NELTAS PATH TO EDUCATIONAL EXCELLENCE | S-CAT International Science Competition

Grade **5**

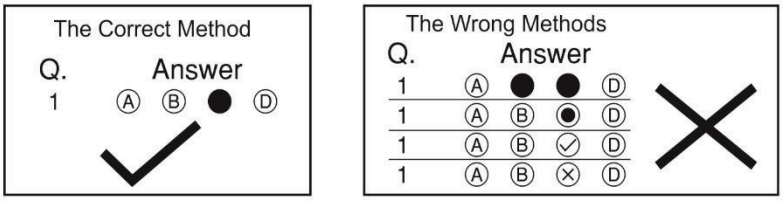
S-CAT Assessment Round Sample Question Paper

Return the answer sheet along with question paper to the invigilator at the end of the exam.

TOTAL MARKS	QUESTIONS	DURATION
100	**50**	**60 mins**

Instructions for Student:

- Read the question carefully before answering.
- Each question has 4 options (A, B, C & D).
- Choose one correct option as your answer, from the 4 options.
- Every question carries 2 marks.
- On the answer sheet blacken the correct option against the corresponding question number,



- **Use pencil to mark your answer.**
- If you wish to change your answer, erase the previous mark completely.

1. **Which of these foods is rich in proteins and helps in body-building?**
   a. Bread
   b. Fish
   c. Butter
   d. Citrus fruits

2. **Which nutrient is required by the body in small quantities to protect against diseases?**
   a. Carbohydrates
   b. Fats
   c. Proteins
   d. Vitamins

3. **How can eating a lot of junk food and not getting enough exercise lead to obesity?**
   a. It causes a deficiency in vitamins.
   b. It leads to an accumulation of fat in the body.
   c. It reduces water content in the body.
   d. It increases the amount of roughage.

4. **Why is it important to have fermented foods in our diet?**
   a. They are high in carbohydrates.
   b. They add good bacteria and nutrients to the diet.
   c. They are rich in proteins.
   d. They provide a high amount of fats.

5. **Which part of the flower produces pollen?**
   a. Ovary
   b. Anther
   c. Stigma
   d. Style

6. **What type of reproduction involves two parents?**
   a. Asexual reproduction
   b. Vegetative reproduction
   c. Sexual reproduction
   d. Binary fission

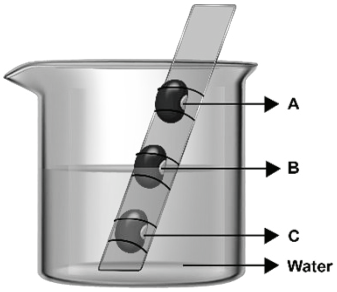
7. **Why are petals usually brightly coloured?**
   a. To protect the flower bud
   b. To produce pollen
   c. To attract pollinators
   d. To support the anther

8. **How many cotyledons do dicot seeds have?**
   a. One
   b. Two
   c. Three
   d. Four

9. Why might a seed with a hard, waterproof coat be well suited for dispersal by water?

a. It can float and travel to new locations.
b. It can attach to animal fur.
c. It can be carried by the wind.
d. It can explode and eject seeds.

10. In the three-bean experiment, which seed(s) would you expect to germinate?



a. Seed A
b. Seed B
c. Seed C
d. Both seeds A and B

11. What is the role of soaking a seed in water during germination?

a. It provides oxygen for respiration.
b. It softens the seed coat.
c. It supplies nutrients to the seed.
d. It initiates photosynthesis.

12. How many bones are in the skeleton of an adult human?

a. 206
b. 300
c. 206 or 300 depending on gender
d. 150

13. Why are the last two pairs of ribs called 'floating ribs'?

a. They do not connect to the spine.
b. They are not connected to the chest bone.
c. They are not made of bone.
d. They are made of cartilage.

14. A student pulls a rubber band that's attached to a bone model. What does the rubber band represent?

a. Skin
b. Muscle
c. Nerve
d. Blood vessel

15. If a muscle in the arm does not contract properly, which movement would be most affected?

a. Bending the elbow
b. Twisting the wrist
c. Moving fingers
d. Moving the shoulder

16. Why is it important to have cartilage between the bones in the vertebral column?
a. To provide rigidity and strength
b. To enable the bones to fuse together
c. To protect the spinal cord and allow flexible movement
d. To increase bone density

17. What is the relationship between flora and fauna in a forest ecosystem?
a. Fauna provide shelter for flora.
b. Flora and fauna are independent of each other.
c. Flora provide food and shelter for fauna, and fauna help pollinate plants and disperse seeds.
d. Fauna depend solely on human activities for survival.

