



THE TIMES OF INDIA

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TODAY'S EDITION

➤ With global warming on the rise, know more about your ecology by solving sample papers on environmental applications
PAGE 2



➤ A student talks about his role model IPS officer C Sylendra Babu, the DG of police, Tamil Nadu
PAGE 3



➤ Napoli honour Maradona, crush Lazio
PAGE 4

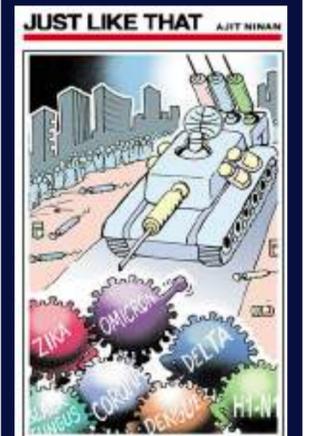


STUDENT EDITION
TUESDAY, NOVEMBER 30, 2021



OMICRON FORCES REVIEWS, BRINGS BACK CURBS

The Centre on Sunday decided to review the decision on resuming scheduled commercial international passenger services, in the wake of the new Covid-19 variant of concern 'omicron'. India had announced resumption of flights from December 15. "The new variant of coronavirus reportedly has more than 30 mutations at the spike protein region and therefore has the potential of developing immune-escape mechanisms. As most vaccines (work by) forming antibodies against the spike protein, so many mutations at the spike protein region may lead to a decreased efficacy of Covid-19 vaccines," AIIMS Director Dr Randeep Guleria said. In such a scenario, the efficacy of vaccines including those in use in India needs to be evaluated "critically", he said.



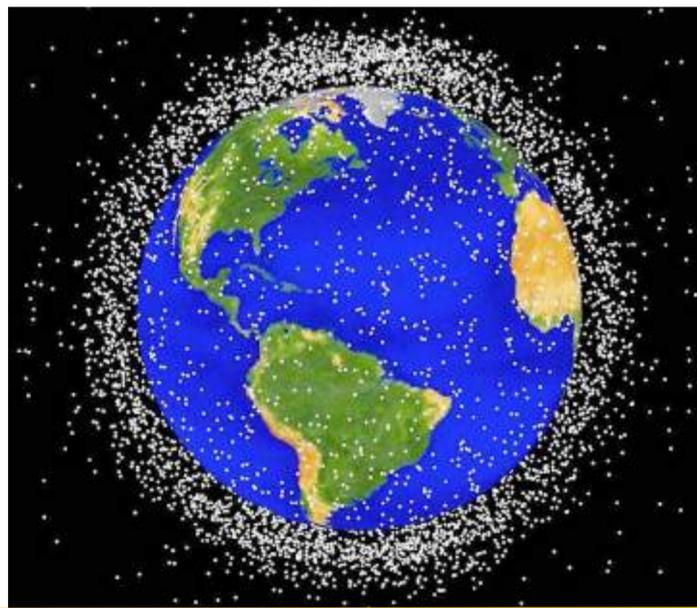
The new, potentially more contagious B.1.1.529 variant, was first reported to the World Health Organisation (WHO) from South Africa on November 24

CLICK HERE: PAGE 1 AND 2

Earth could have its own Saturn-like band due to pollutants

RINGS OF SPACE JUNK?

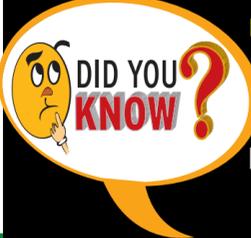
The rising pieces of debris floating in space may lead to form a 'ring' around the Earth, similar to the solar system's gas giants, scientists have claimed. "The Earth is on course to have its own rings," said University of Utah professor Jake Abbott. "They'll just be made of junk," he added. In fact, according to NASA, the low-Earth orbit (LEO) is now viewed as the 'world's largest garbage dump.'



1 Space junk, considered a type of pollution, has grown dramatically since 1957, the study observes. NASA estimates that there are at least 23,000 pieces of debris that enter the low-Earth orbit larger than a softball in orbit, but there are probably 500,000 pieces between 0.4 inches and four inches

2 The weight is equivalent to 1,100 elephants. The worrying part is that the size of the herd is projected to continue to grow exponentially.

