



THE TIMES OF INDIA

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TODAY'S EDITION

► Know how to transform mathematics from 'mundane' to 'memorable' from Neelekantha Bhanu, world's fastest human calculator
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► Find out more on Locavore, one who eats foods grown locally whenever possible in 'Lifestyle'
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► Grandmaster Arjun Erigaisi in top position in Julius Baer Cup; R Praggnanandhaa in second place
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STUDENT EDITION

WEDNESDAY, SEPTEMBER 21, 2022



FACTOID

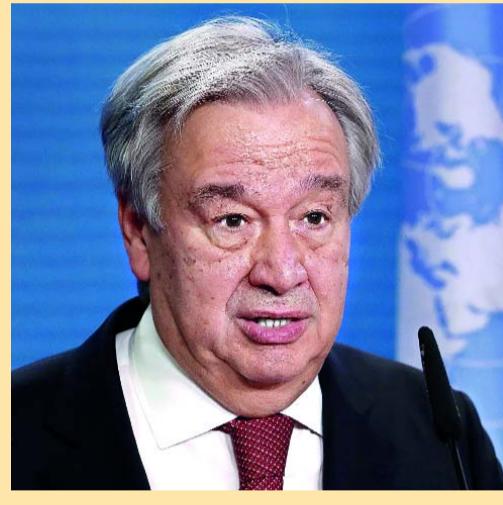


20 QUADRILLION

Yes, that's the number of ants that exist on Earth, according to a new study, which says even this staggering figure underestimates the total likely population of the insects, which are an essential part of ecosystems around the world. Determining the global population of ants is important for measuring the consequences of changes to their habitat, including those caused by climate change. Ants play a significant role, dispersing seeds, hosting organisms and serving as either predators or prey.

- There are more than 15,700 named species and subspecies of ants that are found all over the planet, and probably an equal number that have yet to be described
- But nearly two-thirds of them are found in only two types of ecosystems: tropical forests and savannas
- Based on the estimated number of ants, their total global biomass is thought to be 12 megatons of dry carbon, more than that of wild birds and mammals combined, and 20 per cent of that of humans

Quote unquote



Education is in a deep crisis. Instead of being the great enabler, education is fast becoming the great divide. The Covid-19 pandemic has had a devastating impact on learning, with poor students lacking technology at a particular disadvantage, and conflicts further disrupting schools. Education systems today simply don't make the grade. I urge world leaders to find and support solutions to ensure that everyone can learn, thrive and dream throughout their lives

António Guterres,
secretary general, UN



WORLD'S FIRST FLYING BIKE XTURISMO DEBUTS IN USA

A hoverbike that the Japanese manufacturers plan to launch in the United States next year made its US debut at the Detroit Auto Show recently, drawing perhaps inevitable comparisons to the speeder bikes of 'Star Wars'. The XTurismo is commonly described as the future of urban mobility, a possible platform for the ideal vehicle with various features.

A hoverbike is a vehicle that can hover, resembling a flying motorbike, having at least two propulsive portions—one in front and one behind the driver

ITS FEATURES

The XTURISMO hoverbike, weighing 300 kg, can fly for 40 minutes with a speed limit of up to 100 kph. In Japan, the flying bike is already on sale. According to the founder and CEO of AERWINS, Shuhei Komatsu, the company is planning to sell a smaller version in the US in 2023.

COST

This hoverbike comes with a huge price of \$777,000 (over ₹6 crore). However, AERWINS founder said that the company is trying to cut down the cost to \$50,000 (₹39,86,265 approx) for a smaller, electric model but it will take 2-3 years, and will be ready by 2025.

Co-chair of the Detroit Auto Show, Thad Szott, who took the bike for a test flight, said that the experience of riding a hoverbike was "comfortable" and "exhilarating", and felt like it was something straight out of a sci-fi movie. "I feel like I'm literally 15 years old and I just got out of 'Star Wars' and jumped on their bike," said Thad Szott.

ARE FLYING BIKES THE FUTURE OF URBAN MOBILITY? SHARE YOUR VIEWS AT TOINIE175@GMAIL.COM

Annual Army Day parade on Jan 15 to be shifted out of Delhi

VIEWPOINT



After the IAF Day fly-past, the annual Army Day parade on January 15 is also being shifted out of Delhi in keeping with the Modi government's directive to take major events out of the national capital region (NCR) to different parts of the country. The Army Day parade on January 15 next year will be held in the area of responsibility of the Southern Command, which has its headquarters in Pune. "The exact location of the parade in 2023 is yet to be finalised," a source said on Monday.

