dance programme is scheduled for 10.00 a.m. Some students are participating in the programme and they need to come an hour earlier than the start of the event. These students should be accompanied by a parent. Other students and parents should come in time for the programme. The instruction you think that is appropriate for this is

- Students should come at 9.00 a.m. and parents should come at 10.00 a.m.
- Participating students should come at 9.00 a.m. accompanied by a parent, and other parents and students should come by 10.00 a.m.
- Students who are not participating should come by 10.00 a.m. and they should not bring their parents. Participating students should come at 9.00 a.m.
- Participating students should come before 9.00 a.m. Parents who accompany them should come at 9.00 a.m. All others should come at 10.00 a.m.



07



By the beginning of the 20th century, several hypotheses were being proposed, suggesting a paradigm shift in our understanding of the universe. However, the clinching evidence was provided by experimental measurements of the position of a star which was directly behind our sun.

Which of the following inference(s) may be drawn from the above passage?

- (i) Our understanding of the universe changes based on the positions of stars
 - (ii) Paradigm shifts usually occur at the beginning of centuries
 - (iii) Stars are important objects in the universe
 - (iv) Experimental evidence was important in confirming this paradigm shift
-
- (i), (ii) and (iv)
 - (iii) only
 - (i) and (iv)



08



The Gross Domestic Product (GDP) in Rupees grew at 7% during 2012-2013. For international comparison, the GDP is compared in US Dollars (USD) after conversion based on the market exchange rate. During the period 2012-2013 the exchange rate for the USD increased from Rs. 50/ USD to Rs. 60/ USD. India's GDP in USD during the period 2012-2013

- increased by 5%
- increased by 13%
- decreased by 20%
- decreased by 11%

IIT, Kharagpur GATE 2014

09

10



Equation: $(7526)_8 - (Y)_8 = (4364)_8$, where $(X)_N$ stands for X to the base N. Find Y.

1634

1737

3142

3162

IIT, Kharagpur GATE 2014



GATE EE 2015 Official Paper Shift 1 - (EE)

01



Which of the following options is the closest in meaning to the sentence below?

She enjoyed herself immensely at the party.

- She had a terrible time at the party.
- She had a horrible time at the party.
- She had a terrific time at the party.
- She had a terrifying time at the party.



02



Given Set $A = \{2, 3, 4, 5\}$ and Set $B = \{11, 12, 13, 14, 15\}$, two numbers are randomly selected, one from each set. What is the probability that the sum of the two numbers equals 16?

- 0.20
- 0.25
- 0.30
- 0.33

03



Didn't you buy _____ when you went shopping?

- any paper
- much paper
- no paper
- a few paper

04



Based on the given statements, select the most appropriate option to solve the given question. If two floors in a certain building are 9 feet apart, how many steps are there in a set of stairs that extends from the first floor to the second floor of the building?

Statements:

- I. Each step is $\frac{3}{4}$ foot high.
- II. Each step is 1 foot wide.

- Statement I alone is sufficient, but statement II alone is not sufficient.
- Statement II alone is sufficient, but statement I alone is not sufficient.
- Both statements together are sufficient, but neither statement alone is sufficient.
- Statement I and II together are not sufficient.

05





Which one of the following combinations is incorrect?

- Acquiescence – Submission
- Wheedle – Roundabout
- Flippancy – Lightness
- Profligate – Extravagant

06



Select the alternative meaning of the underlined part of the sentence.

The chain snatchers took to their heels when the police party arrived.

- Took shelter in a thick jungle
- Open indiscriminate fire
- Took to flight
- Unconditionally surrendered



07



08



The probabilities that a student passes in Mathematics, Physics and Chemistry are m , p and c respectively. Of these subjects, the student has 75% chance of passing in at least one, a 50% chance of passing in at least two and a 40% chance of passing in exactly two.

Following relations are drawn in m , p , c :

- I. $p + m + c = 27/20$
- II. $p + m + c = 13/20$
- III. $(p) \times (m) \times (c) = 1/10$

- Only relation I is true
- Only relation II is true
- Relations II and III are true
- Relations I and III are true

09

The number of students in a class who have answered correctly, wrongly, or not attempted each question in an exam, are listed in the table below. The marks for each question are also listed. There is no negative or partial marking.

Q.No.	Marks	Answered Correctly	Answered Wrongly	Not attempted
1	2	21	17	6
2	3	15	27	2
3	1	11	29	4
4	2	23	18	3
5	5	31	12	1

What is the average of the marks obtained by the class in the examination?

- 2.290
- 2.970
- 6.795
- 8.795

10



The given statement is followed by some courses of action. Assuming the statement to be true decide the correct option.

Statement:

There has been a significant drop in the water level in the lakes supplying water to the city.

- I. The water supply authority should impose a partial cut in supply to tackle the situation.
 - II. The government should appeal to all the residents through mass media for minimal use of water.
 - III. The government should ban the water supply in lower areas.
-
- Statements I and II follow.
 - Statements I and III follow.
 - Statements II and III follow.
 - All statements follow.



GATE EE 2015 Official Paper Shift 2 - (EE)

01



Consider a function $f(x) = 1 - |x|$ in $-1 \leq x \leq 1$. The value of x at which the function attains a maximum, and the maximum value of the function are:

- 0, -1
- 1, 0
- 0, 1
- 1, 2



02



Choose the statement where the underlined word is used correctly.

- The industrialist had a personnel jet.
- I write my experience in my personnel diary.
- All personnel are being given the day off.
- Being religious is a personnel aspect.

03

A generic term that includes various items of clothing such as a skirt, a pair of trousers and a shirt is

- fabric
- textile
- fibre
- apparel

04

Based on the given statements, select the most appropriate option to solve the given question. What will be the total weight of 10 poles each of same weight?

Statements:

- (I) One fourth of the weight of a pole is 5Kg
- (II) The total weight of these poles is 160kg more than the total weight of two poles.

- Statement I alone is not sufficient.
- Statement II alone is not sufficient.
- Either I or II alone is sufficient.
- Both statement I and II together are not sufficient.

IIT, Kanpur GATE 2015

05





We _____ our friend's birthday and we _____ how to make it up to him.

- completely forgot --- don't just know
- forgot completely --- don't just know
- completely forgot --- just don't know
- forgot completely --- just don't know

06



If p, q, r, s are distinct integers such that:

$$f(p, q, r, s) = \max(p, q, r, s)$$

$$g(p, q, r, s) = \min(p, q, r, s)$$

$$h(p, q, r, s) = \text{remainder of } \frac{p \times q}{r \times s} \text{ if } (p \times q) > (r \times s)$$

$$(\text{or}) \text{ remainder of } \frac{r \times s}{p \times q} \text{ if } (r \times s) > (p \times q)$$

Also a function $fgh(p, q, r, s) = f(p, q, r, s) \times g(p, q, r, s) \times h(p, q, r, s)$

Also the same operations are valid with two variable function of the form $f(p, q)$.

What is the value of $fg(h(2, 5, 7, 3), 4, 6, 8)$?



07



Four branches of a company are located at M,N,O, and P. M is north of N at a distance of 4km; P is south of O at a distance of 2km; N is southeast of O by 1km. What is the distance between M and P in km?

- 5.34
- 6.74
- 28.5
- 45.49



08



Out of the following four sentences, select the most suitable sentence with respect to grammar and usage:

- Since the report lacked the needed information, it was of no use to them.
- The report was useless to them because there were no needed information in it.
- Since the report did not contain the needed information, it was not real useful to them.
- Since the report lacked needed information, it would not had been useful to them.

09

10



If the list of letters, P, R, S, T, U is an arithmetic sequence, which of the following are also in arithmetic sequence?

- I. $2P, 2R, 2S, 2T, 2U$
- II. $P - 3, R - 3, S - 3, T - 3, U - 3$
- III. P^2, R^2, S^2, T^2, U^2

I only

I and II

II and III

I and III



GATE EE 2016 Official Paper Shift 1 - (EE)

01





The man who is now Municipal Commissioner worked as _____.