18. To study the biodiversity of a forest, which of the following actions would you take?
a. Measure the height of the tallest trees.
b. Record the number and types of different plant and animal species over a period of time.
c. Analyze the soil composition.
d. Monitor the weather patterns.

19. A graph shows an increase in the number of animal species in a protected forest area over ten years. What is the most likely reason for this increase?
a. Increased human activity
b. Deforestation
c. Effective conservation measures and habitat protection
d. Climate change

20. What is the primary reason for the greenhouse effect?
a. Depletion of fossil fuels
b. High concentration of carbon dioxide
c. Increase in renewable energy usage
d. Overuse of water resources

21. Which type of fossil fuel is most suitable for domestic cooking to minimize pollution?
a. Coal
b. Kerosene
c. LPG
d. Petroleum

22. A student sets up an experiment to test which fuel produces the most heat energy. Which variable should be kept constant?
a. Type of fuel
b. Amount of fuel
c. Duration of burning
d. Heat produced

23. If data shows that natural gas usage leads to the least pollution among fossil fuels, which conclusion can be drawn?
a. Natural gas should be banned.
b. Natural gas is a renewable resource.
c. Natural gas is the worst fuel.
d. Natural gas is the best temporary solution till we find the next best option.

24. Given that steam can turn back into water when cooled, which state change is involved?

a. Melting
b. Freezing
c. Condensation
d. Sublimation

25. If a gas directly changes into a solid upon cooling, what is this process called?

a. Evaporation
b. Freezing
c. Deposition
d. Condensation

26. Which layer of the atmosphere is closest to Earth?

a. Stratosphere
b. Mesosphere
c. Thermosphere
d. Troposphere

27. When you place a card over a glass of water and invert it, why does the card stay in place?

a. Because water is heavy.
b. Because air exerts pressure upward.
c. Because the card is sticky.
d. Because air is lighter than water.

28. Which experiment demonstrates that air occupies space?

a. Inverting a bottle in water and seeing bubbles escape
b. Balancing inflated balloons on a meter scale
c. Inverting a glass filled with water and placing a card on top
d. Inflating a balloon by heating a bottle

29. What property of water allows it to dissolve many substances?

a. Surface tension
b. Solubility
c. Adhesion
d. Cohesion

30. Ritu performs an experiment to test surface tension. How can you tell if water's surface tension is working? (Hint : Look for something that stays on top of the water without sinking.)

a. Water boiling at a lower temperature
b. Insects walking on the water surface
c. Oil mixing completely with water
d. Ice melting into water

31. What is the standard unit for measuring length?

a. Handspan
b. Kilometre
c. Cubit
d. Foot span

32. What would you use to measure the weight of an ice cream cone?

a. Kilogram
b. Metre
c. Gram
d. Centimetre

33. If the height of a building is 50 m, what would be its equivalent height in cm?

a. 500 cm
b. 5000 cm
c. 50,000 cm
d. 500,000 cm

34. If you want to measure the speed of a rocket, what type of quantity would you be dealing with?

a. Fundamental quantity
b. Non-standard quantity
c. Derived quantity
d. Standard quantity

35. Which of the following is a standard unit for measuring volume?

a. Litre (L)
b. Cubic metre (m^3)
c. Both a and b
d. None of the above

36. If the side of a square is doubled, how does its area change?(Hint : Use the formula to check the answer.)

a. It remains the same.
b. It doubles.
c. It triples.
d. It becomes 4 times.