3 According to the European Space Agency, it's possible that there are 170 million pieces of space debris that are smaller than 0.4 inches



■ Four planets in the solar system already have rings – Jupiter, Saturn, Neptune and Uranus

■ Saturn's rings are made of ice and rock, varying in size, and could be remnants of ancient comets, asteroids or celestial satellites, NASA notes

■ The rings that orbit Jupiter and Neptune are significantly fainter and are primarily made of dust. It's possible that Jupiter's rings may stem from a number of meteor strikes that have hit the planet's 79 moons

NEWS IN CLUES

WHICH ISLAND IS THE BIRTHPLACE OF THE WORLD'S RICHEST FEMALE SINGER?

CLUE 1: It's also home to several notable cricketers, including Garfield Sobers and Malcolm Marshall.

CLUE 2: Its capital was originally called Indian Bridge, after a river bridge built by Indian settlers.

CLUE 3: It imported mongoose from India to take care of the rats infesting its sugarcane fields.

Answer: **BARBADOS.** The island nation will become the world's newest Republic as it severs its ties with the British monarchy, replacing Queen Elizabeth II, who's its current Head of State, with Sandra Mason, currently the Queen's representative in her capacity as Governor General, as the island's first President. The birthplace of Rihanna, the world's wealthiest singer, worth around \$1.7 billion, Barbados' capital is Bridgetown.

Merriam-Webster chooses vaccine as the 2021 word of the year

With an expanded definition to reflect the times, Merriam-Webster has declared an omnipresent truth as its 2021 word of the year: vaccine. At Merriam-Webster, lookups for "vaccine" increased 601 per cent over 2020, when the first US shot was administered in New York in December after quick development, and months of speculation and discussion over efficacy. The world's first jab occurred earlier that month in the UK.



■ The word "vaccine" wasn't birthed in a day, or due to a single pandemic. The first known use stretches back to 1882 but references pop up earlier related to fluid from cowpox pustules used in inoculations

■ It was borrowed from the New Latin "vaccina," which goes back to Latin's feminine "vaccinus," meaning "of or from a cow." The Latin for cow is "vacca," a word that might be akin to the Sanskrit "vasa," according to Merriam-Webster. ■ Inoculation, on the other hand, dates to 1714, in one sense referring to the act of injecting an "inoculum." Earlier this year, Merriam-Webster added to its online entry for "vaccine" to cover all the talk of mRNA vaccines, or messenger vaccines such as those for Covid-19 developed by Pfizer-BioNTech and Moderna



Twitter likely to roll out 'Reactions' feature soon

After unveiling several features this year, micro-blogging site Twitter is reportedly readying new features, including Reactions, Downvotes and Sorted Replies for iOS users. According to reverse engineer Nima Owji, the Reactions feature, which started being tested a couple of months ago, is set to launch soon, reports 9To5Mac.

With four new reactions, "tears of joy," "thinking face," "clapping hands" and "crying face," this feature is designed to give users the ability to better show how conversations make them feel and to give users "a better understanding of how their Tweets are received".

Quote unquote

During the last 254th Session, the productivity of the Upper House slipped to 29.60 per cent, which means that Rajya Sabha has lost about 70 per cent of functional time. Therefore, all concerned need to ponder over rendering legislatures so dysfunctional. Clearly, we need to have more meaningful, productive use of our time in Parliament. We need to recognise the exalted place that Parliament occupies in public



perception. In a democracy, people's will is conveyed as the mandate to the government of the day. Tolerance towards the mandate of the people is the guiding spirit for legislatures. Dialogue and debates in the constituent assembly should be marked by openness to new perspectives and willingness to listen to diverse views. Elected representatives must choose between being a bad lot and a good lot. All citizens and stakeholders should work with passion for the nation
M Venkaiah Naidu, Vice President

Dhanush wins Best Actor for 'Asuran' at BRICS Film Festival



Actor Dhanush's stellar performance in director Vetrimaran's Tamil film 'Asuran' fetched him the Best Actor Award at the BRICS Film Festival, which was held alongside the 52nd edition of the International Film Festival of India (IFFI) that came to a close in Panaji on Sunday. This is the first time that the BRICS Film Festival has been conducted alongside the IFFI. The BRICS festival had films from Brazil, Russia, India, China and South Africa participating in it.