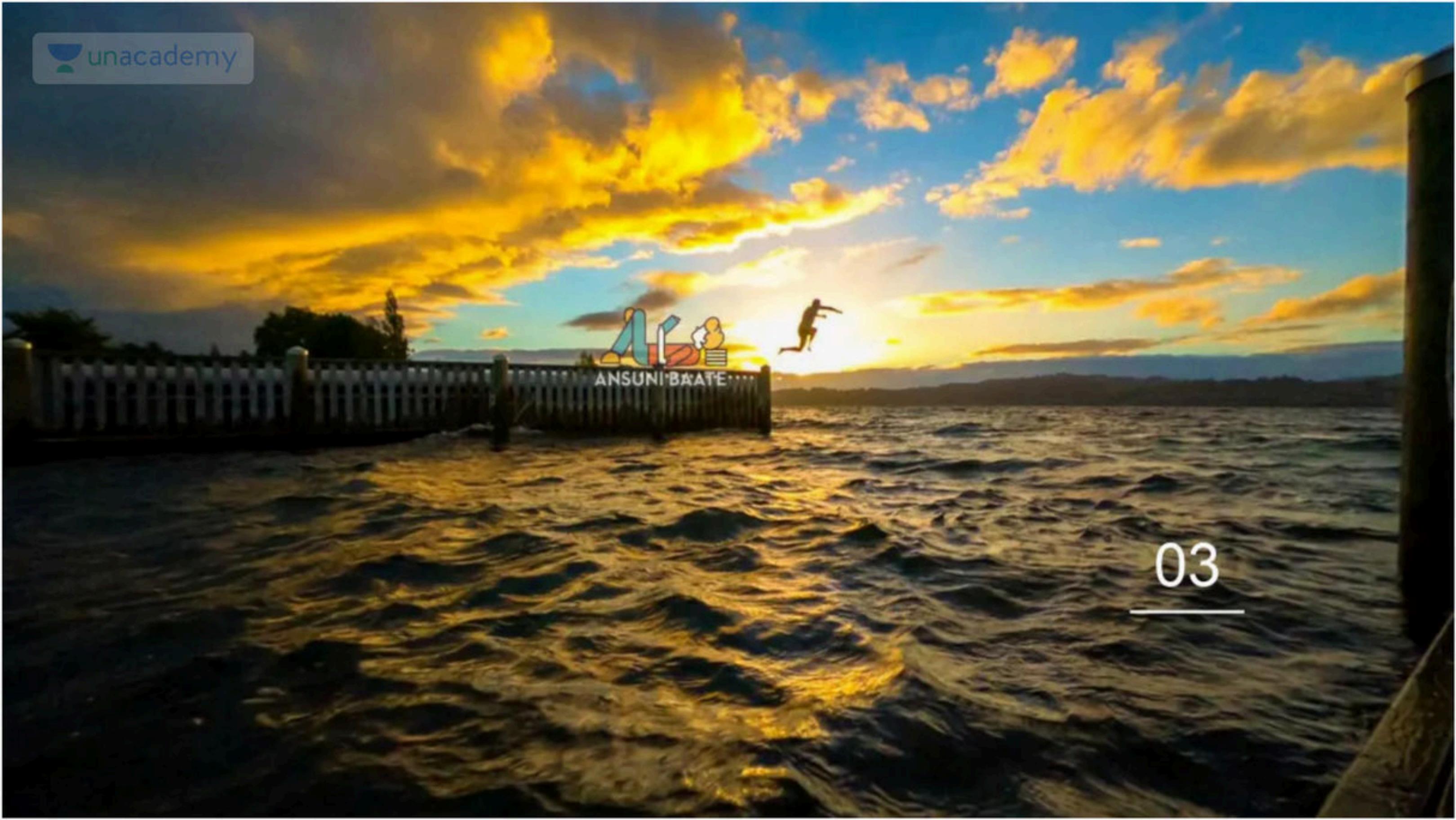
- the security guard at a university
- a security guard at the university
- a security guard at university
- the security guard at the university

02



Nobody knows how the Indian cricket team is going to cope with the difficult and seamer-friendly wickets in Australia. Choose the option which is closest in meaning to the underlined phrase in the above sentence.

- put up with
- put in with
- put down to
- put up against

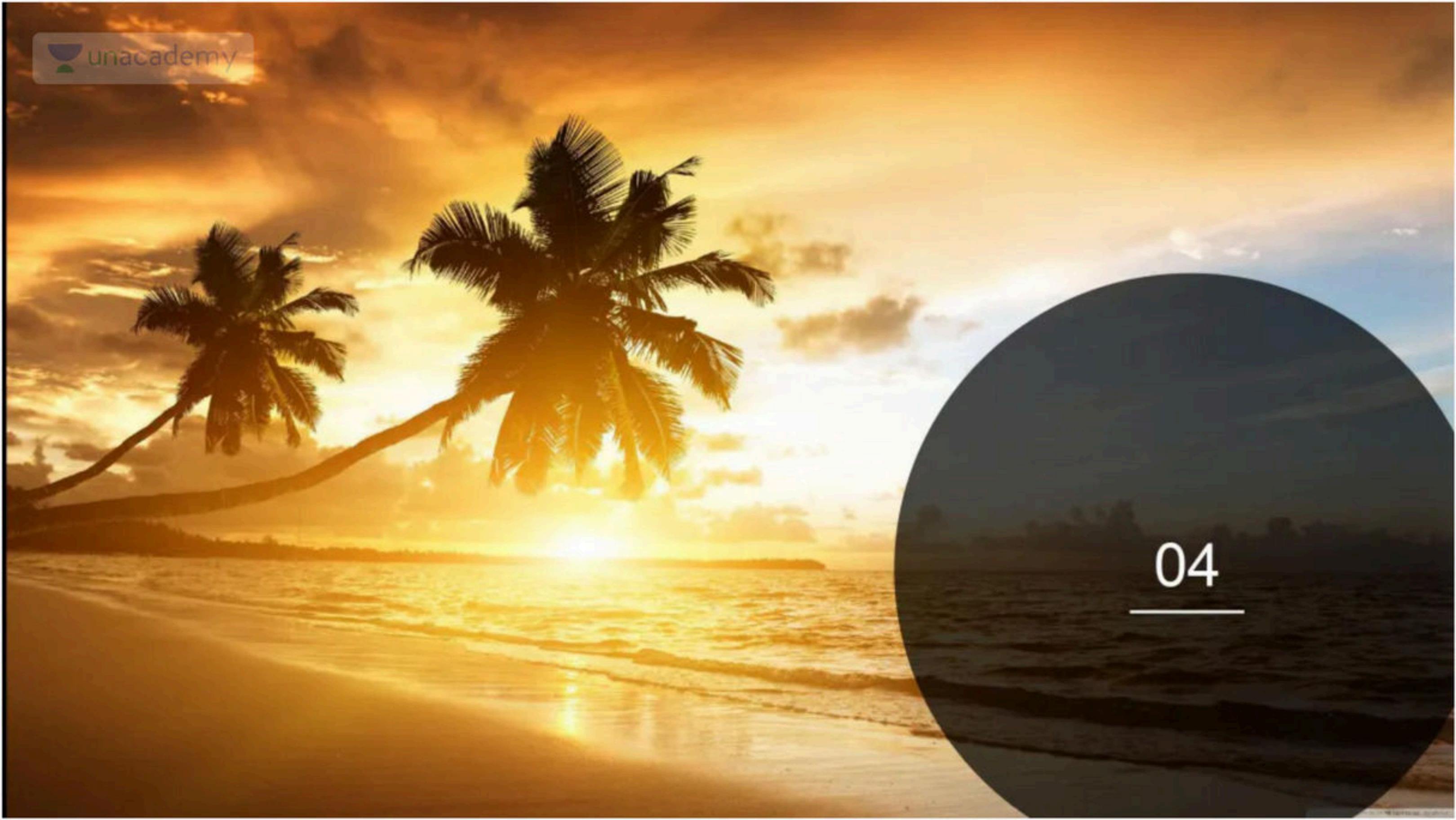


03



Find the odd one in the following group of words. mock, deride, praise, jeer

- mock
- deride
- praise
- jeer



04



Pick the odd one from the following options.

- CADBE
- JHKIL
- XZYWZ
- ONPMQ



05



In a quadratic function, the value of the product of the roots (α, β) is 4. Find the value of

$$\frac{\alpha^n + \beta^n}{\alpha^{-n} + \beta^{-n}}$$

n^4

4^n

2^{2n-1}

4^{n-1}

06





Among 150 faculty members in an institute, 55 are connected with each other through Facebook and 85 are connected through WhatsApp. 30 faculty members do not have Facebook or WhatsApp accounts. The number of faculty members connected only through Facebook accounts is _____.

- 35
- 45
- 65
- 90

07



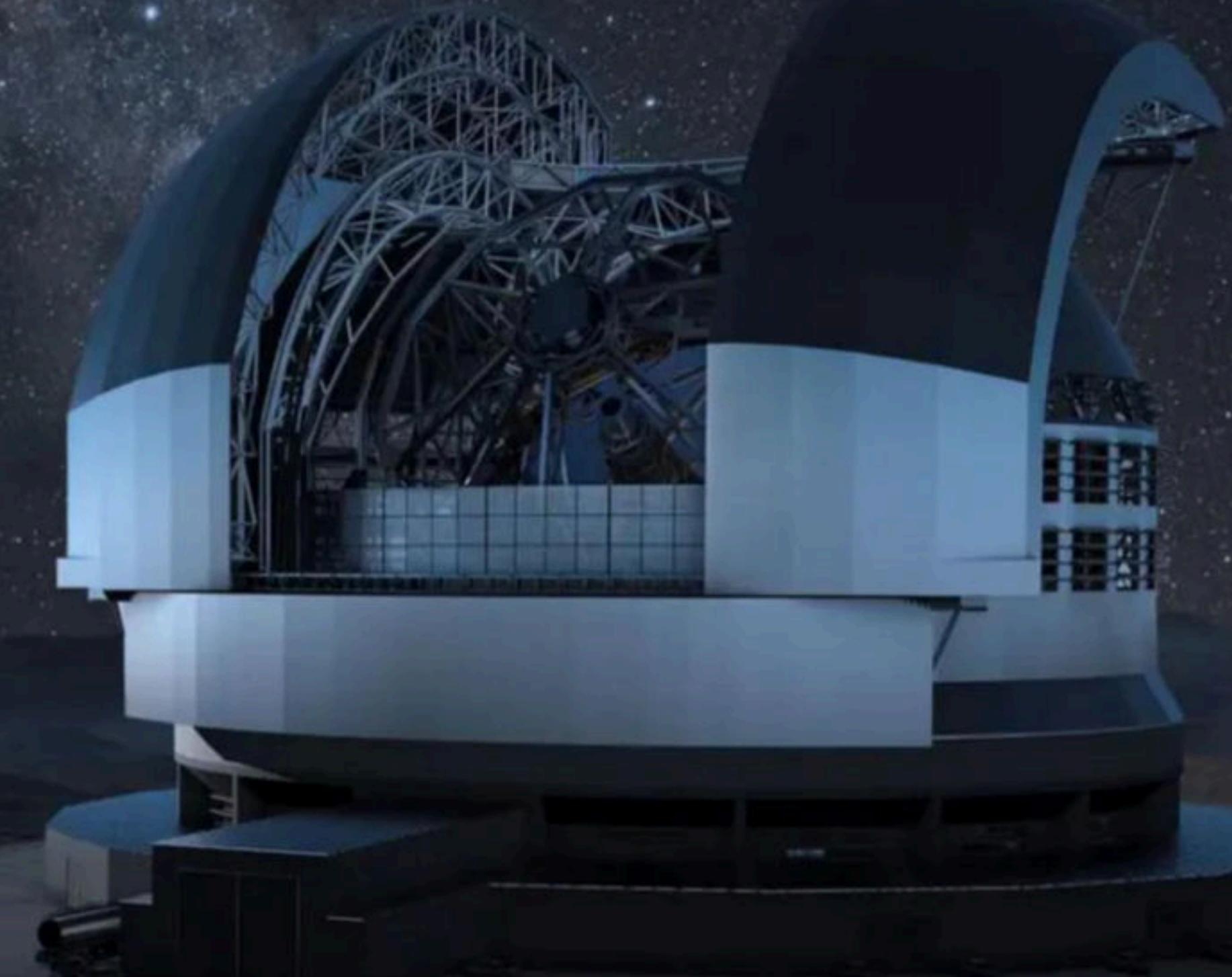


Computers were invented for performing only high-end useful computations. However, it is no understatement that they have taken over our world today. The internet, for example, is ubiquitous. Many believe that the internet itself is an unintended consequence of the original invention. With the advent of mobile computing on our phones, a whole new dimension is now enabled. One is left wondering if all these developments are good or, more importantly, required.

