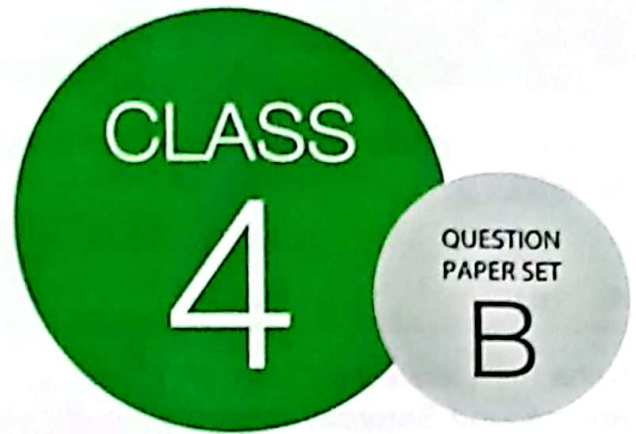


SOF NATIONAL SCIENCE
OLYMPIAD 2022-23



DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

Total Questions: 35 | Time: 1 hr.

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, Roll No.** and **Mobile Number** clearly on the **OMR Sheet** and do not forget to sign it. We will share your marks / result and other information related to SOF exams on your mobile number.
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 on 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 on the OMR Sheet.
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 the space provided on this page before attempting the paper.

16. ● (B) (C) (D)



Inspiring Young Minds Through Knowledge Olympiads



Name:.....

SOF Olympiad Roll No.:..... Contact No.:.....

LOGICAL REASONING

1. If all the symbols are removed from the given arrangement, then how many elements will be left?

S # A 1 P @ R I 4 T U \$ K O 5 © L N * H 8

- A. 16 B. 14 C. 15 D. 18

2. Neha took leave only from 5th March to 21st March 20XX from her office. If every Sunday and second Saturday is a holiday, then for how many days was she present in her office in March 20XX?

MARCH 20XX						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

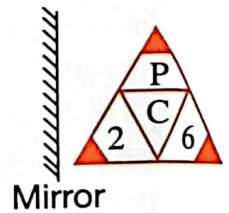
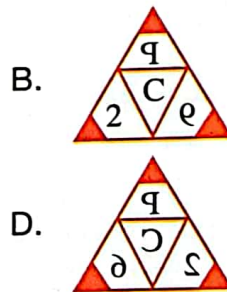
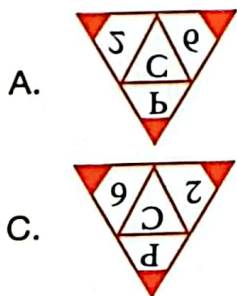
- A. 13 B. 12 C. 15 D. 14

3. Find the word that CANNOT be formed from the letters of the given word.

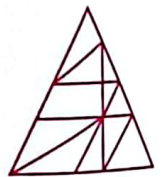
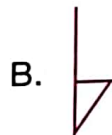
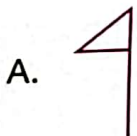
CHOCOLATE

- A. CATCH B. CLOTH C. CHEAT D. CLASH

4. Select the correct mirror image of the given figure.

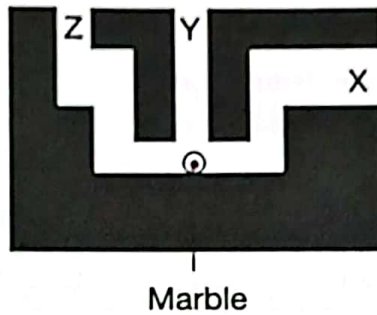


5. Which of the following figures is not exactly embedded in the given figure as one of its parts?



SPACE FOR ROUGH WORK

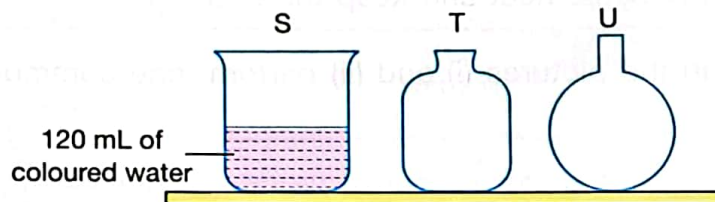
6. The given figure shows the cross-section of a box with its openings labelled as X, Y and Z. A marble is placed at the position as shown in the figure.



Marble

Through which opening, can marble be seen directly without any assistance?

- A. X B. Y C. Z D. Either X or Z
7. The coloured water from container S is emptied into container T and then from container T, it is again emptied into container U.

