



EDUHEAL FOUNDATION

CLASS 9

LEVEL - 1

Set A1

EHF OLYMPIADS

- 4000 schools • 6 lakh students
- 11 olympiads • Global reach



EHF

NATIONAL INTERACTIVE SCIENCE OLYMPIAD

Name :

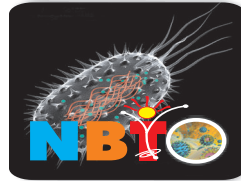
Roll No :

Class :

School :



NATIONAL BIOTECHNOLOGY OLYMPIAD



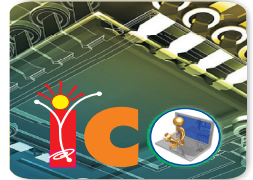
NATIONAL INTERACTIVE MATHS OLYMPIAD



NATIONAL INTERACTIVE SCIENCE OLYMPIAD



INTERNATIONAL CYBER OLYMPIAD



INTERNATIONAL ENGLISH OLYMPIAD



INTERNATIONAL GENERAL KNOWLEDGE OLYMPIAD



BSE international finance olympiad (BIFO)



NATIONAL IIT-PMT OLYMPIAD (NIPO)

Instructions for the Candidate

1. You are allowed additional 10 minutes to fill the required details in the RESPONSE SHEET (OMR).
2. The question paper is made as per syllabus guidelines & pattern given in the information Booklet. The Question Paper for Classes 1 to 6 contains 40 Questions each to be answered in 60 minutes. The Question paper for classes 7 to 11 contains 60 Questions each to be answered in 60 minutes. All questions are compulsory. Further instructions are given in the instruction letter to the teacher.
3. 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.

WEBSITE : WWW.EDUHEALFOUNDATION.ORG
E-MAIL : INFO@EDUHEALFOUNDATION.ORG

ROUGH WORK

GENERAL IQ

1. Complete the following letter series:

M B O C V D S E Z F ?

- (1) G
- (2) X
- (3) C
- (4) J

2. Find the relation of third word

ADE : FIJ :: KNO : ?

- (1) TSQ
- (2) PST
- (3) RPS
- (4) MNQ

3. Write the value of $F + K - C$.

- (1) 13
- (2) 25
- (3) 14
- (4) 19

4. In order to write counting up to 100, how many times the key of the typewriter will have to be pressed?

- (1) 192
- (2) 292
- (3) 175
- (4) 376

5. How often does the sum of 814590 and 54306 contain their difference?

- (1) 5 times
- (2) 6 times
- (3) 7 times
- (4) 8 times

6. Find the missing term:

100, 144, 196, 256, _____

- (1) 324
- (2) 400
- (3) 289
- (4) 484

7. Choose the odd one which is different from rest.

- (1) 512
- (2) 729
- (3) 1728
- (4) 3275

8. In a certain language, if SON = 33, AMIT = 65, then RADHA = ?

- (1) 113
- (2) 123
- (3) 103
- (4) 129

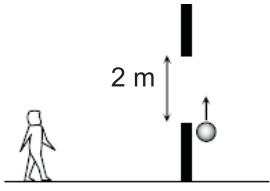
9. One day Ram left office and cycled 10 km southwards, turned right and cycled 5 km then turned right and cycled 10 km and again turned left and cycled 10 km. How many kms will he have to cycle to reach his office straight?

- (1) 10 km
- (2) 15 km
- (3) 20 km
- (4) 25 km

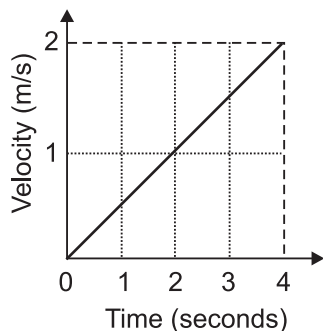
10. In a group of cows and hens, the number of legs are 14 more than twice the number of heads. The number of cows is