Which of the statement(s) below is/are logically valid and can be inferred from the above paragraph?

- (i) The author believes that computers are not good for us.
 - (ii) Mobile computers and the internet are both intended inventions
-
- (i) only
 - (ii) only
 - both (i) and (ii)
 - neither (i) nor (ii)

08





All hill-stations have a lake. Ooty has two lakes.

Which of the statement(s) below is/are logically valid and can be inferred from the above sentences?

(i) Ooty is not a hill-station.

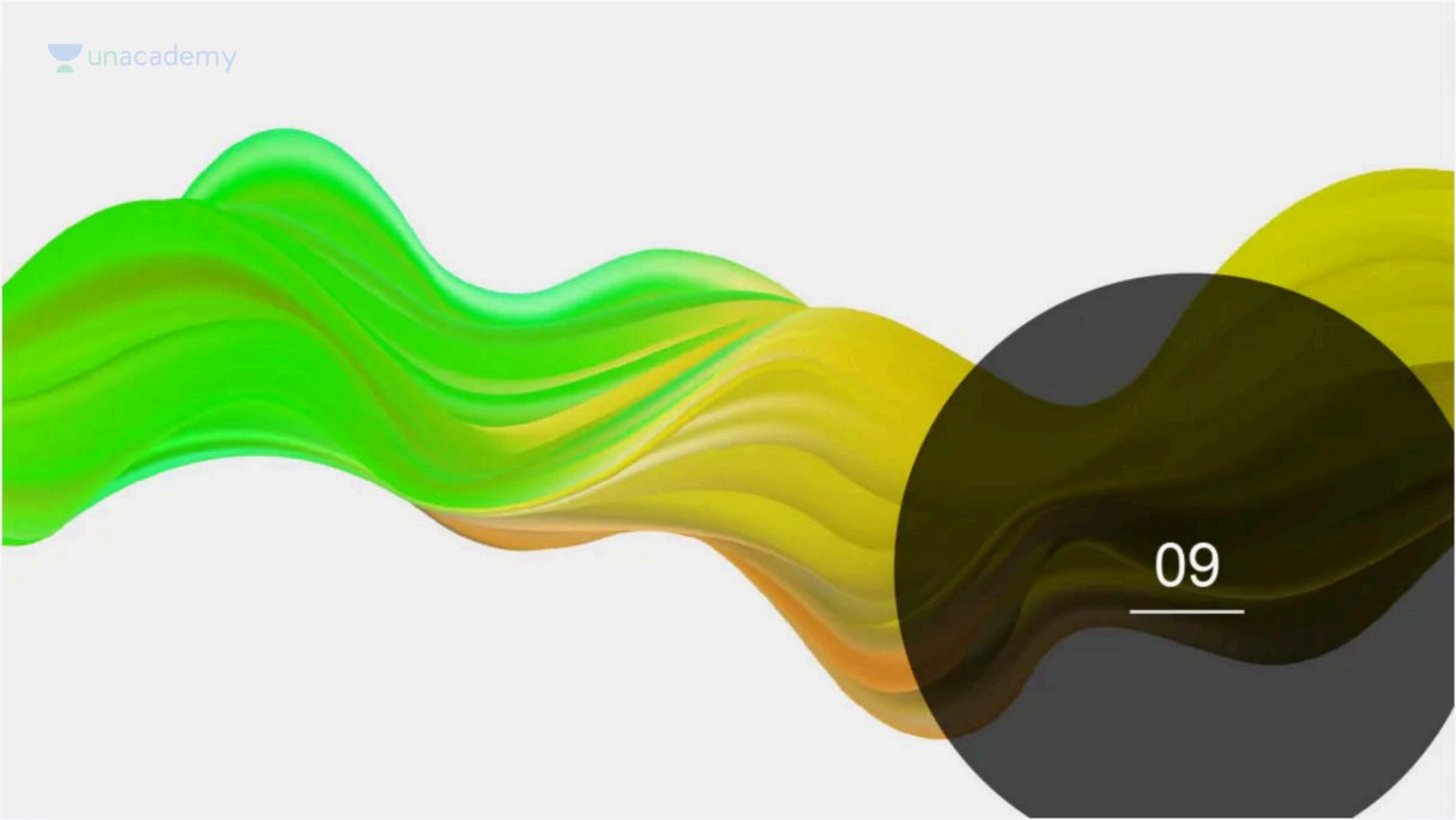
(ii) No hill-station can have more than one lake.

(i) only

(ii) only

both (i) and (ii)

neither (i) nor (ii)



09

10



GATE EE 2016 Official Paper Shift 2 - (EE)





The chairman requested the aggrieved shareholders to _____ him.

- bare with
- bore with
- bear with
- bare

02





Identify the correct spelling out of the given options:

- Managable
- Manageable
- Mangaeble
- Managible

A landscape painting depicting a serene sunset over a body of water. A large, luminous sun is positioned behind a cluster of pink and white clouds, casting a warm glow across the sky. Numerous small birds are scattered throughout the scene, some in flight against the bright sky and others silhouetted against the horizon. In the foreground, a small wooden boat with two figures is visible on the left, and another boat with several figures is on the right. Distant, hazy mountains are visible on the horizon.

03



Pick the odd one out in the following:

13, 23, 33, 43, 53

23

33

43

53



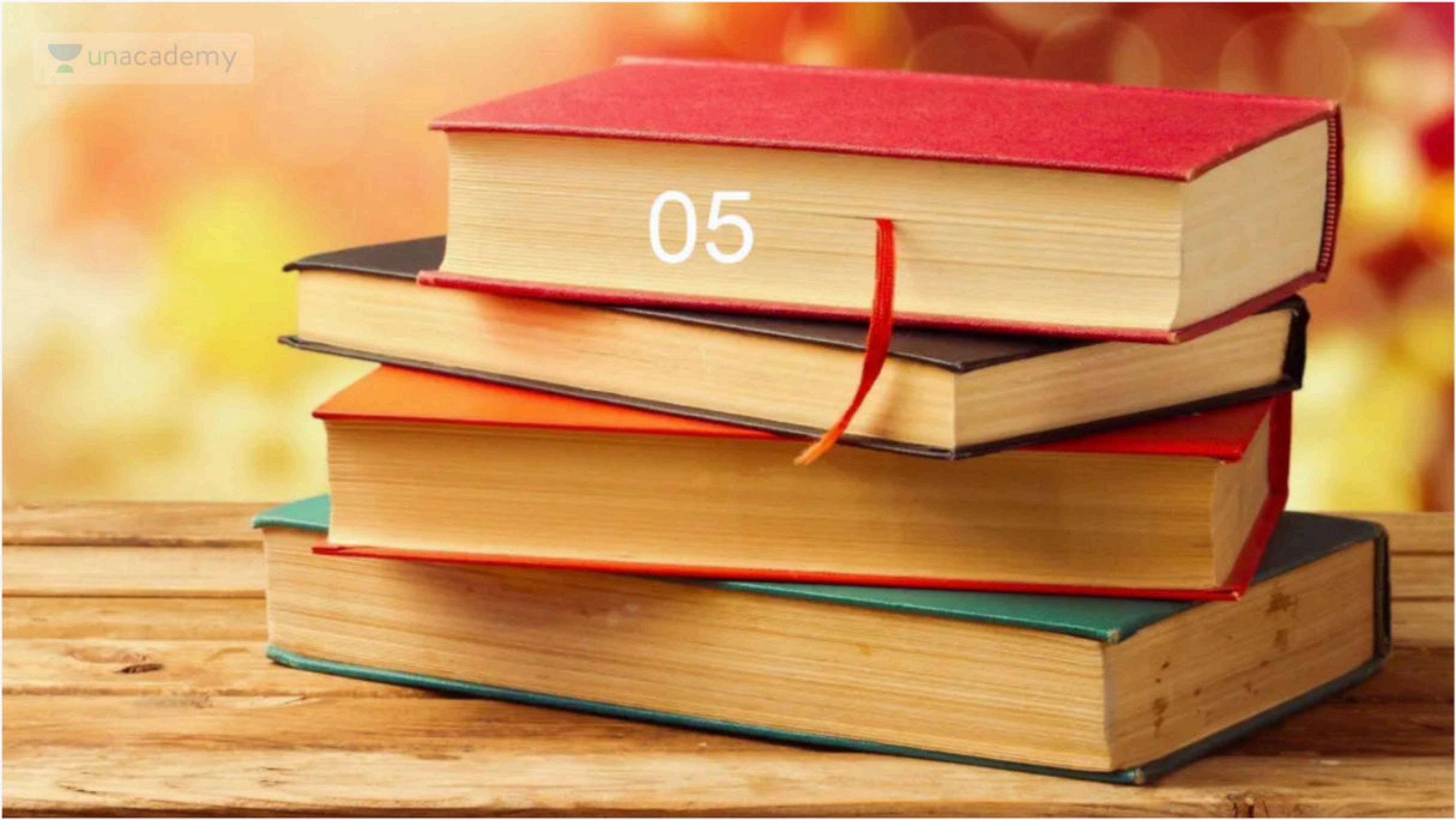
04



R2D2 is a robot. R2D2 can repair aeroplanes. No other robot can repair aeroplanes.

