



Inspiring Young Minds  
Through Knowledge Olympiads

CLASS

4

SET-B

DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

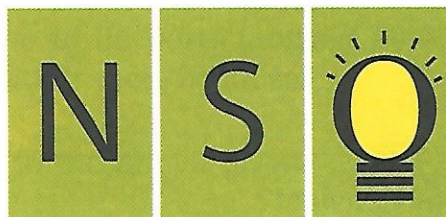
Name: ..... 2016-17

Section: ..... Roll No.: .....

Contact No. ....

Total Questions: 35

Time: 1 hr.



## 19<sup>TH</sup> SOF NATIONAL SCIENCE OLYMPIAD

### Guidelines for the Candidate

1. You will get additional ten minutes to fill up information about yourself on the OMR Sheet, before the start of the exam.
2. Write your **Name, School Code, Class, Section, Roll No.** and **% of marks/grade** in last class clearly on the **OMR Sheet** and do not forget to sign it.

3. The Question Paper comprises three sections:

**Logical Reasoning** (5 Questions), **Science** (25 Questions) and **Achievers Section** (5 Questions)

Each question in Achievers Section carries 2 marks, whereas all other questions carry one mark each.

4. All questions are compulsory. There is no negative marking. Use of calculator is not permitted.
5. There is only ONE correct answer. Choose only ONE option for an answer.
6. To mark your choice of answers by darkening the circles in the OMR Sheet, use **HB Pencil** or **Blue / Black ball point pen** only. E.g.
- Q. 16: Raj goes to school on a bicycle. Which of these safety rules he should follow?
  - A. He should give signals before taking turns.
  - B. He should keep to the right of the road.
  - C. He should cross the road by using zebra crossing.
  - D. All of these

As the correct answer is option A, you must darken the circle corresponding to option A in the OMR Sheet.

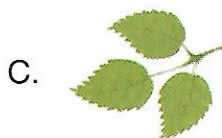
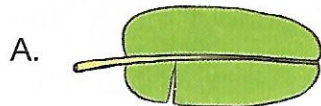
16. ● (B) (C) (D)

7. Rough work should be done in the blank space provided in the booklet.
8. Return the OMR Sheet to the invigilator at the end of the exam.
9. Please fill in your personal details in space on top of this page before attempting the paper.

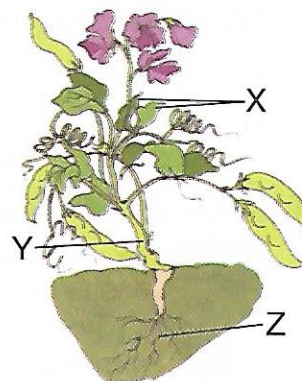




6. Which of the following leaves belongs to the plant whose flower is shown here?



7. Refer to the given picture of a plant with some of its parts labelled as X, Y and Z. In the absence of part \_\_\_\_\_, the plant cannot make its food, because it will not have \_\_\_\_\_.



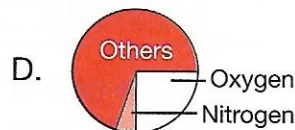
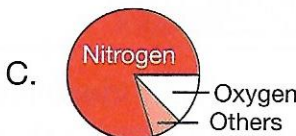
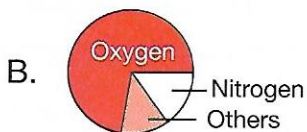
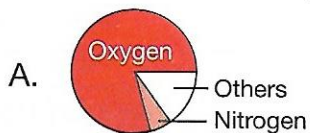
Select the option that correctly fills the blanks in the above given statement.

- A. Y, carbon dioxide
- B. Z, water
- C. X, chlorophyll
- D. Both B and C

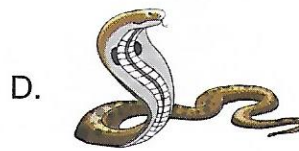
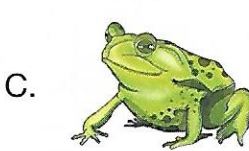
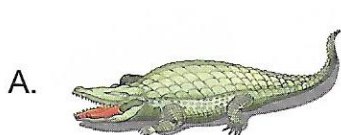
8. Mangrove plants grow in special swampy areas. In order to grow well, they have developed \_\_\_\_\_.