- (1) 5
- (2) 7
- (3) 10
- (4) 12

GENERAL SCIENCE

11. A closed compartment containing a gas is moving with some acceleration in horizontal direction. Neglect effect of gravity. Then the pressure in the compartment is
- (1) same everywhere
 - (2) lower in the front side
 - (3) lower in the rear side
 - (4) higher in the upper side
12. A planet is in circular orbit around the Sun. Its distance from the Sun is four times the average distance of Earth from the Sun. The period of this planet, in Earth years, is
- (1) 4
 - (2) 8
 - (3) 16
 - (4) 64
13. A resultant force of 20 N gives a body of mass m an acceleration of 8 m/s^2 and a body of mass m' acceleration of 24 m/s^2 . What acceleration will this force cause the two masses to acquire if fastened together?
- (1) 6 m/s^2
 - (2) 12 m/s^2
 - (3) 18 m/s^2
 - (4) 24 m/s^2
14. Addition of potassium nitrate to ice results in
- (1) Increase in melting point
 - (2) Decrease in melting point
 - (3) Change in colour of ice
 - (4) Both (1) and (3)
15. The formula of the phosphate of an element R is RPO_4 , then the formulae of its hydroxide and sulphide respectively are _____ and _____.
- (1) R(OH)_3 and R_3S_2
 - (2) R(OH)_2 and R_2S_3
 - (3) R(OH)_2 and R_3S_2
 - (4) R(OH)_3 and R_2S_3
16. Sodium sulphate and barium sulphate mixture can be separated by
- (1) Crystallization
 - (2) Chromatography
 - (3) Fractional distillation
 - (4) Filtration and crystallization
17. Which of the following gas is a CFC that is used in refrigerator?
- (1) Methane
 - (2) Ammonia
 - (3) Carbon dioxide
 - (4) Freon
18. "Operation flood" is related to
- (1) Green Revolution
 - (2) Brown Revolution
 - (3) White Revolution (Milk Production)
 - (4) Flood and Disaster Management
19. A boy spots a ball that goes up past an open window. The ball, which passes very close to the window, is in view of the boy for 0.25 s while going up, and the top-to-bottom height of the window is 2.0 m. What is the ball's upward velocity at the bottom of the window? (Take $g = 10 \text{ m/s}^2$)
- 
- (1) 8.00 m/s
 - (2) 8.575 m/s
 - (3) 9.25 m/s
 - (4) 18.5 m/s
20. A certain object floats in fluids of density
1. $0.9\rho_0$
 2. ρ_0
 3. $1.1\rho_0$
- Rank these fluids according to the volume displaced by the object, least to greatest.
- (1) 1, 2, 3
 - (2) 3, 2, 1
 - (3) 2, 3, 1
 - (4) 3, 1, 2

21. The velocity-time graph of a particle of mass 50 g moving in a fixed direction is as shown in figure. The force on the particle is



- (1) 25 N
 (2) 25×10^{-1} N
 (3) 25×10^2 N
 (4) 25×10^{-3} N
22. Which one of the following is a correct statement?
 (P) Ice provides more cooling effect than water at 273 K.
 (Q) Evaporation of a liquid causes cooling.
 (R) Increase of Pressure decreases the separation between the particles of matter.
- (1) P and Q
 (2) P and R
 (3) Q and R
 (4) P, Q and R
23. Pressure of a gas is due to
 (1) space between the gas molecules.
 (2) molecular impact on the wall of the container.
 (3) intermolecular collisions.
 (4) high kinetic energy of the gas molecule.
24. The ratio of oxygen atoms present in one molecule of cupric nitrite and ferric sulphate is
 (1) 4 : 9
 (2) 2 : 3
 (3) 1 : 2
 (4) 1 : 3

25. P, Q, R, S are four gases. If the order of their critical temperature is as follows: $S < Q < R < P$, which of the following gas has the highest boiling point?

- (1) P (2) Q
 (3) R (4) S

26. Write the formula of ammonium carbonate.

- (1) $(\text{NH}_4)_2\text{CO}_3$ (2) $(\text{NH}_4)_3\text{CO}_3$
 (3) $(\text{NH}_3)_2\text{CO}_2$ (4) $(\text{NH}_3)_4\text{CO}_3$

27. Write the valency of sulphur in H_2S , SO_2 and SO_3 .

- (1) 1, 2, 3
 (2) 2, 3, 1
 (3) 2, 4, 6
 (4) 4, 2, 6

28. $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$ (Relative atomic masses C = 12, O = 16). The ratio of their masses to form one mole CO_2 is

- (1) 1 : 2
 (2) 2 : 1
 (3) 8 : 3
 (4) 3 : 8

29. To verify the law of conservation of mass, a student added 5 mL 10% Barium Chloride into 5 mL 10% sodium sulphate solution. Which of the following is the correct observation?

