



EDUHEAL FOUNDATION

INTERACTIVE OLYMPIADS

EDUHEAL FOUNDATION CONDUCTS 8 OLYMPIADS ANNUALLY REACHING OUT TO 3,500 + SCHOOLS
• 4 LAKH + STUDENTS • 50,000 COORDINATING TEACHERS AND HAVING 500 RESOURCE PERSONS
IN ENGLISH / MATHS / SCIENCE / BIOTECH / COMPUTER / G.K. / ARTS / CRICKET & 300 REGIONAL COORDINATORS.

WEBSITE : WWW.EDUHEALFOUNDATION.ORG • E-MAIL : EDUHEALFOUNDATION@GMAIL.COM

ICO INTERNATIONAL CYBER OLYMPIAD	NISO NATIONAL INTERACTIVE SCIENCE OLYMPIAD	NIMO NATIONAL INTERACTIVE MATHS OLYMPIAD	NBTO NATIONAL BIOTECHNOLOGY OLYMPIAD	IEO INTERNATIONAL ENGLISH OLYMPIAD	IGO INTERNATIONAL G.K. OLYMPIAD
---	---	---	--	---	--

Level - 1 : Level-1 winners will get certificate, aptitude report, medals for the school toppers and online subscription.

Level - 2 : Top 10 % including school toppers will be selected for level-2-National level - online computer based interactive test held at exam centres all over India. Besides selection for level-3, winner will get merit certificate, aptitude report, medals, Mp3 player, watches, educational CDs, laptop, scholarship, online subscription etc.

Level - 3 : Top 1% will qualify for level 3-International level-where you will compete with students globally. Get selected for EHF's International Olympiad training camp. Only Indian organization giving students exposure to global competitions. Represent India & win laurels. Guidance by top scientists.

Prizes ranges from cash (millions of \$), gadgets, foreign trips, publicity, fame, scholarships, Internships, conference participation and more.

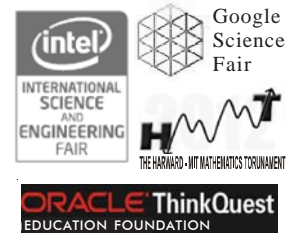
- You are allowed additional 10 minutes to fill the required details in the **RESPONSE SHEET**.
- The question paper is made as per syllabus guidelines & pattern given in the information Booklet. The Question Paper for Classes 1 to 6 contains 25 Questions each to be answered in 40 minutes. The Question paper for classes 7 to 12 contains 50 Questions each to be answered in 60 minutes. All questions are compulsory. Further instructions are given in the instruction letter to the coordinator teacher.
- Use the response sheet to mark your responses by darkening the required circle. The response sheet has to be returned to the foundation, duly filled in. The student can retain the Question Paper.

NATIONAL INTERACTIVE SCIENCE OLYMPIAD

NISO

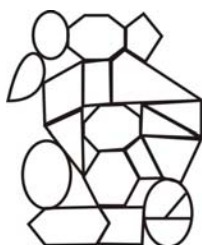


LEVEL - 1



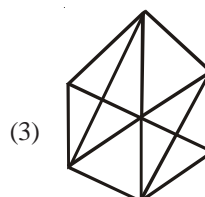
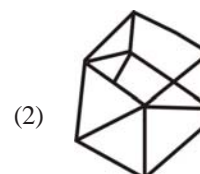
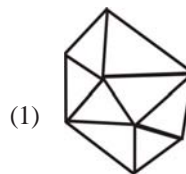
GENERAL IQ

- When asked about his birthday, a man said "the day before yesterday I was only 25 and next year I will turn 28." This is true only one day in a year when was he born?
 - He was born on 29th February (leap year) and spoke about it on March 1st.
 - He was born on December 31st and spoke about it on January 1st.
 - He was born on November 30th and spoke about it on December 1st.
 - None of these
- How many pentagons can you find out from the given figure?



- 1
- 3
- 5
- None of these

- Three flat cube-like shapes are given below. Their patterns are drawn with black lines. Which one of them can you draw without taking your pen off the paper or going along the same line twice?