- A. Stems that store water
- B. Leaves that have abundance of chlorophyll
- C. Fruits that do not rot
- D. Roots that grow above the soil

9. The Earth's atmosphere is made up of various gases. Which of the following best describes this composition of gases?



10. All the animals given here have the same number of different stages in their life cycles except one. Identify this odd animal.



SPACE FOR ROUGH WORK

11. Select the unhealthy food habit from the following.

- A. We should eat our food in small bites and chew it properly.
- B. We should eat food at regular intervals.
- C. Our dinner should be the heaviest meal of the day.
- D. Our diet should include plenty of fruits and vegetables.

12. How can you preserve X (Juice) and Y (Peas) for longer period without much affecting their taste?

- | X                | Y        |
|------------------|----------|
| A. Refrigerating | Drying   |
| B. Steaming      | Boiling  |
| C. Canning       | Freezing |
| D. Jellying      | Heating  |

13. Refer to the given conversation among three friends and select the correct option.



I saw a documentary about people who move from one place to another. They live in X.



My grandfather was posted in areas with heavy rainfall for ten years. Y are very common there.

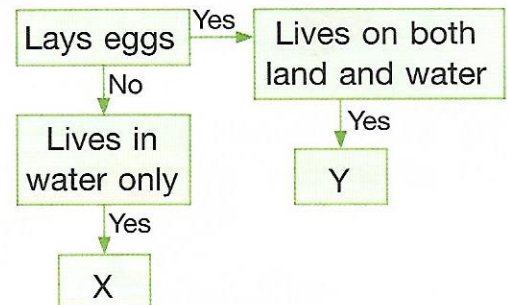


I will build a Z for me someday with a large lawn and at least ten rooms.

- A. X can be caravans or tents.
- B. Y can be stilt houses.
- C. Z can be bungalow.
- D. All of these

14. Select the option that correctly identifies the animals X and Y in the given flow chart.

- | X               | Y         |
|-----------------|-----------|
| A. Hippopotamus | Fish      |
| B. Snail        | Turtle    |
| C. Dolphin      | Frog      |
| D. Seal         | Crocodile |



SPACE FOR ROUGH WORK



15. The man in the diagram will \_\_\_\_\_.
- A. Fall because the banana peel will reduce gravity
  - B. Not fall because the banana peel will not reduce gravity
  - C. Fall because the banana peel will reduce friction between his shoe and the ground
  - D. Fall because the banana peel will increase friction between his shoe and the ground



16. Which of the following is a non-verbal means of communication?
- A. Mime
  - B. Radio
  - C. Letter
  - D. Newspaper

17. Ramesh while climbing up a hill started panting. His \_\_\_\_\_ system has to do extra efforts to help him climb.
- A. Reproductive
  - B. Respiratory
  - C. Excretory
  - D. Digestive

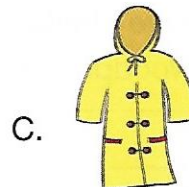
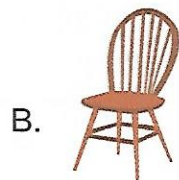
18. \_\_\_\_\_ is an activity that resembles the revolutionary movement of Earth.
- A. A spinning top
  - B. A moving merry-go-round
  - C. An ox tied to and moving around a central pole
  - D. A ball sliding on the floor

**Direction :** Refer to the given word-chop table and answer the questions 19 and 20.

19. Names of some fibres are hidden in the given word-chop table. Clothing items that can protect us from extreme \_\_\_\_\_ CANNOT be made from any of these fibres.
- A. Cold
  - B. Hot
  - C. Rain
  - D. None of these

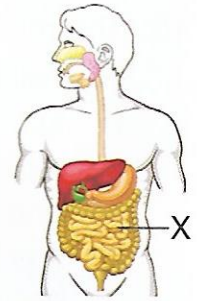
1 COT	2 SI	3 RUB	4 WO	5 NY
6 LON	7 PLAS	8 TON	9 PAP	10 ER
11 OD	12 LK	13 TIC	14 BER	

20. Names of some materials are hidden in this word-chop table. Select the item that CANNOT be made of any of these materials.