Interestingly, Dhanush had won a National Award for the same film earlier this year

■ While Dhanush was adjudged the best actor, Lara Boldorini was awarded the Best Actor (female) at the festival for her performance in the Brazilian film 'On Wheels'

■ The Best Film Award was shared by two films - South African film 'Baraka' and the Russian film 'The Sun Above Me Never Sets'

■ Chinese Director Yan Han was awarded the Special Mention Award for his film 'A Little Red Flower' at the festival

BE AN EXPERT ON ECOLOGICAL ISSUES



EXAMS
Fun

CLASS: X - 2020-21

SUBJECT:
ENVIRONMENTAL APPLICATIONS (ICSE)

Time Allowed: 1 Hour

Maximum Marks: 50

PRACTICE PAPER SET BY HUMA SYED, BIRLA OPEN MINDS INTERNATIONAL SCHOOL, KOLLUR, HYDERABAD

GENERAL INSTRUCTIONS

- All Questions are Compulsory.
- The marks intended for questions are given in brackets [].
- Select the correct option for each of the following questions.

SECTION-A (MARKS 15)

Question 1

- (a) Soil management refers to
A. Reducing Soil erosion
B. Adjusting soil factors for maximum crop production.
C. Increasing infiltration of rain water in soil.
D. Protecting land surface from impact of rainfall.
- (b) Remote Sensing Satellites are used for
A. Predict weather and Natural calamities.
B. Ocean study and tides development.
C. Deforestation, mining and Land degradation.
D. All the above
- (c) Anthropogenic causes of soil erosion are
A. Torrential rains and wave action.
B. Deforestation and Mining activities.
C. Wrong agricultural practices and use of chemical fertilizers. D. Both B and C
- (d) Choose the correct full form of the given abbreviations:
i. SPM- Standard Particulate Matter
ii. JMF - Joint forest management.
iii. CNG- Compressed natural Gas
iv. SPM- Suspended particulate matter

- Options:
A. i & iii B. ii & iii C. i & iv D. ii & iv
- (e) Which of the following point is not correct with reference to the steps taken by Supreme Court of India to protect Taj Mahal?
A. Creation of Green Belt around Taj Trapezium Zone.
B. Banning the use of Coal/Coke in industries.
C. Relocating factories outside the Trapezium.
D. Use of only CNG vehicles in close vicinity of Taj Mahal.
- (f) Community Forestry is a branch of forestry where
A. Local people are involved in forest protection plans.
B. Afforestation on non-forested areas is done.
C. Agriculture, Livestock farming and forestry done together. D. All the above.
- (g) Pick out the right option for biodegradable wastes.
A. Bricks and Asbestos
B. Molasses and Crop residue
C. Thermoaccol and Aluminium
D. None of these
- (h) Eutrophication means
A. Accumulation of toxic substances in water body
B. Depletion of oxygen content in the water body.
C. Increase in the toxic substances along the food chain.
D. Percolation of toxic substances down the layers of soil.
- (i) The integrated Watershed management refers to
A. Interconnected management of Soil, Water and Forests.

- B. Construction of Water harvesting structures.
C. Construction of Large Multipurpose Dams.
D. Conservation of Lakes and Rivers.
- (j) The Basel Convention was adopted to -
A. Provide the world a sustainable transport model.
B. Restrict transboundary movement of hazardous wastes.
C. Introduction of CNG for public transport.
D. Set emission standards to reduce automobile pollution.
- (k) Which of the following is not a technical device to control Air pollution?
A. Electrostatic precipitator
B. Sludge digester C. Wet Scrubber
D. Cyclone separator
- (l) The Soil conservation strategy to reduce flow velocity of water -
A. Check Dams B. Contour bunding
C. Basin listing D. None of these
- (m) Pick out the examples of alternate fuels from the given options.
A. Firewood and Coal
B. Petrol and Diesel C. Biodiesel and CNG
D. Coal and Petroleum
- (n) Which of these is not a cause of deforestation?
A. Shifting agriculture
B. Mining activity C. Industrialization
D. Tree Break
- (o) Which of these is not an advantage of Landfills?
A. Reduce chances of pathogenic disease
B. Leachate is formed
C. No foul smell produced
D. Prevents menace insects and rodents

SECTION-B (MARKS 15)

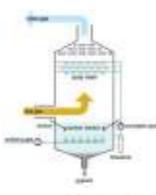
Question 2

- (a) Study the given picture and answer the questions that follow by picking the correct option from 1 to 4 in each case.