Which of the following can be logically inferred from the above statements?

- R2D2 is a robot which can only repair aeroplanes.
- R2D2 is the only robot which can repair aeroplanes.
- R2D2 is a robot which can repair only aeroplanes.
- Only R2D2 is a robot.



05



If $|9y-6| = 3$, then $y^2 - 4y/3$ is.

- 0
- +1/3
- 1/3
- undefined

06



07





A poll of students appearing for masters in engineering indicated that 60 % of the students believed that mechanical engineering is a profession unsuitable for women. A research study on women with masters or higher degrees in mechanical engineering found that 99 % of such women were successful in their professions.

Which of the following can be logically inferred from the above paragraph?

- Many students have misconceptions regarding various engineering disciplines.
- Men with advanced degrees in mechanical engineering believe women are well suited to be mechanical engineers.
- Mechanical engineering is a profession well suited for women with masters or higher degrees in mechanical engineering.
- The number of women pursuing higher degrees in mechanical engineering is small.



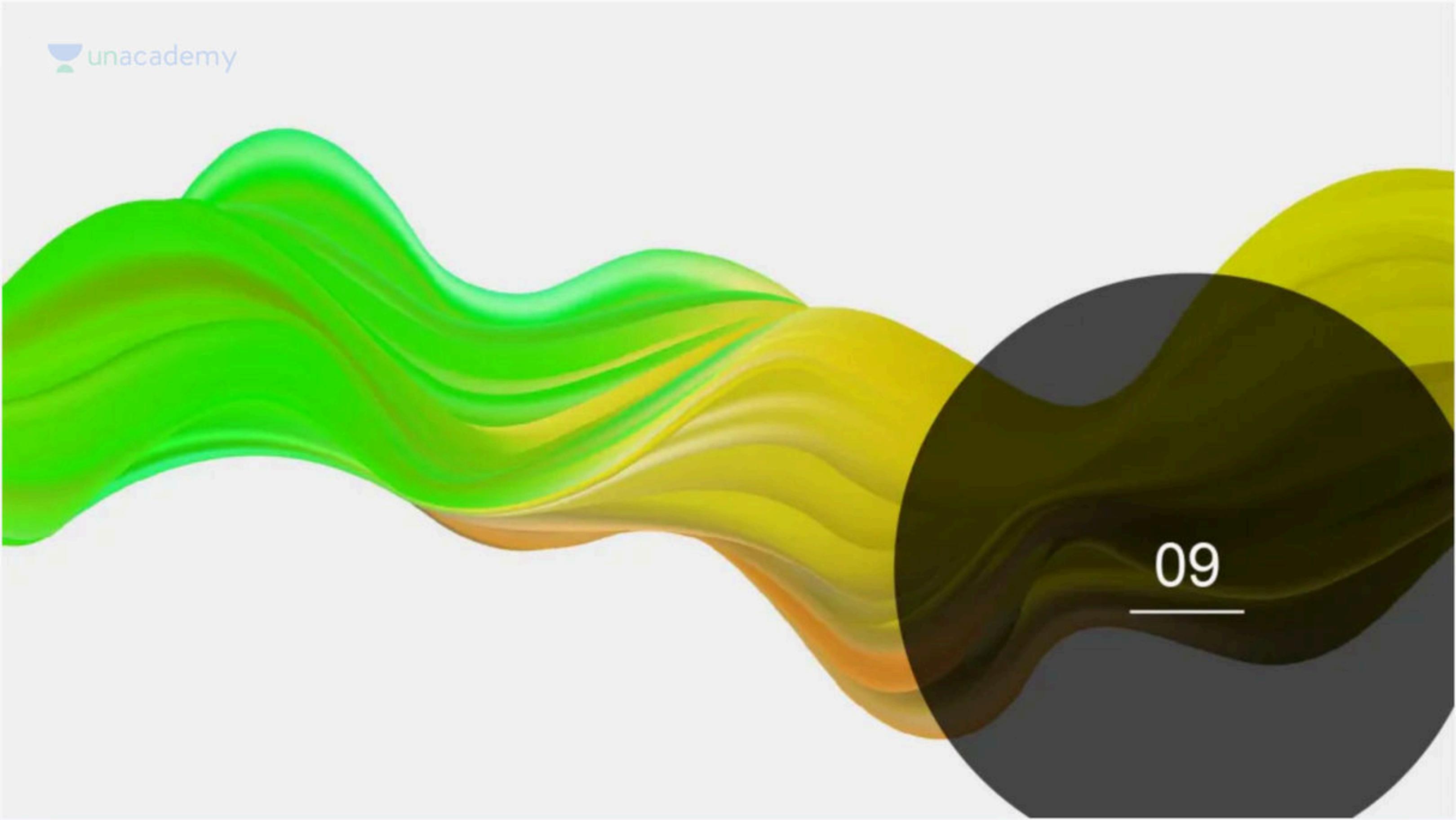
Sourya committee had proposed the establishment of Sourya Institutes of Technology (SITs) in line with Indian Institutes of Technology (IITs) to cater to the technological and industrial needs of a developing country.

Which of the following can be logically inferred from the above sentence?

Based on the proposal,

- (i) In the initial years, SIT students will get degrees from IIT.
- (ii) SITs will have a distinct national objective.
- (iii) SIT like institutions can only be established in consultation with IIT.
- (iv) SITs will serve technological needs of a developing country.

- (iii) and (iv) only.
- (i) and (iv) only.
- (ii) and (iv) only.
- (ii) and (iii) only.



09



Shaquille O' Neal is a 60% career free throw shooter, meaning that he successfully makes 60 free throws out of 100 attempts on average. What is the probability that he will successfully make exactly 6 free throws in 10 attempts?

- 0.2508
- 0.2816
- 0.2934
- 0.6000





The numeral in the units position of $211^{870} + 146^{127} \times 3^{424}$ is _____.



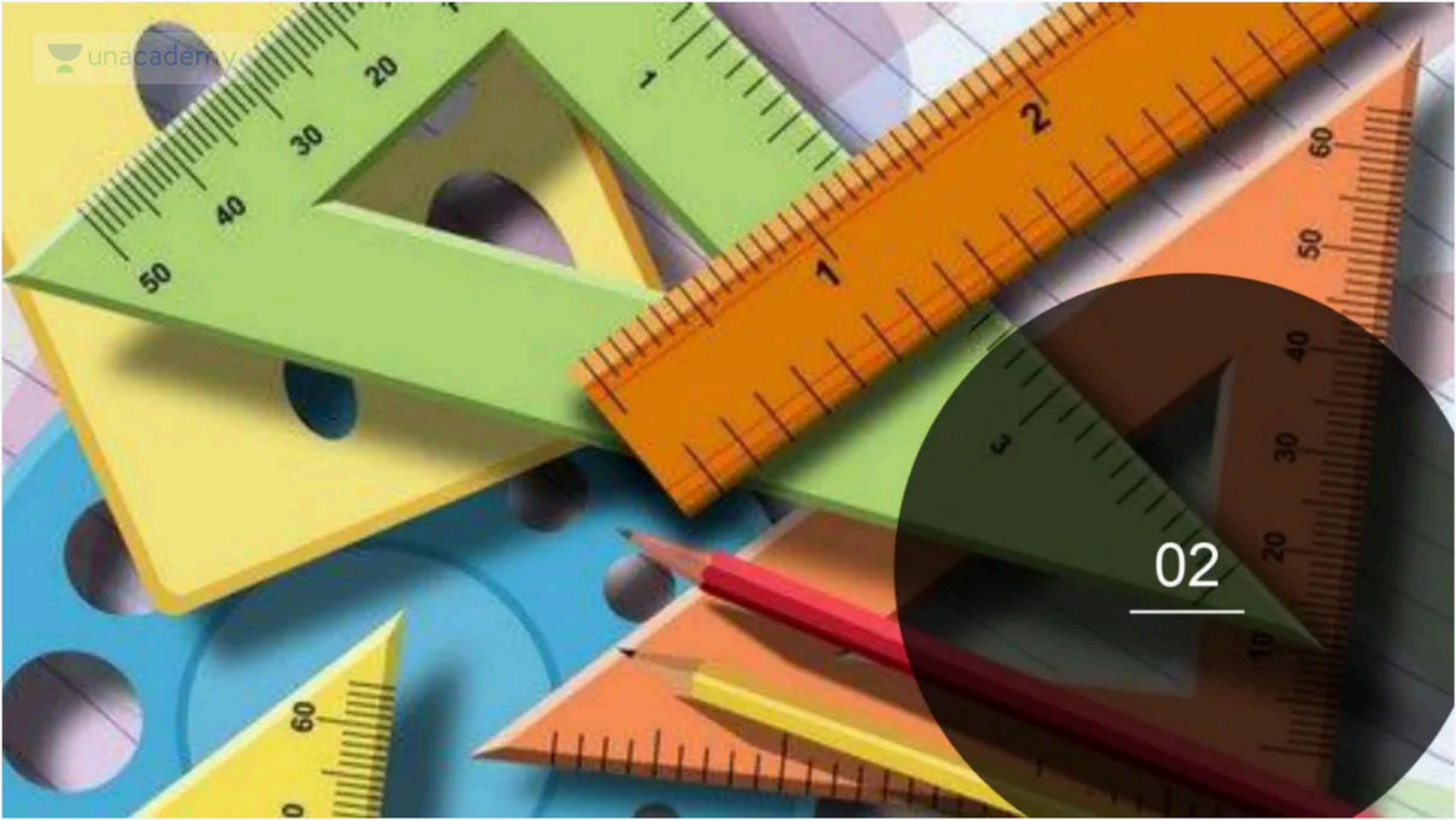
GATE EE 2017 Official Paper Shift 1 - (EE)

01



After Rajendra Chola returned from his voyage to Indonesia, he _____ to visit the temple in Thanjavur.

