Nation's No. 1

INDIAN TALENT Olympiad

National Science Indian Talent Olympiad

Class 8

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO

Total Question : 50 | **Time : 65 min.**

INSTRUCTIONS FOR STUDENTS

1. Additional 10 minutes will be given to students to fill up the student's information before the start of the exam.
2. All questions are compulsory and carry equal marks. Use of calculator is not permitted.
3. Write and circle **Your Roll Number** and **Subject** clearly on the Answer sheet and do not forget to sign.
4. There is only one correct answer hence mark one choice only.
5. Darken your choice with **HB Pencil** or **Blue/ Black Ball Point Pen** only.
   For example
   Q.16: What does the moon revolve around
   (A) The Sun
   (B) The Earth
   (C) Mars
   (D) Venus

   16: Ⓐ ● Ⓒ Ⓓ

   As the correct answer is option no. (B), the student should darken the circle corresponding to option no. (B)
6. Rough work should be done in the blank space provided in the booklet.
7. Return the answer sheet to the in-charge teacher at the end of the exam.

NAME _____

ROLL NO. | | | | | | | | | | | |

01. Which of the following parts of the sun is easily visible only during a total solar eclipse?
a. core b. photosphere
c. sunspots d. corona

02. Water flows through a horizontal pipe at a constant volumetric rate. At a location where the cross sectional area decreases, the velocity of the fluid
a. increases b. decreases
c. stays the same d. none of the above

03. With reference to the soil conservation, consider the following practices:
1. Crop relation
2. Sand fences
3. Terracing
4. Wind breaks
Which of the above are considered appropriate methods for soil conservation in India?
a. 1, 2 and 3 only b. 2 and 4 only
c. 1, 3 and 4 only d. 1, 2, 3 and 4

04. At present, scientists can determine the arrangement or relative positions of genes of DNA sequences on a chromosome. How does this knowledge benefit us?
1. It is possible to know the pedigree of livestock.
2. It is possible to understand the causes of all human diseases.
3. It is possible to develop disease-resistant animal breeds.
Which of the statements given above is/are correct?
a. 1 and 2 only b. 2 only
c. 1 and 3 only d. 1, 2 and 3

05. The wonder pigment chlorophyll is present in
a. Mitochondria b. Centrosomes
c. Quantosomes d. Lysosomes

06. The Panda belongs to the same family as that of
a. Bear b. Cat c. Dog d. Rabbit

07. With reference to the evolution of living organisms, which one of the following sequences is correct?
a. Octopus - Dolphin - Shark b. Pangolin - Tortoise - Hawk
c. Salamander - Python - Kangaroo d. Frog - Crab - Prawn

08. Which one of the following types of waves is used in a night vision apparatus?
a. Radio waves b. Microwaves
c. Infra-red waves d. None of the above

09. Which one among the following has the highest energy?
a. Blue light b. Green light
c. Red light d. Yellow light

10. Mist is caused by
a. Dry ice
b. Ice at low temperature
c. Water vapours at low temperature
d. Carbon- monoxide in solid form

11. Radioisotopes which are used in medical diagnosis are known as
a. tracers b. silver bullets
c. markers d. dyes

12. Which of the following is an important element of stainless steel?
a. chromium b. magnesium
c. copper d. nickel

13. Iodised salt is useful for men because it
a. Improves digestion
b. Increases resistance to diseases
c. Controls the thyroid gland
d. Slows down ageing process

14. Workers of paint industry are exposed to which one of the following hazards?
a. Nickel pollution b. Cadmium pollution
c. Strontium pollution d. Lead pollution

15. Which one of the following is not a radioactive element?
a. Uranium b. Radium
c. Thorium d. Cadmium

16. Which of the following vitamins helps in the absorption of calcium?
a. Vitamin A b. Vitamin B
c. Vitamin C d. Vitamin D