- i) The structure shown in the given picture is
A. Johads B. Check Dam
C. Contour Bunds D. Kund
- ii) This structure is built by using
A. Bags of sand B. Boulders and logs
C. Ridges and channels D. Both A & B
- iii) The given structure is a method to conserve
A. Forests B. Water C. Soil D. Both B & C
- iv) The advantage of the structure given here is it
A. Reduces flow velocity of water.
B. Recharges groundwater.
C. Harvests rainwater D. All of the above
- v) Pick out the option which is not correct with the reference to the structure shown here
A. It conserves water
B. Cost of building is less.
C. Water can be directed for irrigation.
D. Water can be stored in reservoir for future use.
- (b) Given below is a diagram of a device to check the release of harmful

substances into the atmosphere as a strategy to control Air pollution. Study the diagram and answer the following questions.



- i) The Air pollution control device shown in the diagram is -
A. Electrostatic Precipitator
B. Bag House filter C. Wet Scrubber
D. Cyclone separator
- ii) The device shown here can remove
A. SPM and Acid gases
B. Oxides of carbon C. Grease and Oil
D. All of these
- iii) The device shown here can be used in
A. Three stroke engines
B. Activated sludge Process
C. Factories and Industries
D. Thermal Power Plants
- iv) The given device works on the principle of
A. Induced electrostatic charge.



- B. Neutralization of Acid gases.
C. Turbulent mixing of gases and liquid.
D. Rotation and force of gravity.
- v) Which of the following point is correct with reference to the advantage of the device shown here?
A. It can handle large amount of dust particles.
B. It is capable of handling high temperature.
C. It emits lower levels of acidic gases and dust particles.
D. All the above.

Question 3

- Mention weather the given statement is true or false:
(a) Household wastes like plastic, tin can, thermocol etc that can be broken down by the microorganisms are called biodegradable wastes.
A. True B. False
(b) Euro Norms are voluntary European emission standard followed in European Union.
A. True B. False
(c) Biogas is an effective alternative for fuel wood in the urban areas.
A. True B. False

- (d) Soil carried away by rain and wind end up in water bodies and cause salination.
A. True B. False
(e) Hybrid vehicle uses one or more distinct power sources to move the vehicles.
A. True B. False

SECTION-C (MARKS 20)

Question 4

- Fill in the blanks choosing the correct option from 1 to 4.
(a) The main objective of _____ is the management of forests, water resources and water security
A. Delhi Model City B. Auroville
C. Tarun Bharat Sangh
D. Basel Convention
- (b) The Auroville 'The City of Dawn' and experimental township is in the City/State/Union Territory of _____.
A. Curitiba- Brazil
B. Villupuram-Tamil Nadu
C. Basel- Switzerland
D. Delhi- India
- (c) Which of the following is not an advantage of Remote Sensing?
A. Prediction of natural calamity

- toxic substances along the food chain
A. Biomagnification
B. Eutrophication
C. Salination D. Algal Bloom
- (d) A vehicle which uses two or more distinct power sources to run
A. Alternate Energy Vehicle
B. Liquid Nitrogen Car
C. High Occupancy Vehicle
D. Hybrid Vehicle
- (e) Choose the statements which are correct pertaining to the advantages of Joint Forest Management.
i. Government and local people work in partnership.
ii. Plant cover on roadsides and Canal-ridges is increased.
iii. Employment for local people
iv. Locals have the access to forest products.
A. i, ii and iv B. i, iii and iv
C. ii, iii and iv D. i and iv

- Question 6
Match the statement in Column I with the most appropriate in Column II.

Column I	Column II
a) Thermoaccol and Aluminium	i) Alternate power sources
b) Solar cooker and Biogas	ii) Green House gases
c) Heavy metals and Mercury	iii) Alternate to Fuel wood
d) CNG and Hydrogen	iv) Non-biodegradable substances
e) Carbon dioxide and Methane	v) Hazardous wastes

- a) (i) (ii) (iii) (iv) (v) b) (i) (ii) (iii) (iv) (v)
c) (i) (ii) (iii) (iv) (v) d) (i) (ii) (iii) (iv) (v)
e) (i) (ii) (iii) (iv) (v)