- Was wishing
- Is wishing
- Wished
- Had wished





Research in the workplace reveals that people work for many reasons _____.

- Money beside
- Beside money
- Money besides
- Besides money

03





Rahul, Murali, Srinivas and Arul are seated around a square table. Rahul is sitting to the left of Murali. Srinivas is sitting to the right of Arul. Which of the following pairs are seated opposite each other?

- Rahul and Murali
- Srinivas and Anil
- Srinivas and Murali
- Srinivas and Rahul

04



Find the smallest number y such that $y \times 162$ is a perfect cube.

24

27

32

36

05





The probability that a k-digit number does NOT contain the digits 0, 5, or 9 is

- 0.3^k
- 0.6^k
- 0.7^k
- 0.9^k

06



"The hold of the nationalist imagination on our colonial past is such that anything inadequately or improperly nationalist is just not history."

Which of the following statements best reflects the author's opinion?

- Nationalists are highly imaginative
- History is viewed through the filter of nationalism
- Our colonial past never happened
- Nationalism has to be both adequately and properly imagined

07



Six people are seated around a circular table. There are at least two men and two women. There are at least three right-handed persons. Every woman has a left-handed person to her immediate right. None of the women are right-handed. The number of women at the table is

- 2
- 3
- 4
- Cannot be determined

08

The expression $\frac{(x+y)-|x-y|}{2}$ is equal to

- the maximum of x and y
- the minimum of x and y
- 2
- none of the above



09



Arun, Gulab, Neel and Shweta must choose one shirt each from a pile of four shirts coloured red, pink, blue and white respectively. Arun dislikes the colour red and Shweta dislikes the colour white, Gulab and Neel like all the colours. In how many different ways can they choose the shirts so that no one has a shirt with a colour he or she dislikes?

21

18

16

14

10





GATE EE 2018 Official Paper - (EE)

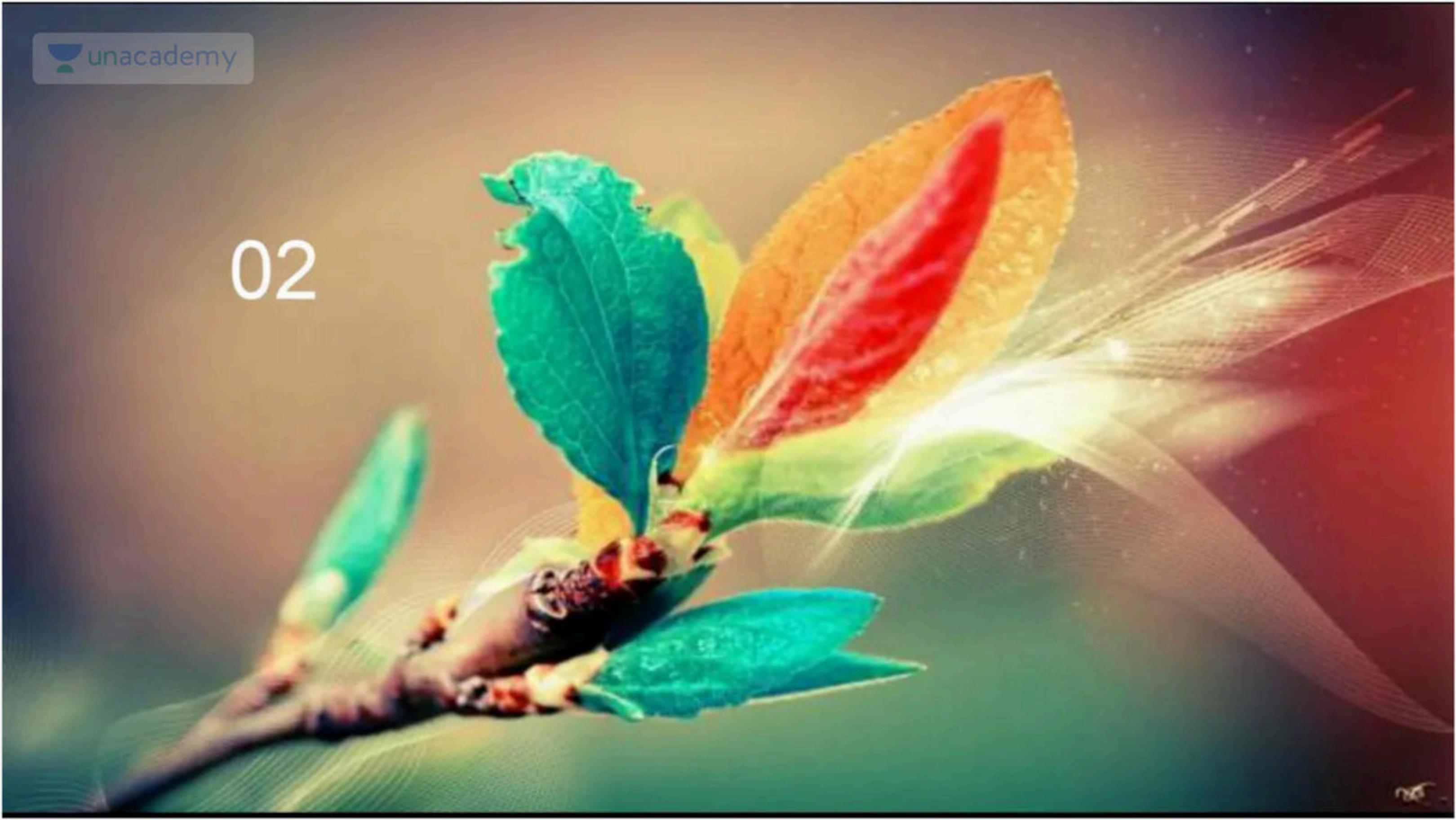
01

"Since you have gone off the _____, the _____ sand is likely to damage the car."

The words that best fill the blanks in the above sentence are

- course, coarse
- course, course
- coarse, course
- coarse, coarse

02





"A common misconception among writers is that sentence structure mirrors thought; the more _____ the structure, the more complicated the ideas."

The word that best fills the blank in the above sentence is

- detailed
- simple
- clear
- convoluted



03



The three roots of the equation $f(x) = 0$ are $x = \{-2, 0, 3\}$. What are the three values of x for which $f(x - 3) = 0$?

- 5, -3, 0
- 2, 0, 3
- 0, 6, 8
- 1, 3, 6



04

For what value of k given below is $\frac{(k+2)^2}{k-3}$ an integer?

- 4, 8, 18
- 4, 10, 16
- 4, 8, 28
- 8, 26, 28



05

Functions $F(a, b)$ and $G(a, b)$ are defined as follows:

$F(a, b) = (a - b)^2$ and $G(a, b) = |a - b|$, where $|x|$ represents the absolute value of x .

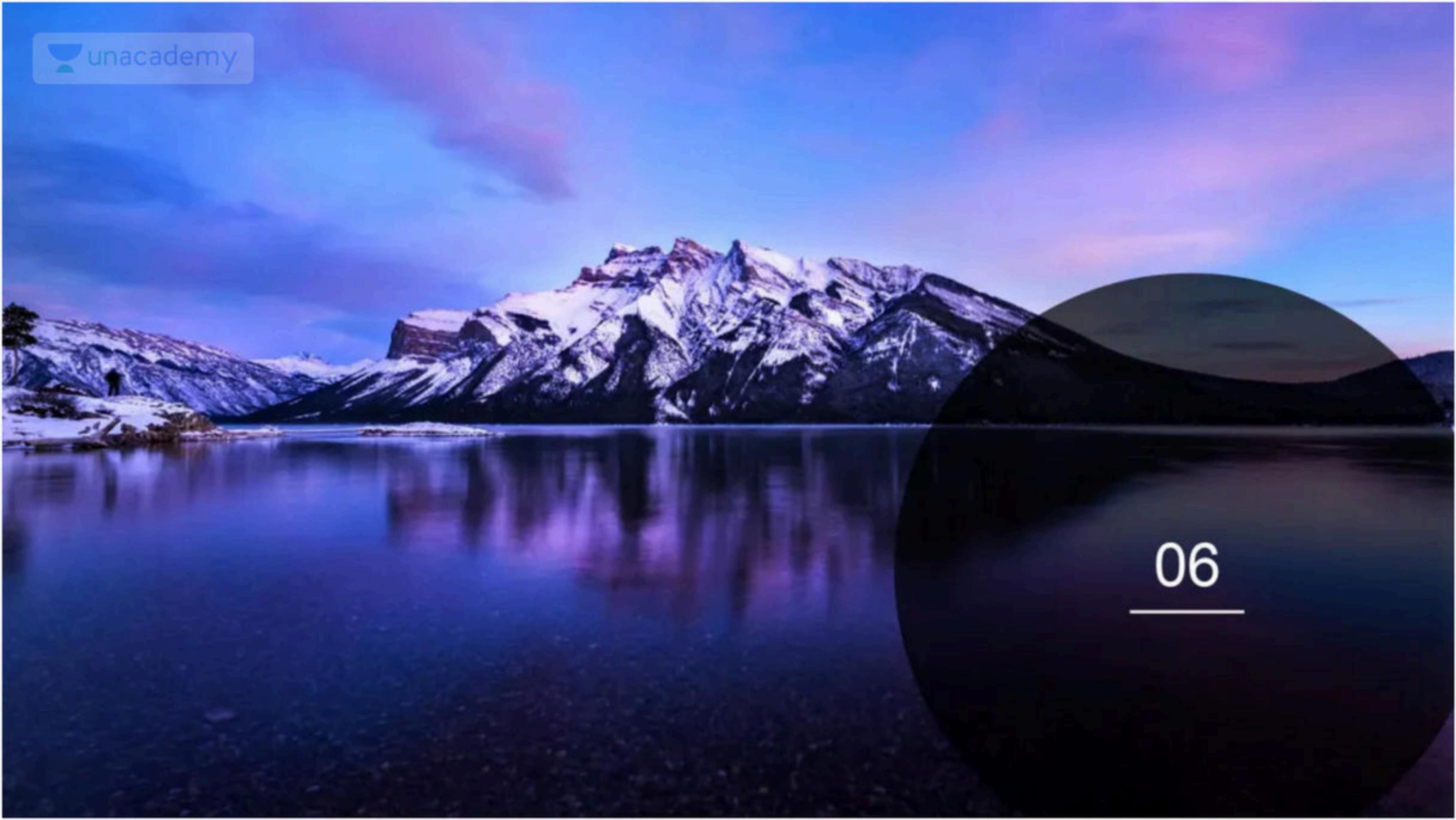
What would be the value of $G(F(1, 3), G(1, 3))$?