- (1) Yellow precipitate is formed.
 (2) The solution turn to pink colour.
 (3) White precipitate is formed.
 (4) A clear solution is formed.

30. What will happen if plasma membrane of a cell punctures?

- (1) It will repair by itself.
 (2) An adjacent cell merges with it and shares its membrane.
 (3) The cell will die.
 (4) Both (1) and (2)

31. Write the name of phylum to which Hydra and Sea anemone belong.

- (1) Coelenterata
- (2) Annelida
- (3) Mollusca
- (4) Echinodermata

32. Observe the pictures of the honeybee and cockroach. What is the common feature that assigns them to the same phylum?

- (1) Three pairs of legs
- (2) Jointed appendages
- (3) Wings
- (4) Antennae



33. Among the following which one is not the member of Arthropoda?

- (1) Cockroach
- (2) Octopus
- (3) Mosquito
- (4) Spider

34. Space found between the cells of the connective tissue is called

- (1) Lateral meristem
- (2) Matrix
- (3) Stomata
- (4) Epithelial Tissue

35. Identify the type of tissue in the Lining of Kidney tubule.

- (1) Stratified squamous epithelium
- (2) Cardiac muscles
- (3) Cuboidal epithelium
- (4) All of these

36. A Sedan car of mass 200 kg is moving with a certain velocity. It is brought to rest by the application of brakes, within a distance of 20 m when the average

resistance being offered to it is 500 N. What was the velocity of the motor car?

- (1) 20 m/s
- (2) 10 m/s
- (3) 30 m/s
- (4) 35 m/s

37. In which of the following cases the object does not possess an acceleration or retardation when it moves in

- (1) upward direction with decreasing speed
- (2) downward direction with increasing speed
- (3) with constant speed along circular path
- (4) with constant speed along horizontal path

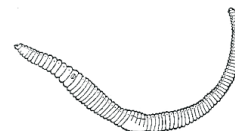
38. In a compound like ammonia, ratio of mass of nitrogen to mass of hydrogen is always

- (1) 14.3
- (2) 12.3
- (3) 15.3
- (4) 16.3

39. A particle moves with uniform positive acceleration. Its velocity-time graph will be

- (1) a straight line parallel to the time axis
- (2) a straight line inclined at an obtuse angle to the time axis
- (3) a straight line inclined at an acute angle to the time axis
- (4) a straight line parallel to the velocity axis

40. In the figure of an earthworm given below, the horizontal lines throughout the body represent:



- (1) cells of the body.
- (2) cell walls separating the cells of the body.
- (3) vertically arranged muscles of the body.
- (4) septa separating segments of the body.