17. The scientist who is known as father of modern biology is
a. B. F. Skinner b. Aristotle
c. Wilhelm Wundt d. Archimedes

18. Which one among the following radiations carries maximum energy?
a. Ultraviolet rays b. Gamma rays
c. X- rays d. Infra red rays

19. What is the main constituent of coal gas?
a. Oxygen b. Water
c. Nitrogen d. Methane

20. Consider the following:
1. Carbon dioxide
2. Oxides of Nitrogen
3. Oxides of Sulphur
Which of the above is/are the emission/emissions from coal combustion at thermal power plants?
a. 1 only b. 2 and 3 only
c. 1 and 3 only d. 1, 2 and 3

21. Epicenter of an earthquake is a point associated with the
a. place where earthquake is felt
b. place of origin of earthquake in the interior of earth
c. point on the earth's surface just above seismic focus
d. point over the earth's surface where first shock is felt

22. Biological Oxygen Demand (BOD) is used as a standard measure of_____.
a. Oxygen level in forest system
b. Oxygen level in animals
c. Oxygen level in water system
d. Oxygen level in atmosphere

23. Which one of the following remains constant while throwing a ball upward?
a. Displacement b. Kinetic energy
c. Acceleration d. Velocity

24. Which of the following nutrients is not a structural component of the plant?
a. Nitrogen b. Calcium
c. Phosphorus d. Potassium

25. The smallest plants like organisms present on the earth are:
a. Algae b. Bacteria c. Fungi d. Ferns

26. Plaster of paris is made from:
a. Marble b. Gypsum c. Slaked lime d. Limestone

27. The chemical used for cooling in refrigeration is :
a. CO_2 b. NH_4Cl
c. NH_4OH d. Liquified ammonia

28. How does a Thermos keep the liquid hot a long time?
a. Because double walls of the outer covering do not allow heat to escape
b. Because it is packed with gases which release heat
c. Because it has internal heating arrangement
d. None of the above

29. Why does the ink from a fountain pen spill out when it is carried in an aeroplane?
a. Due to the low gravitational pull
b. Due to the high speed of the aeroplane
c. On account of the height at which the aeroplane flies
d. Due the low pressure in the aeroplane

30. Which vitamin is essential for the formation of blood?
a. B_{12} b. B_6 c. B_2 d. B_1

31. The faster the particles of a gas are moving, the
a. Lower their energy and higher and the higher their temperature.
b. Greater their energy and lower their temperature
c. Lower their energy and the lower their temperature.
d. Greater their energy and the higher their temperature.

32. An object weighs 100. Newtons on Earth's surface. When it is moved to point one Earth radius above Earth's surface, it will weight.
a. 100. N b. 25.0 N c. 50.0 N d. 400. N

33. A car and a loaded truck are moving with the same speed along a road. As compred to the truck, the car possesss
a. More kinetic energy b. More potential energy
c. Less kinetic energy d. More mechanical energy

34. What is the approximate velocity of the sound in air?
a. 3 m/s b. 30 m/s c. 300 m/s d. 3000 m/s

35. A hydraulic lift used at an automotive repair shop raises a 1000-kilogram car two meters off of the ground. What is the potential energy given to the car ?
a. 9800 J b. 19, 600 J c. 2000 J d. 1000 J

36. The following question is based on the following alphabet series.
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
Which alphabet comes immediately before the sixth alphabet from the left extreme of the given alphabets ?
a. E b. F c. G d. V

37. What comes in the place of question mark ?
7 : 56 : : 9 : ?
a. 63 b. 81 c. 90 d. 99

38. Q`s mother is sister of P and daughter of M. S is daughter of P and sister of T. How is M related to T ?
a. Grandmother b. Father
c. Grandfather d. Grandfather or Grandmother