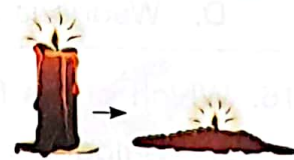


Assuming that there is no spillage, what is the aim of the experiment?

- A. To show that the mass of the coloured water changes
 B. To show that the shape of the coloured water changes
 C. To show that the volume of the coloured water changes
 D. To show that the shape and volume of the coloured water remains the same
8. Kirti has plucked off all the leaves of a plant. What will happen to the plant after a week?
- A. The plant will die.
 B. The plant will store more food.
 C. The roots will absorb more water and mineral salts.
 D. The plant will take in more amount of carbon dioxide.

9. The given picture shows the process of _____.

- A. Freezing B. Melting
 C. Evaporation D. Condensation



SPACE FOR ROUGH WORK

10. Select the option that correctly fills the given blanks.

___(i)___ is cooked by frying whereas ___(ii)___ is cooked by grilling.

- | (i) | (ii) |
|------------------|---------------------|
| A. <i>Dhokla</i> | Pizza |
| B. <i>Tikki</i> | Rice |
| C. Biscuit | Cake |
| D. <i>Samosa</i> | <i>Paneer tikka</i> |

11. Ritika wants to buy fruits for making fruit salad. She should go to a _____.

- A. Baker B. Mason C. Chemist D. Greengrocer

12. Why do we prefer to wear white or light-coloured clothes in summer?

- A. These clothes reflect the heat and keep the body cool.
B. These clothes absorb the heat and keep the body cool.
C. These clothes absorb the heat and keep the body warm.
D. These clothes reflect the heat and keep the body warm.

13. The organs shown in the pictures (i) and (ii) perform one common function. Identify the function.

- A. Respiration
B. Digestion
C. Protection
D. Excretion



(i)



(ii)

14. Who among the following was NOT a crew member of the Apollo 11 team?

- A. Neil Armstrong B. Kalpana Chawla
C. Edwin Aldrin D. Michael Collins

15. Select the INCORRECT statement.

- A. See-saw is an example of lever.
B. A screw is a simple machine that has a grooved wheel and rope running in the groove of the wheel.
C. A person standing on a road with heavy load on head is not doing any work.
D. Wedge is made up of two inclined planes.

16. Which of the following birds makes a cup-shaped nest in bushes?

- A. Bulbul B. Penguin C. Weaver bird D. Woodpecker

SPACE FOR ROUGH WORK

17. Match column I with column II and select the correct option.

- Column I**
- a. Farthest planet
 - b. Morning star
 - c. Evening star
 - d. Red planet
 - e. Largest planet

- Column II**
- 1. Saturn
 - 2. Venus
 - 3. Mars
 - 4. Neptune
 - 5. Jupiter

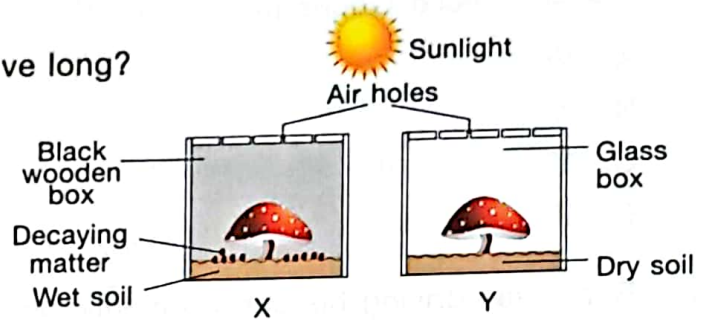
- A. a-4, b-2, c-3, d-3, e-1
- C. a-5, b-1, c-2, d-3, e-4

- B. a-4, b-2, c-2, d-3, e-5
- D. a-4, b-2, c-1, d-2, e-5

18. Two mushrooms X and Y are kept in two different types of boxes with different conditions as shown in the given pictures.

Which mushroom will NOT be able to survive long?

- A. X
- B. Y
- C. Both X and Y will survive for the same time period
- D. Cannot be predicted



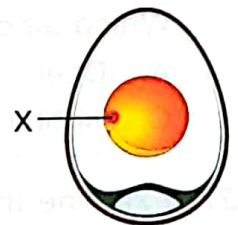
19. Which of the following statements about fish is/are correct?

- (i) They have scales to protect their body.
- (ii) They reproduce by laying many eggs at a time.
- (iii) They have gills which help them to swim faster.