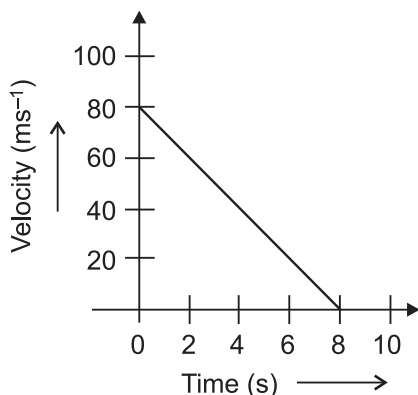
INTERACTIVE SECTION

41. Rajiv found out the role of spiracle in a cockroach as
- (1) Excretion
 - (2) Circulation
 - (3) Respiration
 - (4) Movement
42. In the experiment of verification of reflection of sound, the incident sound is directed along
- (1) Axis of tube.
 - (2) Normal to the axis of the tube.
 - (3) At an angle of 30° from the axis of the tube.
 - (4) At an angle of 45° from the axis of the tube.
43. A student while verifying laws of reflection of sound measured the angle between the incident sound wave and reflected sound wave as 110° . The angle of reflection is
- (1) 110°
 - (2) 55°
 - (3) 27°
 - (4) 0
44. During the experiment on measurement of loss in weight of solid in tap water and salty solution, the maximum loss in the weight of the body is observed when
- (1) it touches the surface of the liquid
 - (2) it is completely immersed in the liquid
 - (3) it is partially immersed in the liquid
 - (4) no difference in loss in weight in above three cases
45. The least count of a spring balance is 1 g wt. When it is suspended freely without any weight attached to the hook, the pointer is just in front of second small division on the scale. The zero error is
- (1) -2 g wt
 - (2) $+2$ g wt
 - (3) zero
 - (4) $+1$ g wt
46. A student noted down the following observations in his notebook:
- (i) Weight of the stone in air = 272 g wt
 - (ii) Weight of the stone in water = 192 g wt
 - (iii) Weight of the stone in salty water = 176 g wt
- The relative density of the salty water must be
- (1) 11/12
 - (2) 11/17
 - (3) 13/17
 - (4) 6/5
47. A specimen of a fish was given to students to identify the externally visible chordate feature in it. The student would look for
- (1) operculum
 - (2) notochord
 - (3) dorsal tubular nerve chord
 - (4) post anal tail
48. In a graduated measuring cylinder there are four additional marks between 0 ml and 5 ml marks. Using this measuring cylinder we can find volume to an accuracy of
- (1) 1 ml
 - (2) 4 ml
 - (3) 1/4 ml
 - (4) 1/5 ml
49. Where will you find options to add or remove the background colour or style of a chart?
- (1) Under the design tab in the chart layouts group.
 - (2) Under the design tab in the chart styles gallery.
 - (3) Under the format tab in the shape styles group.
 - (4) Under the layout tab in the insert group.
50. Body of the bony fish does not show gills as they are covered by
- (1) Scales
 - (2) Operculum
 - (3) Fins
 - (4) Skin

51. A cricket ball of mass 0.5 kg strikes a bat normally with a velocity of 30 ms^{-1} and rebounds with a velocity of 20 ms^{-1} in the opposite direction. The impulse of the force exerted by the ball on the bat is

- (1) 0.5 Ns
- (2) 1.0 Ns
- (3) 25 Ns
- (4) 50 Ns

52. Velocity versus time graph of a ball of mass 50 g rolling on a concrete floor is shown below. Calculate the acceleration and the frictional force of the floor on the ball?



- (1) 10 ms^{-2} , 0.5 N
- (2) 20 ms^{-2} , 1.5 N
- (3) 30 ms^{-2} , 2.5 N
- (4) 40 ms^{-2} , 3.5 N

53. A man is in a car is moving with a velocity of 36 km/hr. His speed with respect to the car is

- (1) 10 m/s
- (2) 36 m/s
- (3) zero
- (4) infinite

54. In the chemical reaction $\text{C}_8\text{H}_{18} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$, the coefficient of CO_2 in the balanced equation is

- (1) 16
- (2) 28
- (3) 18
- (4) 25

55. Number of free surfaces a gas exhibit are

- (1) 1
- (2) 5
- (3) Zero
- (4) Any number

56. The percentage of impurity in 18 carat gold is

- (1) 75%
- (2) 25%
- (3) 18%
- (4) 4%

57. Elliptical orbits were proposed by

- (1) Neil's Bohr
- (2) Rutherford
- (3) Sommerfeld
- (4) Max Plank

58. Seema visited a Natural Gas Compressing Unit and found that the gas can be liquefied under specific conditions of temperature and pressure. While sharing her experience with friends she got confused. Help her to identify the correct set of conditions.

- (1) Low temperature, low pressure
- (2) High temperature, low pressure
- (3) Low temperature, high pressure
- (4) High temperature, high pressure

59. Choose the complex fertilizer.

- (1) Potassium sulphate
- (2) Calcium ammonium nitrate
- (3) Triple super phosphate
- (4) Urea ammonium phosphate

60. Which of the following elements will be affected if you select a different theme to apply to a slideshow presentation?

- (1) Tables will change colour.
- (2) Fonts applied will change in type and size.
- (3) Shapes will change colour.
- (4) All of the above options are correct.



END OF THE EXAM