SPACE FOR ROUGH WORK

21. Refer to the given figure of human digestive system. What will be the outcome if the part labelled X is removed?

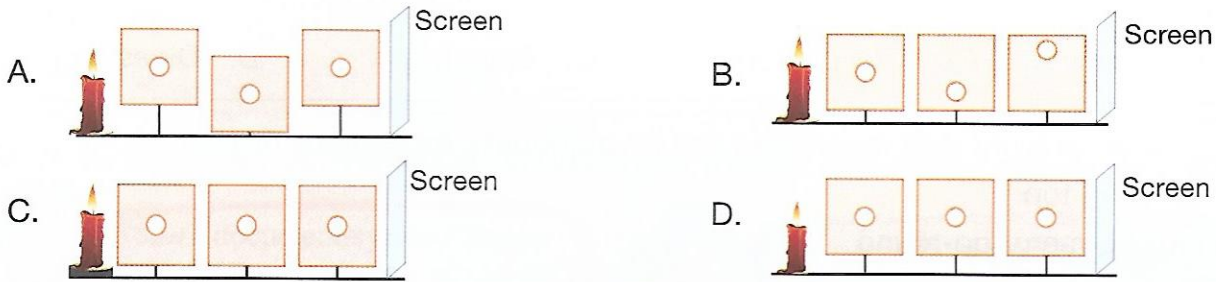


- A. Absorption of nutrients will not occur.
- B. Complete digestion of food will not occur.
- C. Removal of faeces will not occur.
- D. Both A and B

22. Unscramble the following options and select the one that gives term used for many bowl like holes found on the surface of Earth's natural satellite.

- A. EOLPS                      B. YALLVES                      C. RRATCES                      D. XIAS

23. In which of the following setups, a bright patch of light will be found on the screen?



24. Ravi grouped similar types of transport means together. In doing so, he made one incorrect group. Find out this odd group.

- A. Ferry, Boat, Ship                      B. Airplane, Helicopter, Hot air balloon
- C. Bus, Car, Auto rickshaw                      D. Hovercraft, Jet, Ship

25. Calcium, iron, potassium, iodine and common salt are examples of \_\_\_\_\_.

- A. Minerals                      B. Carbohydrates                      C. Vitamins                      D. Proteins

26. Select the item that is NOT made using the material you will get by striking out every alternate letter starting from the first one in the given box.

SMOEP TQAZL

- A. Crayons                      B. Television                      C. Pressure cooker                      D. All of these

27. Select the bird which will have similar kind of beak as that of a sparrow.

- A. Eagle                      B. Woodpecker                      C. Swallow                      D. Hummingbird

28. The herd of lions is called \_\_\_\_\_.

- A. Mane                      B. Badger                      C. Pride                      D. Mink

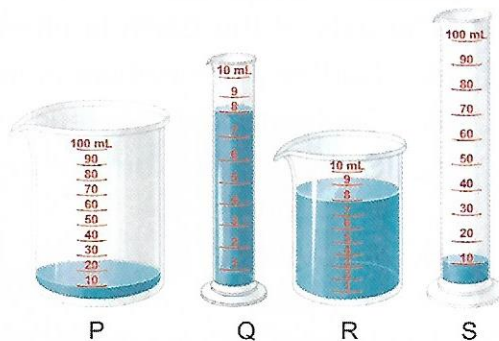
SPACE FOR ROUGH WORK



29. Activities like \_\_\_\_\_ are technically not considered as doing work in science because \_\_\_\_\_. Select the option that can correctly complete the above statement.
- Reading, no force is applied and no movement of objects occurs
  - Pushing a stationary wall, no force is applied
  - Thinking, no movement of objects occurs
  - Both A and C

30. Arrange the following containers in order of the amount of water contained in them and select the correct option.

- $R > Q > P > S$
- $R < Q < P < S$
- $R = Q > P = S$
- $R = Q < P = S$



### ACHIEVERS SECTION

31. Three dry soil samples X, Y and Z of equal weights (4 gm) were taken on a filter paper and 50 mL water was poured separately over each of them. After that, they were weighed. Their weights after wetting are tabulated here.