The cities under the Army's Southern Command range from Bengaluru, Thiruvananthapuram, Secunderabad and Hyderabad to Pune, Jhansi, Bhopal and Ahmedabad

MAJOR CHALLENGE

■ After the 2023 parade, it is likely to be shifted to some other location in 2024.
■ The shift will pose logistical problems because the soldiers from different regiments as well as the tanks, missiles, howitzers and other weapon systems that are part of the annual January 15 parade in Delhi Cantonment also participate in the subsequent Republic Day parade on January 26.

► January 15 is celebrated as the Army Day every year to commemorate the day when General (later Field Marshal) K M Cariappa took over the command of the force from General Sir F R R Bucher, the last British Commander-in-Chief in 1949.
► This comes after the annual Air Force Day flypast and parade on October 8 will be held in Chandigarh this year, instead of the traditional Hindon airbase on the outskirts of Delhi.
► While the parade will be at the Chandigarh Air Force station in the morning, the fly-past of fighters, aircraft and helicopters will be conducted over the famous Sukhna Lake in the afternoon.
► IAF was officially raised on October 8, 1932, with its first aircraft flight coming into being in April 1933 with six Royal Air Force trained officers and 19 Havai Sepoys (air soldiers)



Q: Is it a good move? Will it showcase the importance of other cities of India? Share your views at toinie175@gmail.com

IMPACT PLAYER



WHAT'S THE USE OF AN IMPACT PLAYER?

The use of Impact Player can be easily understood by an example. If

IN THE NEWS FOR: The Board of cricket control of India (BCCI) is set to bring about a big change in domestic cricket with the introduction of the Impact Player. For now, the rule will only be experimented in the Syed Mushtaq Ali Trophy and it remains to be seen if this becomes a part of IPL or not. The Impact Player rule will surely make the game a bit more interesting, as the 'Impact Player' can single-handedly turn the game in his team's favour.

WHAT: An Impact Player can be introduced into the game before the end of the 14th over. He can replace any player after the end of an over. The Impact Player can bat even if the player he has replaced has already been dismissed. But a team can only lose 10 wickets.

the bench and make it easy for the team. The bowling team can also use an Impact Player to its advantage according to the situation

Twitter makes it easy for the visually impaired to read images

Twitter has rolled out a feature to help blind and visually impaired people read images embedded with the tweets via its new image description reminder. The new image description reminder will encourage more people on Twitter to add helpful descriptions to the images they tweet, the company said in a statement.



■ Once enabled, the feature sends you a prompt on web and mobile reminding you to add alt text whenever you're about to Tweet an image.
■ The descriptions are useful not only to people using screen readers, but to those in low-bandwidth areas, those with web phones, and anyone who wants to learn more about an image.
■ Photos with descriptions will appear with an ALT badge in the lower left corner, making it clear that additional descriptive text is available for the image.
■ Twitter recently added an ALT badge, a Closed Captions toggle button, and captions for audio conversations on Spaces and Voice Tweets.

A BALANCING ACT

Studying the Centre of Mass

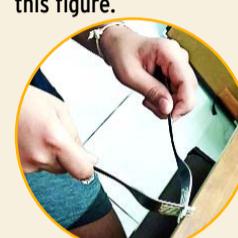
IN THIS EXPERIMENT USING JUST TWO FORKS AND A TOOTHPICK, YOU WILL LEARN WHAT A BALANCING ACT IS!

MATERIALS REQUIRED

1. A glass or steel tumbler
2. Two forks of exact same size and weight
3. One toothpick

METHOD

- 1 Interweave the two forks as shown in this figure.



- 2 Insert the toothpick 2 in between the fork tines



3 Find the exact centre of gravity of two forks by adjusting the toothpick and forks. Balance the other end of the toothpick at the tip of your finger as shown in the figure below. We can see that the toothpick is balancing the weight of both the forks.



- 4 Place this arrangement very carefully on the edge of a glass. We can see that the forks are not touching the tumbler. Here the toothpick is balancing the weight of two forks.



■ In real life, this principle of 'centre of mass' is applied all around us. For instance, in a double decker bus, the engine, chassis, running gear are all low down, the top half of the bus is mainly empty space. The centre of mass is remarkably low down. This stops the bus from falling over when going round corners. In such buses, first the lower space is filled and then the upper space to increase the stability of the bus by lowering the centre of gravity.