2

4

6

36



06



An e-mail password must contain three characters. The password has to contain one numeral from 0 to 9, one upper case and one lower case character from the English alphabet. How many distinct passwords are possible?

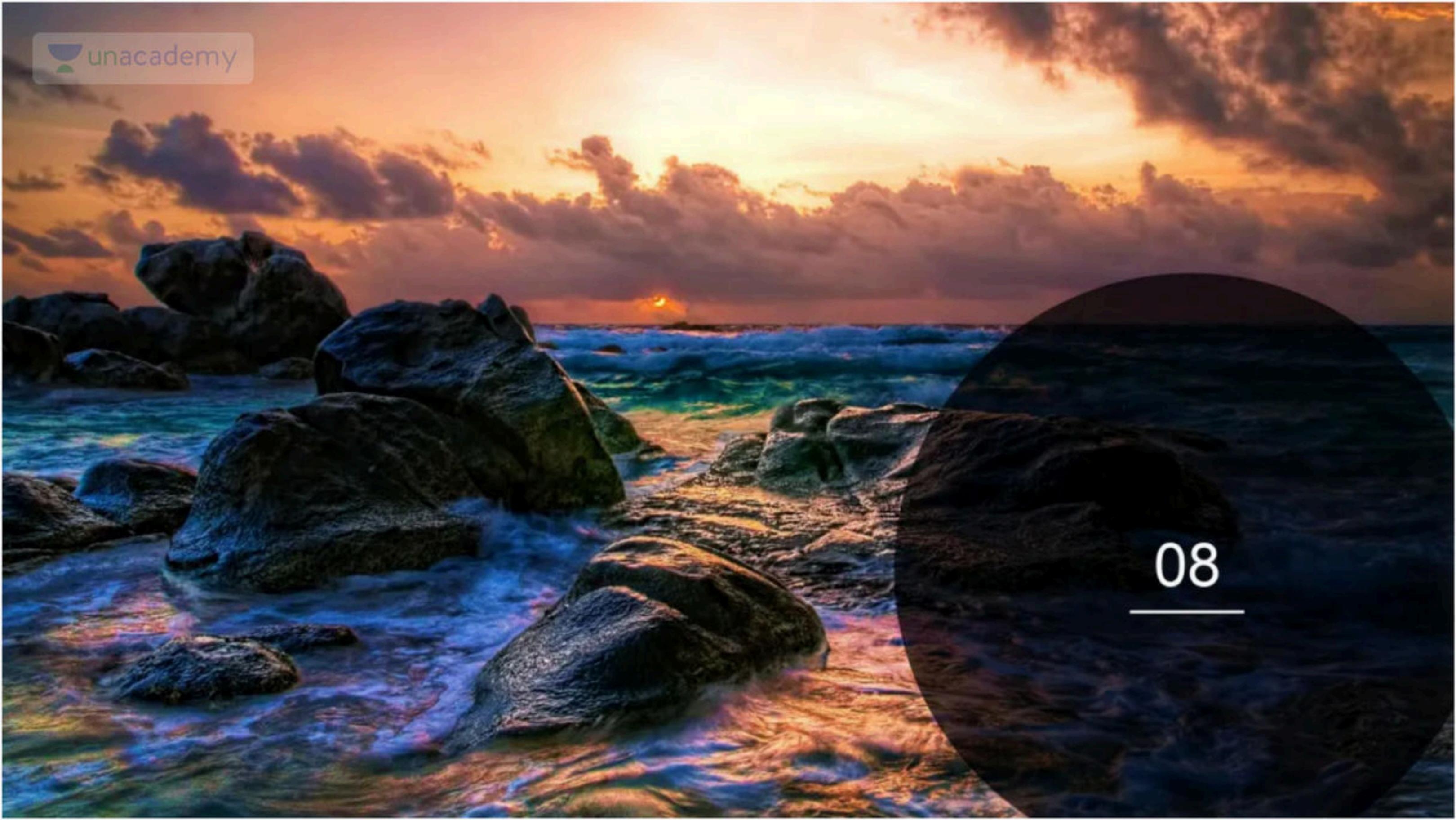
- 6,760
- 13,520
- 40,560
- 1,05,456





In a certain code, AMCF is written as EQGJ and NKUF is written as ROYJ. How will DHLP be written in that code?

- RSTN
- TLPH
- HLPT
- XSVR



08



A class of twelve children has two more boys than girls. A group of three children are randomly picked from this class to accompany the teacher on a field trip. What is the probability that the group accompanying the teacher contains more girls than boys?

$\frac{4}{11}$

$\frac{325}{864}$

$\frac{525}{864}$

$\frac{5}{12}$



09



A designer uses marbles of four different colours for his designs. The cost of each marble is the same, irrespective of the colour. The table below shows the percentage of marbles of each colour used in the current design. The cost of each marble increased by 25%. Therefore, the designer decided to reduce equal numbers of marbles of each colour to keep the total cost unchanged. What is the percentage of blue marbles in the new design?

Blue	Black	Red	Yellow
40%	25%	20%	15%

- 35.75
- 40.25
- 43.75
- 46.25

10



P, Q, R and S crossed a lake in a boat that can hold a maximum of two persons, with only one set of oars. The following additional facts are available.

- (I) The boat held two persons on each of the three forward trips across the lake and one person on each of the two return trips.
- (II) P is unable to row when someone else is in the boat.
- (III) Q is unable to row with anyone else except R.
- (IV) Each person rowed for at least one trip.
- (V) Only one person can row during a trip.

Who rowed twice?

- P
- Q
- R
- S



GATE EE 2019 Official Paper - (EE)

01



I am not sure if the bus that has been booked will be able to _____ all the students.

- sit
- deteriorate
- fill
- accommodate



02



The passengers were angry _____ the airline staff about the delay.

- on
- about
- with
- towards

03



The missing number in the given sequence 343, 1331, _____, 4913 is

- 3375
- 2744
- 2197
- 4096

04



It takes two hours for a person X to mow the lawn. Y can mow the same lawn in four hours. How long (in minutes) will it take X and Y, if they work together to mow the lawn?

- 60
- 80
- 90
- 120

05





Newspapers are a constant source of delight and recreation for me. The _____ trouble is that I read _____ many of them.

- even, quite
- even, too
- only, quite
- only, too

06



How many integers are there between 100 and 1000 all of whose digits are even?

- 60
- 80
- 100
- 90



07

The ratio of the number of boys and girls who participated in an examination is 4 : 3. The total percentage of candidates who passed the examination is 80 and the percentage of girls who passed is 90. The percentage of boys who passed is _____.

- 55.50
- 72.50
- 80.50
- 90.00



08



An award-winning study by a group of researchers suggests that men are as prone to buying on impulse as women but women feel more guilty about shopping.

Which one of the following statements can be inferred from the given text?

- Some men and women indulge in buying on impulse.
- All men and women indulge in buying on impulse.
- Few men and women indulge in buying on impulse.
- Many men and women indulge in buying on impulse.

09

iven two sets $X = \{1, 2, 3\}$ and $Y = \{2, 3, 4\}$, we construct a set Z of all possible fractions where the numerators belong to set X and the denominators belong to set Y . The product of elements having minimum and maximum values in the set Z is ____.

1/12

1/8

1/6

3/8

10



Consider five people – Mita, Ganga, Rekha, Lakshmi and Sana. Ganga is taller than both Rekha and Lakshmi. Lakshmi is taller than Sana. Mita is taller than Ganga. Which of the following conclusions are true?

1. Lakshmi is taller than Rekha
2. Rekha is shorter than Mita
3. Rekha is taller than Sana
4. Sana is shorter than Ganga

1 and 3

3 only

2 and 4

1 only



GATE EE 2020 Official Paper - (EE)

01





This book, including all its chapters, _____ interesting. The students as well as the instructor _____ in agreement about it.