- None of these

4. A boy, girl and a dog started walking down a road. They started at the same time, from the same point, in the same direction. The boy walked at 5 km/h and the girl at 6km/h. The dog ran from the boy to the girl and back again with a constant speed of 10km/h. The dog does not slow down on the turn. How far does the dog travel in 1 hour?
- (1) 20km (2) 10km
(3) 5km (4) None of these
5. There is a toy boat floating in a tank of water. Place a lead ball in the boat (without sinking it) and measure the level of water in the tank. Now take the ball out of the toy boat and drop it in the pool and measure the water's level again. Will the two water level measurements be different, if so which will be higher?
- (1) The water level will be higher when the ball is in the boat.
(2) The water level will be higher when the ball is put in water.
(3) The water level will be same in both cases.
(4) None of the above.
6. In a certain code CRICKET is written as 5325412 and DHONI is written as 79862. How is the word CHICKEN coded in that language?
- (1) 6925415 (2) 5294561
(3) 5925416 (4) None of these
7. Two people are walking in opposite directions. Both of them walked 6 miles forward, then took right and walked 8 miles. How far is each from their starting positions?
- (1) 14 miles and 14 miles (2) 10 miles and 10 miles
(3) 6 miles and 6 miles (4) None of these
8. When a number is multiplied by 13, it becomes greater to 105 by an amount with which it is lesser to 105 by now. What is the number?
- (1) 15 (2) 10
(3) 5 (4) None of these
9. When asked in an exam how much time is left, the teacher answered that the amount of time left is $\frac{1}{5}$ of the time already completed. How much time is left?
- (1) 5 (2) 10
(3) 15 (4) None of these
10. "My successor's father is my father's son and I don't have any brothers or sons". Who is my successor?
- (1) Daughter (2) Niece
(3) Nephew (4) None of these
12. During the process of pasteurisation, milk is heated to about
- (1) 70°C for 15 – 30 seconds and then suddenly chilled.
(2) 80°C for 30 – 35 seconds and then suddenly chilled.
(3) 90°C for 15 – 20 seconds and then slowly chilled.
(4) None of these.
13. Common ailments like cold, influenza and most coughs are caused by
- (1) Bacteria (2) Fungi
(3) Virus (4) None of these
14. While putting clothes for drying, we spread them out. This is because
- (1) If the surface area is increased, the rate of evaporation also increases, as a result of which clothes dry up easily.
(2) The force of attraction between the liquid molecules is decreased resulting in quick drying of clothes.
(3) The latent heat of vaporisation of water results in drying of clothes.
(4) None of these
15. Which is the carrier of dengue virus?
- (1) Female Anopheles mosquito
(2) Female Aedes mosquito
(3) Female culex mosquito
(4) None of these
16. Which is the only metal which is found in liquid at room temperature?
- (1) Helium (2) Copper
(3) Mercury (4) None of these
17. Which is not an example for combustion?
- (1) Reaction in the sun
(2) Reaction of food in our body
(3) Burning of metals in air
(4) None of these
18. What will be the colour of litmus when it is dipped in magnesium oxide solution?
- (1) Red (2) Blue
(3) Green (4) None of these
19. Which of the following metal do not react with water or steam?
- (1) Aluminium (2) Zinc
(3) Copper (4) None of these
20. Which of the following is harder than other plastics and is a good electrical insulator?
- (1) Polythene (2) Teflon
(3) Bakelite (4) None of these
21. Which of the following statements is false?
- (1) Moon is much closer to earth than the artificial satellites.
(2) Artificial satellites are used to gather information about movements of materials concerning defence activities.
(3) Artificial satellites are also used for research.
(4) None of these.

GENERAL SCIENCE

11. In agriculture, the cutting of crop after it is mature is called
- (1) Winnowing (2) Harvesting
(3) Sowing (4) None of these