Which of the soil samples is most likely to be sandy soil?

- X
- Y
- Z
- Cannot be determined

Soil samples	Weight after wetting
X	13 gm
Y	20 gm
Z	8 gm

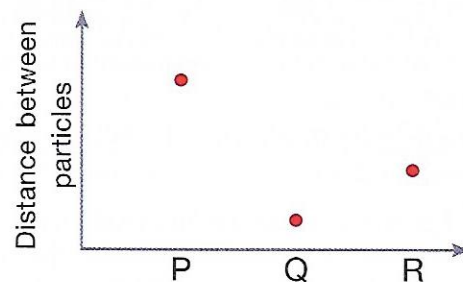
32. The given graph shows the distance between the particles in three samples (P, Q and R) having water in different states of matter.

Which of the following will NOT have

X – Fixed shape only?

Y – Fixed shape and volume?

- |          |          |          |          |
|----------|----------|----------|----------|
| <b>X</b> | <b>Y</b> | <b>X</b> | <b>Y</b> |
| A. R     | Q        | B. R     | P        |
| C. P     | Q        | D. P     | R        |



SPACE FOR ROUGH WORK

33. Select the material that can be grouped with the materials in the given table based upon a similar feature.

- A. Plastic
- B. Metal
- C. Magnet
- D. Wool

Materials
Cotton
Paper
Soil
.....

34. The axis of the Earth is tilted at an angle. This explains why the

- A. Northern hemisphere is away from the Sun and the Southern hemisphere is towards it.
- B. Southern hemisphere is away from the Sun and the Northern hemisphere is towards it.
- C. Season in the Northern hemisphere can never be the same as the season in the Southern hemisphere
- D. All of these

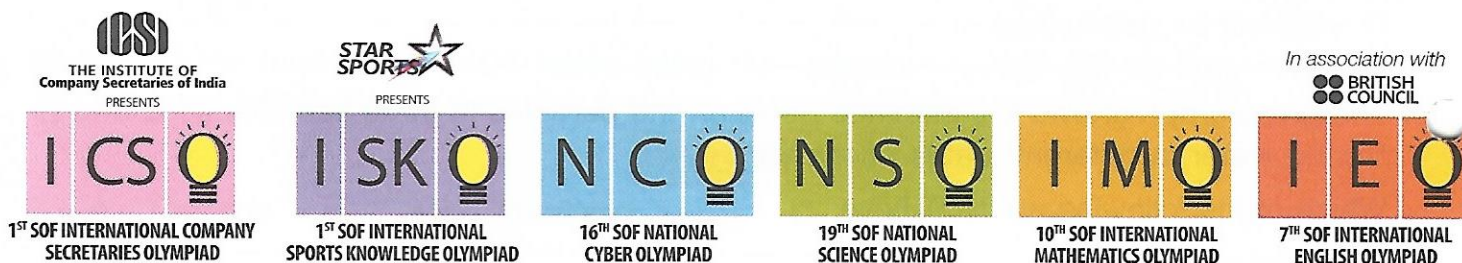
35. The force of gravity is different on different planets. The given table shows how high car Shashi jump on three different planets with same effort.

Now, select the correct option regarding it.

Planet X	Planet Y	Planet Z
0.25 m	1.5 m	0.5 m

- A. It will take more time for a ball of same mass to fall down from same height on planet X than planet Z.
- B. Planet Y has three times more gravity than planet X.
- C. Planet Z has two times more gravity than planet X.
- D. A ball of same mass will fall down later on planet Y than on planet Z when dropped from the same height.

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