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Level - 1 : All Level-1 successful* participants will get certificate, aptitude report and online subscription, and school toppers will be eligible for school hero medals.

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Level - 3 : Toppers 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.

*# See prospectus/website for details

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 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 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.**

EHF
NATIONAL
IIT-PMT
OLYMPIAD

N I P O

6
Class

A1
Paper
Code

L E V E L - 1

SCIENCE

1. An electric switch is used for
 - (1) Making or breaking an electric circuit.
 - (2) Helping current to pass through wires.
 - (3) Providing voltage to the electric circuit.
 - (4) None of these
2. A student standing in sunlight in an open ground analyses the length of his shadow at various times. At what time of the day will he find the length of his shadow to be the smallest?
 - (1) Early morning
 - (2) Afternoon
 - (3) Evening
 - (4) None of these
3. A speed of 50 m/s is equivalent to
 - (1) 150 kmph
 - (2) 175 kmph
 - (3) 180 kmph
 - (4) None of these
4. A car is said to be moving in a uniform motion, when the car is travelling
 - (1) In a straight line with constant speed
 - (2) In a straight line with increasing speed
 - (3) In a straight line with decreasing speed
 - (4) None of these
5. A simple pendulum takes 32 seconds to complete 20 oscillations. What is the time period of the pendulum?
 - (1) 1.6 s
 - (2) 0.8 s
 - (3) 3.2 s
 - (4) None of these

- 6. The use of a fuse in an electrical circuit is to**
- (1) Avoid the passage of excess large current in the circuit
 - (2) Allow larger current in the circuit.
 - (3) Allow larger voltages in the circuit
 - (4) None of these
- 7. Matter occupies space and has**
- (1) Colour (2) Smell
 - (3) Mass (4) None of these
- 8. Amount of water on earth is**
- (1) Increasing (2) Decreasing
 - (3) Constant (4) None of these
- 9. Air is**
- (1) Homogeneous mixture
 - (2) A gaseous mixture
 - (3) Both (1) and (2)
 - (4) None of these
- 10. Which of the following method is used to separate sand from water?**
- (1) Sedimentation (2) Crystallization
 - (3) Distillation (4) None of these
- 11. Pressure has least effect on**
- (1) Solids (2) Liquids
 - (3) Gases (4) None of these
- 12. Brass is**
- (1) Homogeneous mixture
 - (2) Alloy
 - (3) Both (1) and (2)
 - (4) None of these
- 13. Carbohydrates are**
- (1) Body-building food
 - (2) Protective food
 - (3) Energy-providing food
 - (4) None of these
- 14. The ability of living organisms to respond to stimuli is called**
- (1) Reactivity
 - (2) Sensitivity
 - (3) Stimuli
 - (4) None of these
- 15. For which of the following will a vaccine not be available?**
- (1) Chicken pox
 - (2) Diarrhoea
 - (3) Measles
 - (4) None of these
- 16. Which of the following processes involves the escaping of nitrogen into air from decaying matter?**
- (1) Nitrification (2) Denitrification
 - (3) Nitrogen fixation (4) None of these
- 17. The bones are held together at a joint by tough structure called**
- (1) Muscle (2) Ligament
 - (3) Tendons (4) None of these
- 18. Ben wants to select a material to make a hammock. Which of the properties given below should he consider?**
- (1) Hard and water proof
 - (2) Strong and flexible
 - (3) Transparent and flexible
 - (4) None of these
- 19. Sieving can be used only when the components of the mixture have**
- (1) Different sizes
 - (2) Different melting points
 - (3) Different specific gravities
 - (4) None of these
- 20. A few coloured glass pieces that are big in size are mixed with sugar. Which is the easiest way to separate them?**
- (1) Heat the mixture
 - (2) Add the mixture to water
 - (3) Handpick the glass pieces
 - (4) None of these
- 21. What is the process we use to separate a mixture of water and sulphur ?**
- (1) Filtration
 - (2) Sublimation
 - (3) Evaporation
 - (4) None of these

- 22. What is a homogeneous mixture?**
 (1) It is made up of only elements
 (2) It contains only compounds
 (3) It is that in which constituents can't be distinguished
 (4) None of these
- 23. Milk curdles when lemon juice is added. What is this?**
 (1) Evaporation (2) Coagulation
 (3) Reversible change (4) None of these
- 24. Surender took an empty plastic bottle, turned it upside down and dipped its open mouth into a bucket filled with water. He then tilted the bottle slightly and made the following observations.**
 (i) Bubbles of air came out from the bottle.
 (ii) Some water entered the bottle.
 (iii) Nitrogen gas came out in the form of bubbles and oxygen got dissolved in water.
 (iv) No bubbles formed, only water entered the bottle.
Which observation(s) is/are correct?
 (1) (i) and (ii) (3) (iv) only
 (2) (iii) and (iv) (4) None of these
- 25. Usha took a lump of dry soil in a glass and added water to it till it was completely immersed. She observed bubbles coming out. The bubbles contain**
 (1) water vapour (2) only oxygen gas
 (3) air (4) None of these