22. The different fractions of petroleum are separated by
 (1) Fractional distillation (2) Evaporation
 (3) Sublimation (4) None of these
23. What is the abbreviation for PCRA?
 (1) Petrol Control Research Authority
 (2) Petroleum Conservation Research Authority
 (3) Pollution Control Research Association
 (4) None of these.
24. Carbondioxide can be produced by
 (1) Washing soda (2) Glass
 (3) Baking soda (4) None of these
25. Porters place a round piece of cloth on their head, when they carry heavy loads. This is because
 (1) By doing this the area of contact of the load with their head is decreased, there by becoming easy to carry the load.
 (2) By doing this they increase the area of contact of the load with their head, so that pressure on the head is reduced there by becoming easy to carry the load.
 (3) By doing this their head will look fashionable, there by becoming easy to carry the load.
 (4) None of these
26. We find it difficult to balance our body when we walk on ice or on roller skates. This is because
 (1) Friction offered in these situations is small.
 (2) Friction makes it difficult to walk on ice or on roller skates.
 (3) The force acting on the body is perpendicular to its surface.
 (4) None of these
27. Which of the following is a redox reaction?
 (1) $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$
 (2) $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$
 (3) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
 (4) None of these
28. The loudness or softness of a sound is determined basically by its
 (1) Wavelength (2) Amplitude
 (3) Frequency (4) None of these
29. The ropes used for climbing mountains are made of
 (1) Nylon (2) Rayon
 (3) Acrylic (4) None of these
30. Why the knives used for cutting fruits have sharp edges?
 (1) To decrease the friction
 (2) To increase the pressure
 (3) To decrease the pressure
 (4) None of these
31. Change of gaseous state directly to solid state without going through liquid state and vice versa
 (1) Evaporation (2) Freezing
 (3) Sublimation (4) None of these
32. Mycobacterium tuberculosis is responsible for which of the following diseases ?
 (1) Rabies (2) TB
 (3) Chicken pox (4) None of these
33. The electric charges produced by rubbing are called
 (1) Like charges (2) Static charges
 (3) Unlike charges (4) None of these
34. The image formed in a plane mirror is side ways reversed. This phenomenon is called
 (1) Dispersion (2) Refraction
 (3) Lateral inversion (4) None of these
35. The system of scientific naming or nomenclature that we use today was introduced by
 (1) Carolus Linnaeus (2) Aristotle
 (3) Robert whittaker (4) None of these
36. The major characteristics considered for classifying all organisms into 5 major kingdoms are
 (1) Whether they are made of prokaryotic or eukaryotic cells.
 (2) Whether the cells are living singly or organised into multicellular and thus complex organisms
 (3) Both 1 and 2
 (4) None of these
37. It is convenient to pull luggage fitted with rollers. Which type of friction will be reduced by fitting rollers?
 (1) Sliding friction (2) Drag
 (3) Rolling friction (4) None of these
38. The 3 atomic species namely Protium (${}^1_1\text{H}$), Deuterium (${}^2_1\text{H}$) and Tritium (${}^3_1\text{H}$) are the
 (1) Isotopes of hydrogen atom
 (2) Isobars of hydrogen atom
 (3) Neutrons of hydrogen atom
 (4) None of these
39. People going at high altitudes find it difficult to breath. This is due to
 (1) Increase in air pressure
 (2) Decrease in activity of respiratory system
 (3) Decrease in air pressure
 (4) None of these
40. When we stand on loose sand our feet goes deep into the sand. But when we lie down our body will not go that deep in the sand. This is because
 (1) The effect of thrust on sand is larger while standing than while lying
 (2) The effect of thrust on sand is less while standing than while lying

- (3) The effect of thrust on sand on standing will be the same as that while lying
- (4) None of these

ETG INTERACTIVE SECTION

41. Figure A

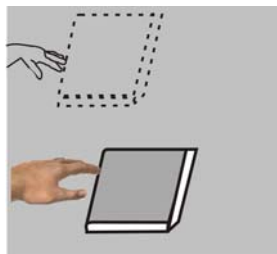
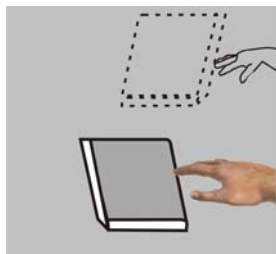


Figure B



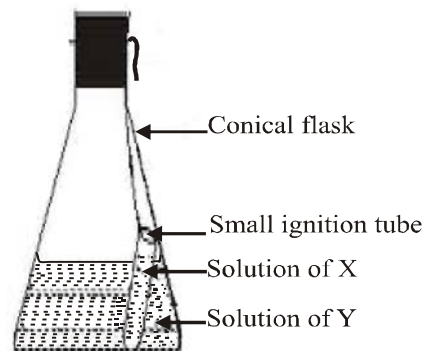
Gently push a book on a table. It stops after moving for some distance (Fig. A) Repeat this by pushing the book from the opposite direction (Fig. B). This force acting on the book opposing its motion is called

- (1) Electrostatic force (2) Gravitational force
 (3) Frictional force (4) None of these
42. On heating, temperature of the system does not change
- (1) After the melting point is reached, till the entire solid melts
 (2) Before the melting point is reached, till the entire solid melts.
 (3) Till solid completely changes into vapour
 (4) None of these
43. The basic form of matter that cannot be broken down by chemical reaction into simpler substances
- (1) Mixture (2) Compound
 (3) Element (4) None of these
44. The second law of motion states that
- (1) A body continues to be in a state of rest or uniform motion along a straight line unless acted upon by an unbalanced force.
 (2) The momentum of a body is the product of its mass and velocity and has the same direction as that of velocity.
 (3) To every action there is an equal and opposite reaction and they act on two different bodies.
 (4) None of these.
45. Take 5 ml of freshly prepared sodium hydroxide in a test tube. Put a piece of aluminium foil into it and bring a burning match stick near the mouth of the test tube. The 'pop' sound indicates the presence of
- (1) Helium (2) Hydrogen
 (3) Oxygen (4) None of these
46. Solid carbondioxide is also known as dry ice. This is because
- (1) Solid carbondioxide gets converted directly to gaseous state on decrease of pressure to 1 atmosphere without

coming into liquid state.