- A. (i) and (ii) only
- B. (ii) and (iii) only
- C. (ii) only
- D. (iii) only

20. Refer to the given figure of hen's egg and select the correct statement regarding the labelled part X.

- A. X is a jelly-like substance that protects the growing embryo.
- B. X develops into a baby bird called chick.
- C. X is rich in water and proteins.
- D. X is the air space that grows larger as the egg ages.



21. _____ is an example of wheel and axle.



SPACE FOR ROUGH WORK

22. How are teeth helpful in the process of digestion?

- A. They produce the digestive juice called saliva.
- B. They produce acid to kill germs in food.
- C. They help to cut, chew and grind the food into smaller pieces.
- D. They help to roll the food particles into balls to ease swallowing.

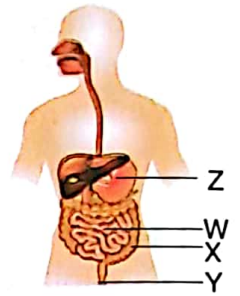
23. Which of the following diseases is caused by a protozoan?

- A. Sleeping sickness
- B. Dengue
- C. Tuberculosis
- D. Ringworm

24. Refer to the given picture.

The semi-solid faeces passes out of the body through _____.

- A. W
- B. X
- C. Y
- D. Z



25. Rohit was driving his car. Suddenly, he saw a road sign as shown in the given picture. What should he do?

- A. Speed up his car
- B. Start honking
- C. Slow down the speed of his car
- D. Take a U-turn



26. Itisha grouped four animals into two different groups S and T, based on their feeding habit as shown in the given table.

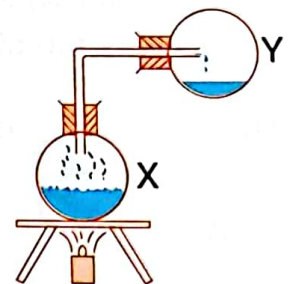
Which among the following animals can be placed in group T?

- A. Deer
- B. Horse
- C. Rabbit
- D. Leopard

S	T
Sheep	Lizard
Butterfly	Owl

27. Examine the experiment as shown in the given figure. 500 mL of water in flask X is boiled until it gets completely vapourised. The amount of water collected in flask Y will be about _____.

- A. 300 mL
- B. 550 mL
- C. 600 mL
- D. 500 mL



SPACE FOR ROUGH WORK

33. The name of which of the following CANNOT be found in the given word grid?
- The gas which is present in maximum amount in air.
 - Plants like paddy grow well in this soil.
 - World Environment Day is celebrated in this month.
 - The tiny droplets of water formed on the surface of leaves in some winter mornings.

N	I	T	R	O	G	E	N
B	L	A	L	E	P	O	U
L	M	J	S	N	O	W	N
I	C	R	S	V	Z	O	C
W	L	Z	M	A	Y	X	I
T	A	H	J	U	N	E	C
X	Y	D	B	S	T	E	D
Y	E	L	O	A	M	Y	H
N	Y	D	A	G	F	G	P

34. Which of the following statements are INCORRECT?
- Jupiter takes around 12 years to orbit around the Sun.
 - Mars has no moon.
 - Saturn has the longest revolution period in the Solar System.
 - Venus rotates from East to West.
- A. (i) and (iv) only B. (ii) and (iv) only C. (ii) and (iii) only D. (i) and (ii) only

35. Identify (i) and (ii) and select the option that correctly identifies examples of (i) and (ii).
- It is a beam or rod arranged in such a manner that it can move freely around a fixed point.
 - It is made up of two inclined planes that meet to form a sharp edge.
- | | |
|------------------|---------------|
| (i) | (ii) |
| A. Ramp | Bottle cap |
| B. Screwdriver | Claw hammer |
| C. Scissor | Fork |
| D. Bicycle pedal | Bottle opener |

SPACE FOR ROUGH WORK

"myclassroom" platform caters to foundation programs in Science and Maths for middle and senior school students and helps them to secure admission in top academic institutions including IITs, AIIMS, NITs, Government medical colleges, central universities, and top colleges across India. "myclassroom" with its presence across 15 states of India believes that every student has a different learning style and its proprietary AI / ML based adaptive learning platform can bring out the best in every student.



For latest updates & information, please like our Facebook page (www.facebook.com/sofworld) or register on <http://www.sofworld.org/subscribe-updates.html>
For Level 1 and Level 2 preparation material / free sample papers, please log on to www.mtg.in



National Office: Plot 99, First Floor, Sector 44 Institutional area, Gurugram -122 003 (HR) India
Email: info@sofworld.org | Website: www.sofworld.org
Regd. Office: 406, Taj Apt., Ring Road, New Delhi-110 029
Note: Please address all communication to the National Office only.