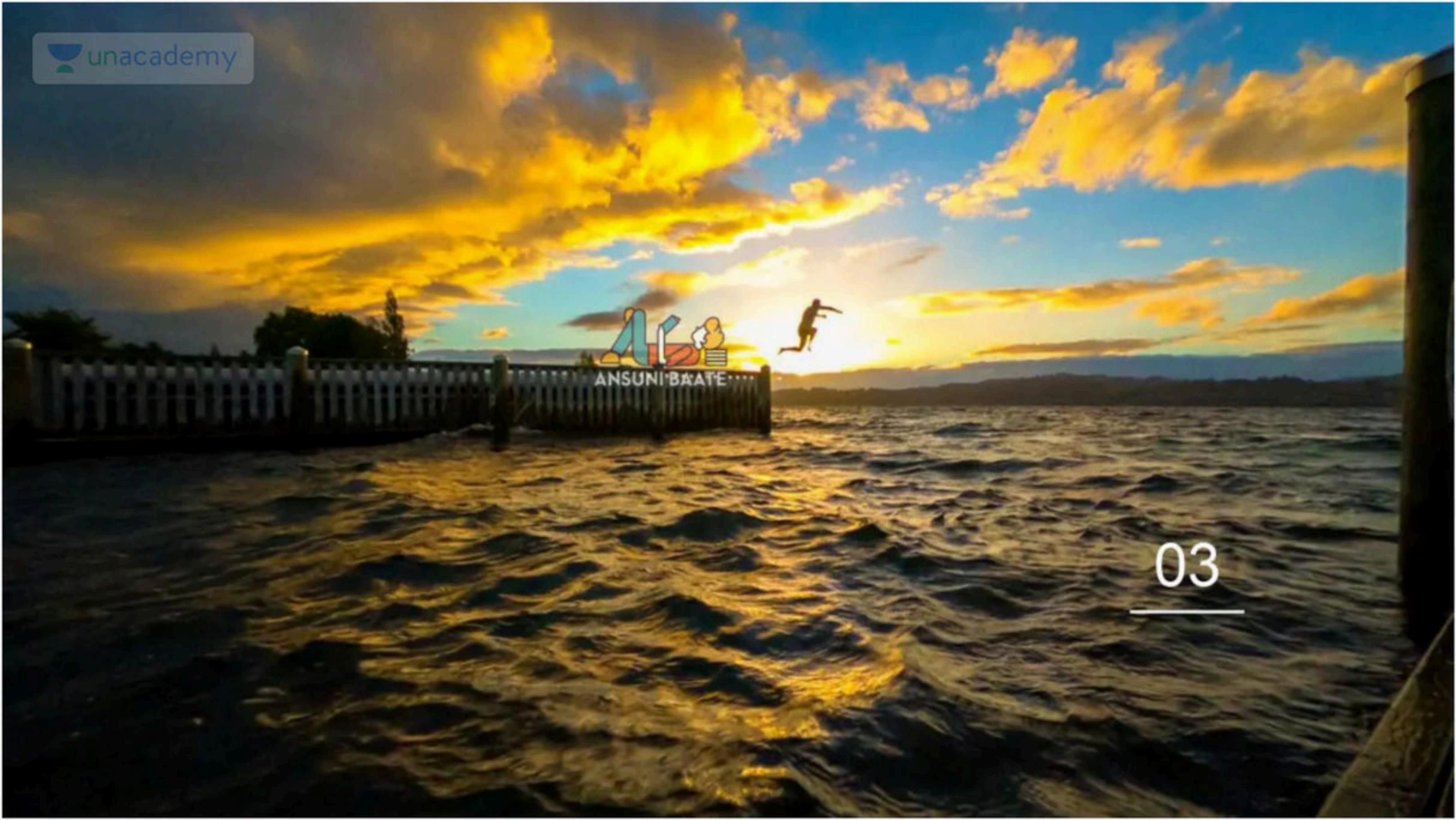
- is, was
- are, are
- is, are
- were, was

02



People were prohibited _____ their vehicles near the entrance of the main administrative building.

- to park
- from parking
- parking
- to have parked



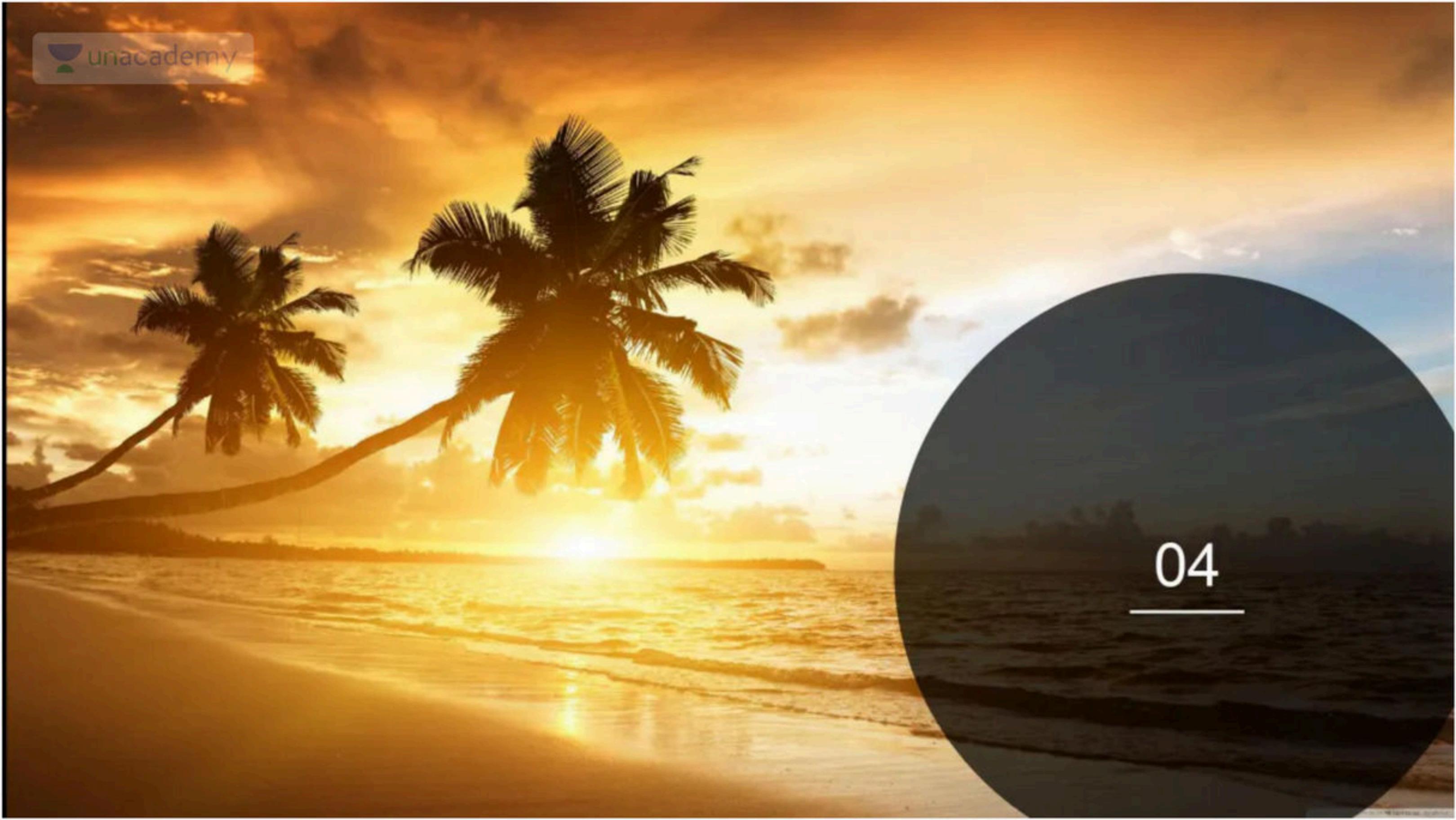
03



Select the word that fits the analogy:

Do : Undo :: Trust :

- Entrust
- Intrust
- Distrust
- Untrust



04



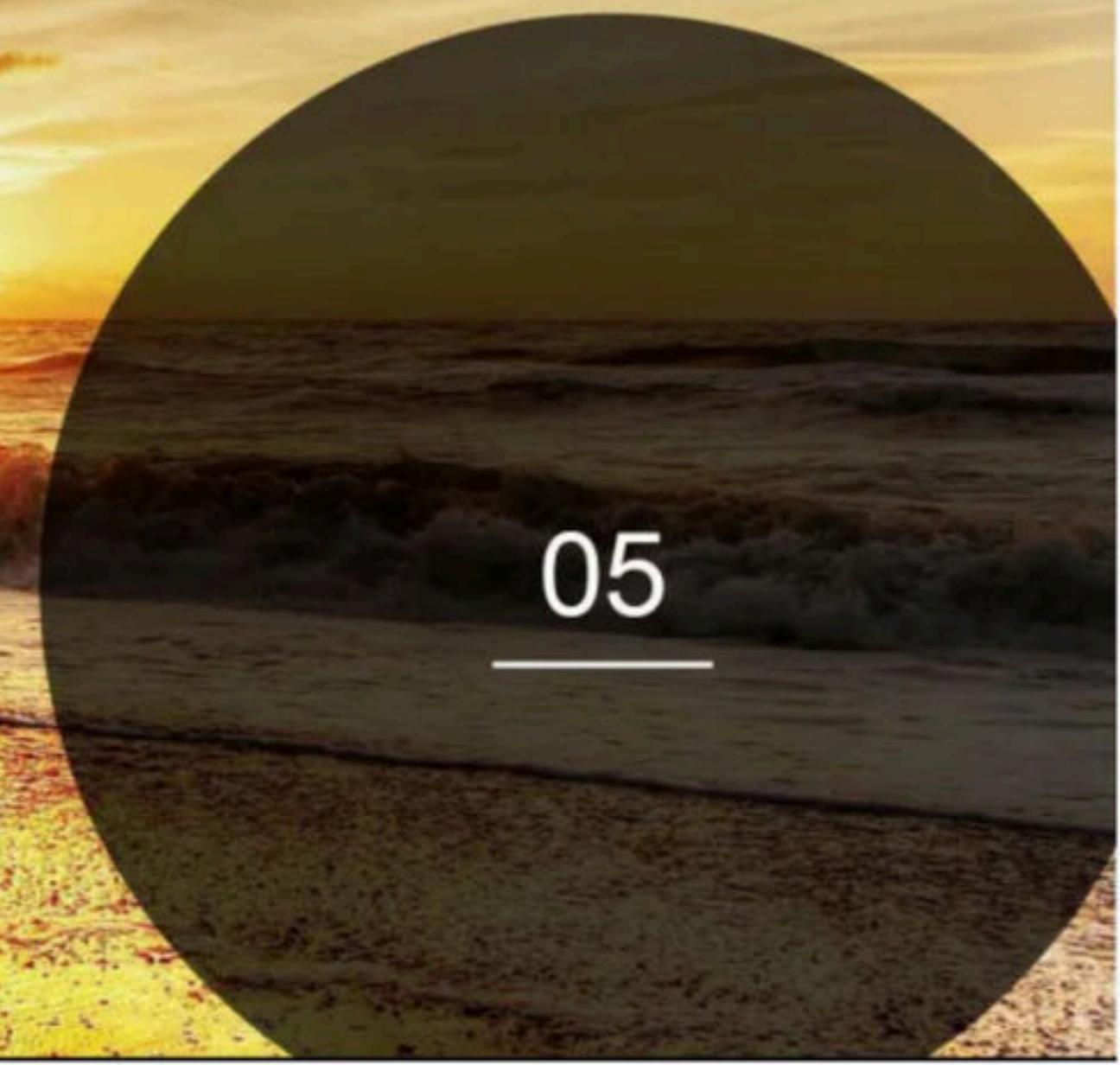
Stock markets _____ at the news of the coup.

poised

plunged

plugged

probed



05



If P, Q, R, S are four individuals, how many teams of size exceeding one can be formed, with Q as a member?