- (2) Solid carbondioxide gets converted directly to gaseous state on increase of pressure to 1 atmosphere without coming into liquid state.
 (3) Solid carbondioxide gets converted directly to liquid state on decrease of pressure to 1 atmosphere without coming into gaseous state.
 (4) None of these

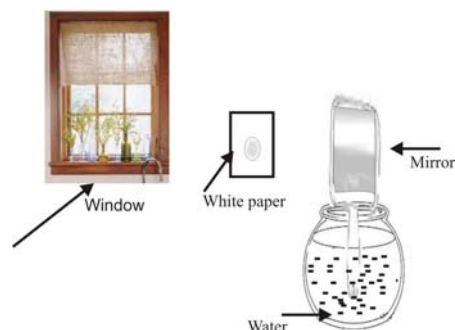
47.



Take a solution of X and Y (X = Copper Sulphate, Y = Sodium Carbonate). Take a little amount of Y in the conical flask and some solution of X in an ignition tube. Hang the ignition tube in the flask carefully so that the solutions do not mix. Put a cork on the flask. Weigh the flask with its contents carefully. Now tilt and swirl the flask so that the solutions X and Y get mixed. Weigh again. The mass of the flask and its contents does not change. This is because

- (1) Law of conservation of mass states that mass can be created not destroyed in a chemical reaction.
 (2) Law of conservation of mass states that mass can neither be created nor destroyed in a chemical reaction
 (3) In a chemical substance the elements are always present in definite proportions by mass.
 (4) None of these

48.



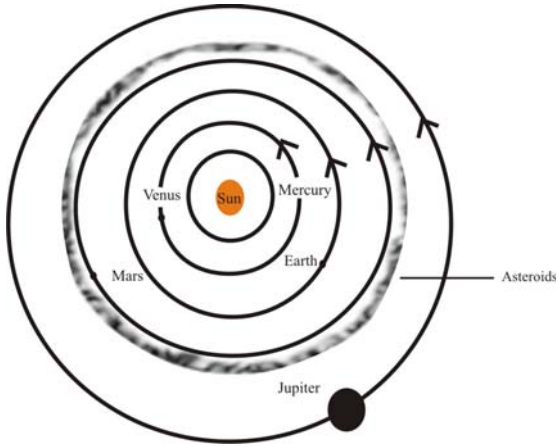
Place a plane mirror in a bowl filled with water. Put this arrangement near a window in such a way that direct sunlight falls on the mirror. Adjust the position of the bowl so that the reflected light from the mirror falls on the wall which has a white paper fixed on it. The reflected light will be seen to have many colours. This is due to

- (1) The light from the plane mirror undergoing lateral

inversion .

2. Diffused reflection taking place.
3. Splitting of light into its constituent colours known as dispersion.
4. None of these.

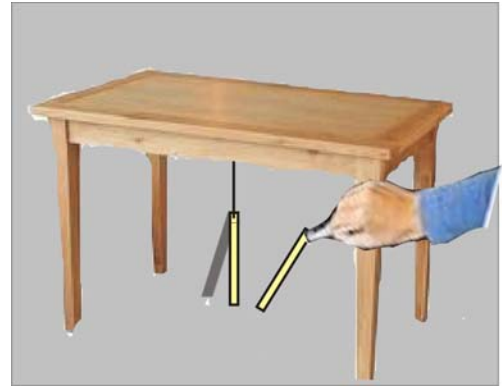
49.



In the solar system, the planets revolve around the sun in their own orbits. But there is a large gap in between the orbits of Mars and Jupiter. This gap is occupied by a large number of small objects that revolve around the sun. These are called.

- (1) Meteors
- (2) Asteroids
- (3) Comets
- (4) None of these

50.



Take a plastic straw and cut it into two equal pieces. Suspend one of the pieces from the edge of a table with help of thread. Rub the other piece of straw with a sheet of paper. Bring the rubbed end of the straw near the suspended straw without touching each other. We can see that the straw rubbed with paper attracts the other straw. This is because

- (1) A straw is said to have acquired electrostatic charge after it has been rubbed with a sheet of a paper.
- (2) The straw has acquired a contact force after it has been rubbed with a sheet of paper.
- (3) It is because of magnetic force the straws were attracted to each other
- (4) None of these



END OF THE EXAM