MATHEMATICS

- 26. Which of the following is not a whole number?**
 (1) $5 - 4$ (2) $(10 \div 4) + (3 \div 2)$
 (3) $17 + 18 - 36$ (4) None of these
- 27. Which one is identity element for multiplication?**
 (1) 0 (2) 1
 (3) -1 (4) None of these
- 28. How many prime factors are there in 24?**
 (1) 4 (2) 3
 (3) 2 (4) None of these
- 29. $2 \times (x + y) = 2 \times x + 2 \times y$, where x and y are whole numbers. Which law has been applied in the above relation?**
 (1) Associativity
 (2) Commutative law

- (3) Distributivity of multiplication over addition
 (4) None of these
- 30. The HCF of two consecutive natural numbers is**
 (1) Even number (2) Prime number
 (3) Odd number (4) None of these
- 31. The length of a largest chord of a circle whose radius is 5 cm is**
 (1) 5 cm (2) 2 cm
 (3) 10 cm (4) None of these
- 32. The value of the expression $30 + (-30) - (-49) + (-49)$ is**
 (1) 60 (2) -98
 (3) 0 (4) None of these
- 33. In a class A of 50 students, 45 passed in 1st class, in another class B of 40 students, 35 passed in 1st class. In which class was a greater fraction of students getting 1st class?**
 (1) Class A (2) Class B
 (3) Same fraction (4) None of these
- 34. If $a > 2$, (a is natural number), then fill in the blank with proper relation, $1/a \dots 1/2$**
 (1) $>$ (2) $<$
 (3) $=$ (4) None of these
- 35. The length of a rectangular park is twice of its breadth. Then the ratio of its perimeter and its breadth is**
 (1) 1 : 2 (2) 2 : 1
 (3) 6 : 1 (4) None of these
- 36. If $x @ P = x$, (x and P are whole numbers), then we call P is the identity element. Symbol “@” stands for usual addition. Then the value of P is**
 (1) 1 (2) x
 (3) 0 (4) None of these
- 37. The least number which when divided by 12, 74, 148 and 222 leaves a remainder 6 in each case is**
 (1) 444 (2) 438
 (3) 450 (4) None of these
- 38. The perimeter of a regular octagon in which each side measuring 10 cm, is**
 (1) 10 cm (2) 80 cm
 (3) 8 m (4) None of these

- 39.** Area of a square field is 16 sq.m. Then the ratio of the one side of the square to the area of square field is
 (1) 4 : 1 (2) 1 : 4
 (3) 16 : 1 (4) None of these
- 40.** 20, 30, p and 3 are in proportion. Then the value of p is
 (1) 20 (2) 1
 (3) 2 (4) None of these
- 41.** The ratio of age of father and his son is 3 : 1. Given the sum of the age of them is 60 years. Then the age of son is
 (1) 15 years (2) 45 years
 (3) 20 years (4) None of these
- 42.** Let $x @ p = 3$, where @ stands for "+" and p is the identity element. Then the value of x is
 (1) 0 (2) 1
 (3) 3 (4) None of these
- 43.** A floor is 10 m long and 6 m wide. A square carpet of side 5 m is laid on the floor. What is the area of the floor that is not carpeted?
 (1) 35 sq. m (2) 10 sq. m
 (3) 60 sq. m (4) None of these
- 44.** Michael wants to cover the floor of a room 4 m wide and 5 m long by squared tiles. If each square tile is of side 0.5 m, then what is the number of tiles required to cover the floor of the room?
 (1) 80 tiles (2) 20 tiles
 (3) 40 tiles (4) None of these
- 45.** After numbering the pages of his project report from 1 to the last page, Tom found that he had written 19 digits in all. How many pages did the report contain?
 (1) 9 (2) 14
 (3) 16 (4) None of these
- 46.** $9 + 9 + 9 + 9 + 9 + 9 - 9 - 9 = ___ \times 9$. What number should come in the blank?
 (1) 7 (2) 6
 (3) 4 (4) None of these
- 47.** The smallest positive number which is a multiple of both 40 and 50 is
 (1) 10 (2) 200
 (3) 400 (4) None of these
- 48.** How many 4-digit odd numbers can you make using the digits 5, 3, 8, 0 without repeating any digit?
 (1) 8 (2) 12
 (3) 16 (4) None of these
- 49.** Fill in the blanks $100 + 5y = 9y + \dots$, then $y = 500$
 (1) 1800 (2) -1800
 (3) 1890 (4) None of these
- 50.** A movie theatre has eleven rows of seats. The rows are numbered from 1 to 11. Odd numbered rows have 15 seats and even numbered rows have 16 seats. How many seats are there in the theatre?
 (1) 186
 (2) 170
 (3) 165
 (4) None of these



END OF THE EXAM