EXAMPLES IN REAL LIFE

■ When you lift a bucket full of water, your other arm stretches out involuntarily in an attempt to retain the centre of mass of the system between your legs or else you experience severe stress in one leg.



■ In boats and ships, one wants the centre of mass to remain low so that any rolling action from side to side will recover to an upright posture rather than continue to roll and "turn turtle".



■ The centre of mass plays a critical role in aerospace engineering, as the point through which gravity acts on an aeroplane is crucial in determining some important properties of its flight. In planes, the centre of mass and the centre of pressure (lift) are related to aircraft stability.



ADITYA SREEPRASAD, class VII, The Choice School, Tripunithura, Ernakulam >>>

HOW IT WORKS

Now let us look into the science behind this experiment.

The key concept here is the idea of the "centre of mass" of a system, which is basically the point at which you consider all the mass to be concentrated.

- The point at which the weight of the two forks is concentrated is being transferred through the toothpick to the side of the glass. That is, the centres of gravity of the forks are now at the tip of the glass, where the end of the toothpick is.

- The centre of gravity is a point at which you can balance an object. The centre of mass is the point where all the mass of an object is concentrated. When the centre of gravity and centre of mass are same, then the object is in equilibrium. In this case, the centre of mass of two forks is transferred through the toothpick to the edge of glass and it matches with the centre of gravity of all objects as a single piece.

- We see people balancing a big ball/stick at the tip of the finger. It is the same science that applies in these cases also.

Whiz's tips on maths



Know how to transform learning mathematics from 'Mundane' to 'Memorable' from Neelakantha Bhanu, who is known as the world's fastest human calculator...

NO MEMORISING

In most cases, from the beginning of a student's math journey, they are encouraged to memorise. The tables of 1-10 are terrorising, as failing to learn them by heart often results in punishments. Even today, many of us fail to understand that multiplication is nothing but repeated addition. The point of teaching is lost as students fail to gauge the true sense of the subject. Unknowingly, we promote a culture of memorising math and this is the last thing that should be done. In its place, teachers and students must learn math through experience by keeping their minds open to real life examples.

SETTING A CONTEXT

Gamification can aid in a shift in the perception of math and provide new, engaging ways to learn. Games could be as simple as asking students in a class to keep adding a number when their names are called one after the other. Students can self-study through challenging math puzzles which are easily available online. This will increase your speed as well as arithmetical accuracy. Mental math is a sport and math definitely deserves to be an integral part of the sporting culture.

GAMIFICATION

FRIENDLY SUBJECT

Linguistic skills and numeric/quantitative skills are the two skills all people use to perceive the world around them. We barely hear people say that they are scared of language but a large number of people are scared of maths. This is because language is seen as human interaction while math is not. By normalising the use of numbers and humanising arithmetic, the fear of maths can be defeated. The onus is on educators and academic thinkers to treat maths as a friendly subject.

Gauge your power in English



CLASS: IX
SUBJECT:
ENGLISH LANGUAGE AND LITERATURE (CBSE)
MARKS: 40

PAPER SET BY ENGLISH FACULTY OF UDGAM GROUP OF SCHOOLS, AHMEDABAD

GENERAL INSTRUCTIONS

1. The Question Paper contains THREE sections:
- | | |
|-------------------------------|----------|
| SECTION A - READING | 10 marks |
| SECTION B - WRITING & GRAMMAR | 10 marks |
| SECTION C - LITERATURE. | 20 marks |
2. Attempt questions based on specific instructions for each part.

SECTION A - READING

Q1. Read the following passage carefully and answer the questions that follow.

■ With eager anticipation we awaited the next stage. A tailor was called in to measure us, five boys and one girl, Mary Lila Rao, for the sports kits. I was filled with happiness, just like a child who had been given a bag full of candy. After all, I would be fulfilling my dream to wear a blazer with IN-DIA written on it!

■ A week later, we left for Australia. The night before we left, I could not sleep. My small suitcase had been packed with my kit and bedding and I waited for the sun to rise. Excited by the prospect of what lay ahead, we boarded the train to

Bombay, the first lap of our long journey across the seas to far-off Australia. When we reached Bombay's Churchgate station, we were taken by a bus to the Astoria Hotel. It was the first time that I had seen such a grand place, and I could barely believe my eyes. What was I, a simple village boy, doing in such a different world? While we were at the Astoria, Commander Rekhi, our manager, showed us how to knot a tie and gave us lessons on table manners.