- 5
- 6
- 7
- 8

06





Non-performing Assets (NPAs) of a bank in India is defined as an asset, which remains unpaid by a borrower for a certain period of time in terms of interest, principal, or both. Reserve Bank of India (RBI) has changed the definition of NPA thrice during 1993-2004, in terms of the holding period of loans. The holding period was reduced by one quarter each time. In 1993, the holding period was four quarters (360 days).

Based on the above paragraph, the holding period of loans in 2004 after the third revision was _____ days.

- 45
- 90
- 135
- 180

07

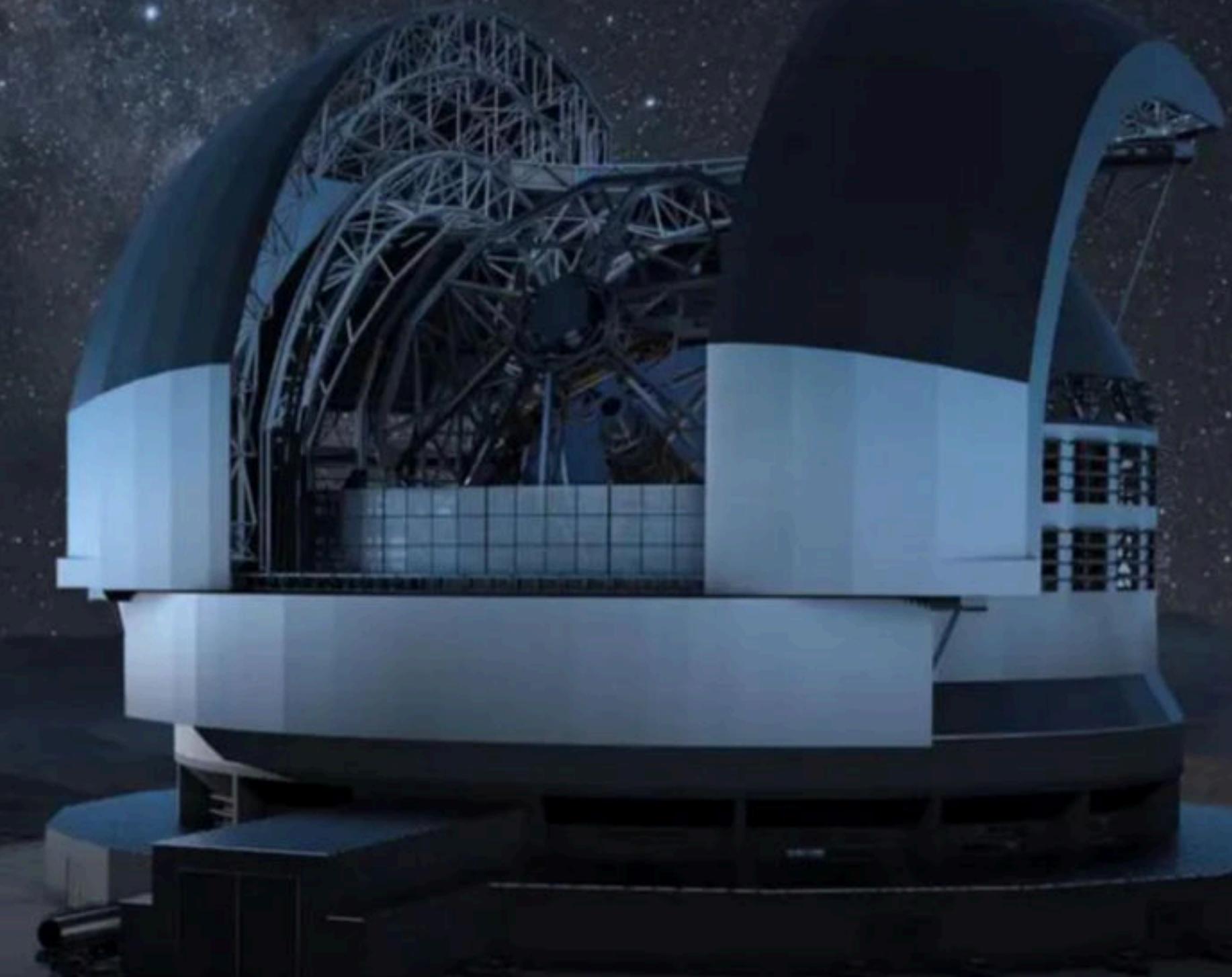




Select the next element of the series: Z, WV, RQP, _____.

- LKJI
- JIHG
- KJIH
- NMLK

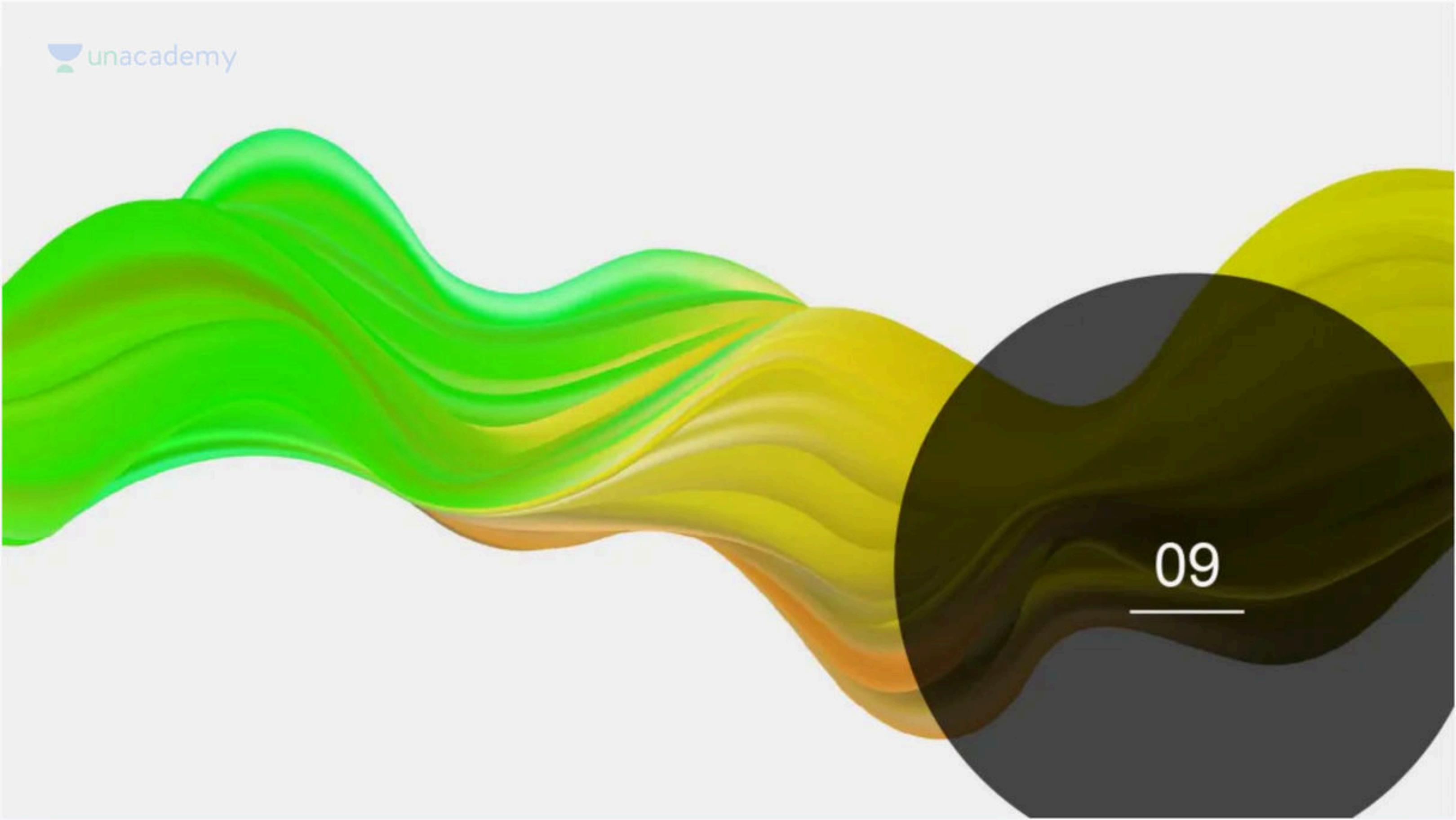
08





In four-digit integer numbers from 1001 to 9999, the digit group "37" (in the same sequence) appears _____ times.

- 270
- 279
- 280
- 299



09

10