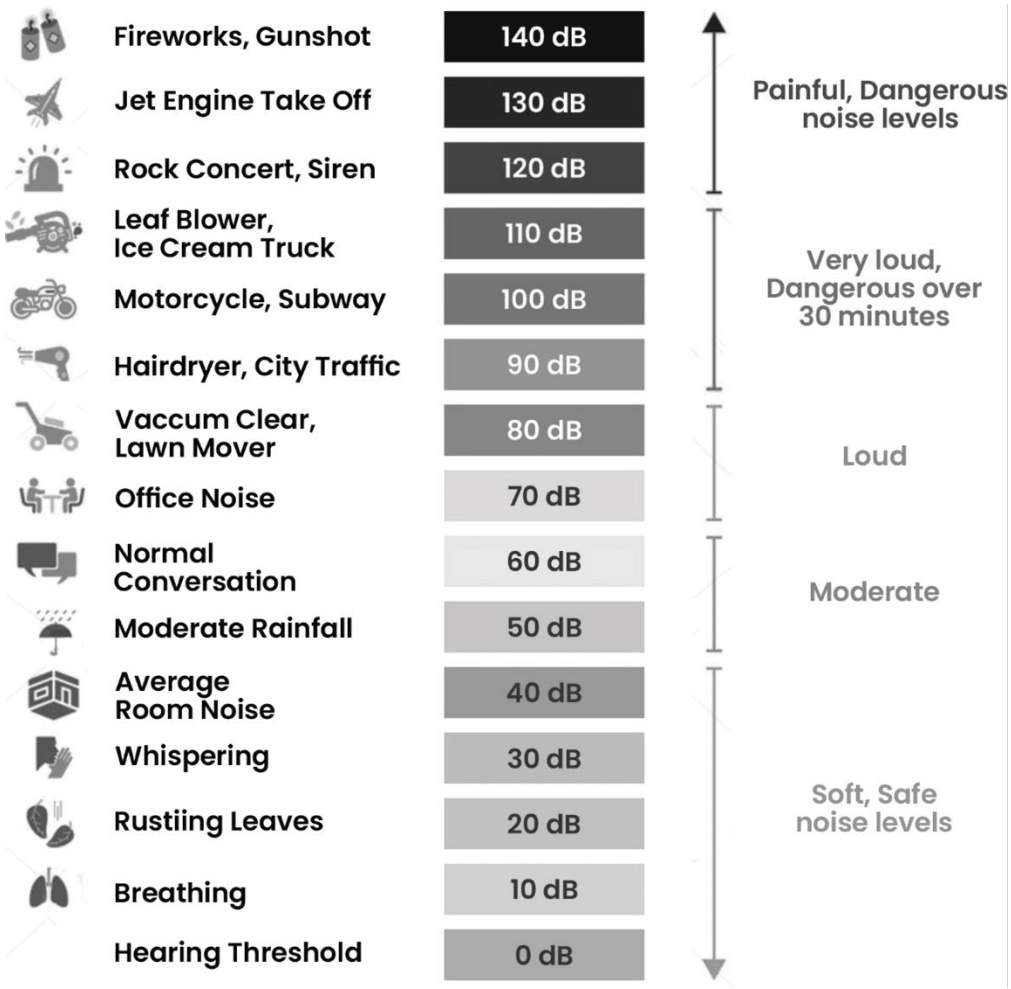
37. What unit is used to measure the frequency of sound?

a. Decibel (dB)
b. Hertz (Hz)
c. Meter (m)
d. Second (s)

38. If a guitar string vibrates 400 times in one second, what is the frequency of the sound produced?

a. 200 Hz
b. 400 Hz
c. 20 Hz
d. 20,000 Hz

39. Study the following table.



According to the data provided, which sound is most likely to cause sleep disorders?

a. Whisper (30 dB)
b. Conversation (60 dB)
c. Rock concert (120 dB)
d. None of the above

40. Which method would best test the hypothesis that planting trees reduces noise pollution?

a. Measuring the decibel levels in an area before and after planting trees
b. Listening to different sounds in a noisy environment
c. Counting the number of trees in an area
d. Observing the growth of trees over time

41. What type of energy is stored in the bonds between atoms and molecules in substances?

a. Kinetic Energy
b. Chemical Energy
c. Potential Energy
d. Electrical Energy

42. Which form of energy is converted into light energy in a light bulb?

a. Thermal Energy
b. Chemical Energy
c. Electrical Energy
d. Potential Energy

43. In which scenario would you observe heat energy change into kinetic (moving) energy?

a. A ball being thrown upwards
b. A stove heating water, causing it to boil and steam to rise
c. An electric bulb lighting up
d. A windmill generating electricity

44. If a pie chart shows that 40% of a household's energy consumption is for heating, what fraction of the energy is used for heating?

a. 1/2
b. 2/5
c. 1/4
d. 3/5

45. Which experiment could demonstrate the conversion of electrical energy to light energy?

a. Using a windmill to generate electricity
b. Lighting a bulb using a battery
c. Heating water on a stove
d. Rolling a ball down a slope

46. Which of the following objects would cast a clear shadow?

a. Glass
b. Frosted glass
c. Wax paper
d. Metal

47. Why do we need light to see objects?

a. Light reflects off objects and enters our eyes, allowing us to see.
b. Light absorbs objects and lets us see them.
c. Light produces objects for us to see.
d. Light makes objects invisible.

48. What instrument is used to measure heat?

a. Thermometer
b. Barometer
c. Meter
d. Hygrometer

49. To test the property of air expanding on heating, what materials would you need?

a. A glass of water, a card, and a meter scale
b. An empty bottle, a balloon, and boiling water
c. Two inflated balloons and a meter scale
d. A tub of water and an empty bottle

50. Why does a wooden handle on a cooking pot remain cool even when the pot is hot?

a. Wood is a good conductor of heat.
b. Wood is a good insulator of heat.
c. Wood absorbs heat quickly.
d. Wood emits heat through radiation.