■ When we reached Santa Cruz, the entire atmosphere at the terminal seemed unreal - bright lights, the strange sounds, the rush of people. Except for Mary Lila Rao, none of us had flown before. I was scared and confused. Where would I sleep? What would I eat? How would the plane take off with so many people, their luggage and other cargo? Would it crash under so much weight? I fol-



lowed my companions towards the huge monster that awaited us, and blindly climbed up the ramp into the cabin. I was asked to fasten my seatbelt, but naturally I did not know what to do and was fumbling with the straps when the air-hostess kindly helped me.

■ When the plane started to taxi along the runway, I closed my eyes and prayed to my God. I had butterflies in my stomach as the plane ascended. And then we were airborne. When I looked out of the window I saw smoke pouring out of the engines, and raised an alarm, thinking that the plane was on fire. The air-hostess calmed me down, patiently explaining that it was only the fuel burning. I felt very foolish and laughed with relief. (Adapted from the Autobiography of Milkha Singh)

Based on your understanding of the passage, answer the following questions.

(1X5=5)

- 1) Why couldn't Milkha Singh sleep a night before they left?
- 2) What made the atmosphere of Santa Cruz seem unreal?
- 3) Give any two reasons responsible for Milkha's worry or confusion.
- 4) Complete the statement. When Milkha Singh looked out of the window of the airplane, he _____.
- 5) Give the meaning of 'butterflies in stomach'.

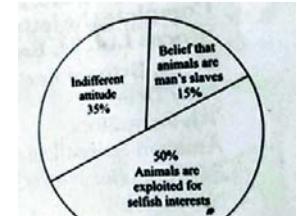
Q2. Read the following passage carefully and answer the questions that follow.

■ Man suffers from a distorted complex. He always considers animals as inferior beings only fit for exploitation. Man has been using domestic and wild animals for his selfish ends. Many animal lovers joined together to form the Society for Prevention of Cruelty to Animals.

■ The society has been working for the welfare and welfare of animals for many years. Its main aim is to change the attitude and thinking of people towards animals. It is quite sad that animals continue to be ill-treated, tortured and killed according to the whims of the people. About 15 percent of the people entertain the belief that animals are man's slaves. They use, misuse and torture them accordingly. About 50 percent of the people exploit animals for selfish ends.

(1X5=5)

- 1) Why couldn't Milkha Singh sleep a night before they left?
- 2) What made the atmosphere of Santa Cruz seem unreal?
- 3) Give any two reasons responsible for Milkha's worry or confusion.
- 4) Complete the statement. When Milkha Singh looked out of the window of the airplane, he _____.
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Horses and oxen are used for transport,

carrying loads and in agricultural activities. Dogs, cats and many birds are domesticated for fun, entertainment and convenience. Wild animals liked elephants, tigers, lions and deer are victims of poaching and killing. Animals are forced to do acrobatic feats in circus shows. Unfortunately, about 35 percent of people don't think about the animals at all. They are totally indifferent to them.

■ The government and the animal lovers must work together to bring a change in the attitude of the people. Animals should not be killed and poached for fun, furs or financial gains. They should be treated with kindness, care and sympathy. Cruelty towards animals must be legally punished.

Based on your understanding of the passage, answer the following questions.

edited. There is one error in each line. Identify the error and write its correction against the correct blank number. The first one has been done for you.

(1x3=3)

Error Correction

My day begins on 5 o'clock in the morning. on at (1) It has been so since the last forty years (1) accept for the two years when I was (2) very ill. Back then, I cannot wake up no matter how hard I tried. (3)

SECTION C - LITERATURE

Q6. Read the extract given below and answer the questions that follow.

(1x4=4)

Two roads diverged in a yellow wood, And sorry I could not travel both And be one traveller, long I stood And looked down one as far as I could To where it bent in the undergrowth.

(1) What problem does the poet face?

(2) Where was the poet standing?

(3) Find any one poetic device in the stanza given above.

(4) Find a word from the extract that means 'separated'.

Q7. Answer the following questions in 30-40 words each.

(2x4=8)

(1) Why was Margie disappointed?

(2) How did 'pungi' transform into a Shehnai?

(3) How does the wind deal with weak people?

(4) How did Toto's love for warm bath almost lead to his being half-boiled?

Q8. Answer any two of the following questions in 120-150 words.

(4x2=8)

(1) Write a character sketch of Evelyn Glenie.

(2) What was the child's reaction after he realized that he had lost his parents?

These questions are meant for practice purpose only. Students are advised to check format, syllabus and marks for Board test papers with their teachers. Questions have been given by teachers and NIE is not responsible for them.