39. Choose or find odd number
5698 , 7894 , 9865 , 8793 , 6958
a. 5698 b. 7894 c. 9865 d. 8793

40. In a certain code, '247' means 'spread red carpet' ; '256' means 'dust one carpet' and '234' means 'one red carpet'. Which digit in that code means 'dust'?
a. 2 b. 3 c. 5 d. 6

41. A team of five is to be selected from amongst five boys A, B, C, D and E and four girls P, Q, R and S. Some criteria for selection are :
A and S have to be together.
P cannot be put with R.
D and Q cannot be together.
C and E have to be together.
R cannot be put with B.
Unless otherwise stated, these criteria are applicable to all the question below
If two of the members have to be boys, the team will consist of :
a. A B S P Q b. A D S Q R c. B D S R Q d. C E S P Q

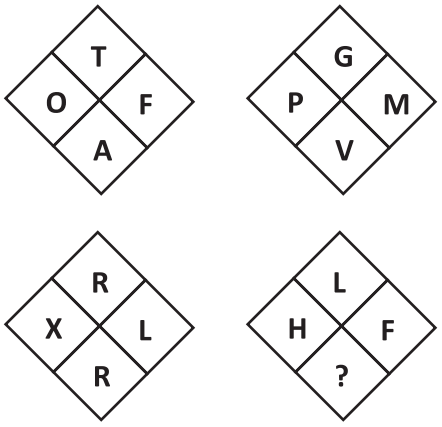
42. In the following question, a sequence of groups of alphabets and numbers is provided with one term missing , Choose the missing term from options.
MHZ, NIW, OKT, PNQ, ?

a. RRN b. QRN
c. QRM d. QQN

43. After walking 6 km, 'A' turned right and covered a distance of 2 km, then turned left and covered a distance of 5 km. In the end, 'A' was moving towards the North. In which direction did 'A' started the journey?

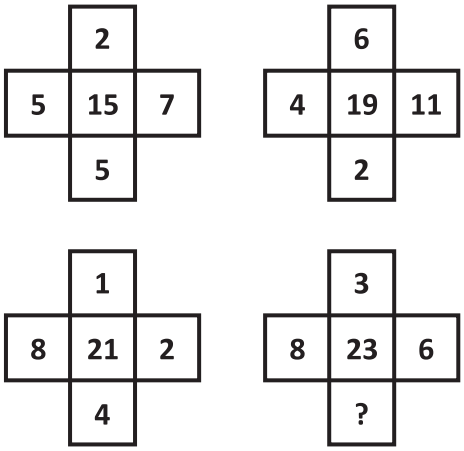
a. North b. South
c. East d. West

44. Which letter replaces the question mark?



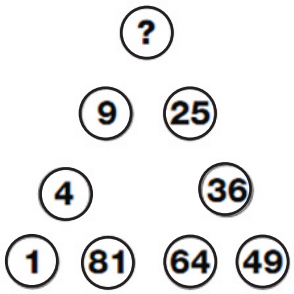
a. G b. A c. F d. B

45. Which number replaces the question mark?



a. 2 b. 4 c. 7 d. 13

46. Which number replaces the question mark?



a. 16 b. 19 c. 12 d. 23

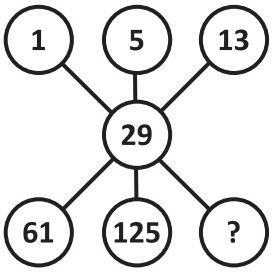
47. Which letter replaces the question mark?

a. N b. K c. G d. T

48. If P $ Q means P is the brother of Q; P # Q means P is the mother of Q; P * Q means P is the daughter of Q in A # B $ C * D, who is the father ?

a. D b. B c. C d. Data is inadequate

49. Which number replaces the question mark ?



a. 248 b. 257 c. 253 d. 263

50. Reena walked from A to B in the East 10 feet. Then she turned to the right and walked 3 feet. Again she turned to the right and walked 14 feet. How far is she from A ?

a. 4 feet b. 5 feet c. 24 feet d. 27 feet