Question 7

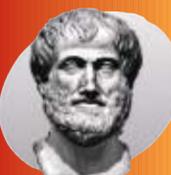
- The following questions are based on Soil Conservation methods. Choose correct option to fill in the blanks.
a) Leguminous crops b) Dry leaves and Husk c) Slope of hill. d) Prevailing wind
e) Contour bunding. f) Basin listing.
i) In Terrace farming the fields are cut at right angles to the
ii) In _____ alternate ridge and channels are made.
iii) Crop rotation is the method where _____ are used to restore soils fertility.
iv) Mulching is a method where _____ are spread on soil.
v) Shelter belts involve planting of Trees and shrubs at right angle to the _____.
(i) (a) (b) (c) (d) (e) (f)
(ii) (a) (b) (c) (d) (e) (f)
(iii) (a) (b) (c) (d) (e) (f)
(iv) (a) (b) (c) (d) (e) (f)
(v) (a) (b) (c) (d) (e) (f)

- KEY: 01. a- B, b- D, c- D, d- D, e- D, f- D, G- B, h- B, i- A, j- B, k- B, l- A, m- C, n- D, o- B
02. a. i- C, ii- D, iii- D, iv- D, v- C
b. i- C, ii- A, iii- C, iv- B, v- C
03. a- False, b- True, c- False, d- False, e- False
04. a- C, b- B, c- D, d- A, e- D
05. a- B, b- C, c- A, d- D, e- B
06. A- iv, b- iii, c- v, d- i, e- ii
07. i- c, ii- e, iii- a, iv- b, v- d

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.

OF MOVEMENT, FRICTION & REST

Have you ever thought about why things move? For example, why an arrow shot from a bow keeps flying or why a ball keeps moving when hit with a bat. Well, a similar thought occurred to the Greek philosopher Aristotle (384 BC- 322 BC). According to him, an external force is required to keep a body in motion. However, this notion was flawed, but how? Let us see...



A small child playing with a simple toy-bus on a floor knows that it needs to constantly drag the string attached to the bus with some force to keep it going. If it releases the string, it comes to rest.

A moving bus comes to rest because the external force of friction on the bus by the floor opposes its motion. To counter this force, the child has to apply an external force on the bus in the direction of motion. When the bus is in uniform motion, there is no net external force acting on it: the force by the child cancels the force (friction) by the floor. It implies that if there were no friction, the child would not be required to apply any force to keep the toy bus in uniform motion. The opposing forces such as friction (solids) and viscous forces (for fluids) are always present in the world. On this understanding is where Aristotle went wrong.

To get at the true law of nature for forces and



motion, one has to imagine a world in which uniform motion is possible with no frictional forces opposing. Which is what Galileo did, he studied the motion of objects on an inclined plane and observed that objects moving down an inclined plane accelerate, while those moving up retard. Galileo concluded that an object moving on a frictionless horizontal plane must neither have acceleration nor retardation, i.e. it should move with constant velocity.

Galileo made observations about friction and Newton built on these observations. What made Newton so radical was that before his first law of motion, scientists had said an object came to a stop because there was no force acting on it. Newton's first law of motion is also called the law of inertia. Inertia is the ability of a body by virtue of which it opposes a change. According to this law, an object will remain at rest or in uniform motion in a straight line unless acted upon by an external force.

EXAMPLES FOUND IN DAILY LIFE

AN ASTRONAUT MOVING CONTINUALLY IN SPACE

In outer space, there are no external forces. So an object in motion stays in motion as there is no external force to oppose its motion. Astronauts are able to fly due to this reason.



is stopped due to external forces of friction and muscular force. Frictional force stops the ball from moving forever. The muscular force can stop, change the direction and speed of the soccer ball.

JUMPING ON A TRAMPOLINE

When we jump on a trampoline we are thrown skywards but eventually, we do come down. This is because of the force of gravity which brings us back. Here, the gravitational force acts as an external force.



A ROCK AT REST

A rock lying on the ground will continue to do so for millions of years unless it is pushed by nature or by some force. It won't be floating around in different places.



THE CHANGE OF DIRECTION OF A SOCCER BALL

In a game of soccer, the soccer ball is continuously kicked around. According to Newton's first law of motion, it should be in motion forever, but it



WASHING MACHINE DRYER

A washing machine dryer entirely works on the principle of the law of inertia. In or-



der to dry the clothes, the drum of the washing machine dryer is subjected to motion, which further causes the clothes to move; however, the water molecules contained in the cloth do not follow up the motion and stay in their position of rest. Due to the gravity, the water gets collected at the base of the drum. The holes of the drum let the water out, leaving the clothes dry.

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