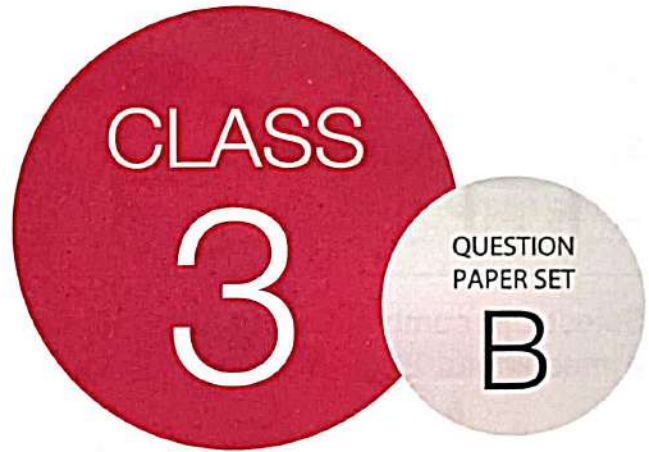




**SOF NATIONAL SCIENCE
OLYMPIAD 2022-23**



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)



Name:.....

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

LOGICAL REASONING

1. Select the odd one out.

A. $5 + 4$

B. $6 + 3$

C. $8 + 1$

D. $4 + 7$

2. Select the combination of numbers so that the letters are arranged accordingly to form a meaningful English word.

O	D	W	L	R
1	2	3	4	5

A. 1, 5, 3, 4, 2

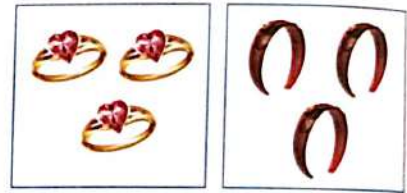
B. 3, 1, 5, 4, 2

C. 5, 1, 2, 4, 3

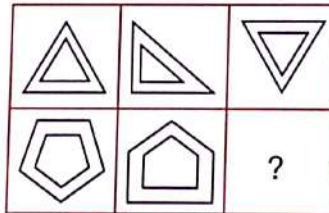
D. 3, 1, 4, 5, 2

3. How many possible combinations of 1 ring and 1 hair band each can be formed from the given rings and hair bands?

- A. 6
- B. 9
- C. 8
- D. 10

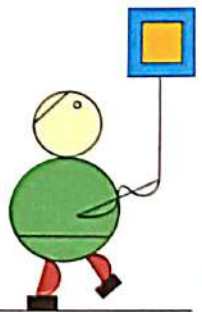


4. Which of the following figures will replace the question mark (?) in the given figure matrix?



5. Which of the following shapes is missing in the given figure?

- A. Rectangle
- B. Circle
- C. Square
- D. Triangle



SPACE FOR ROUGH WORK

SCIENCE

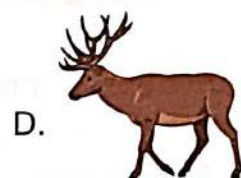
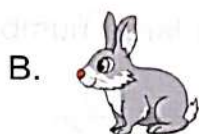
6. Select the odd one out on the basis of plant part they are obtained from.
- A. Tea B. Coffee C. Rice D. Green gram

7. How many farm animals can you find in the given box?

Giraffe, Cow, Sheep, Lion, Hen, Cat, Horse, Vulture, Duck

- A. 4 B. 5 C. 3 D. 6

8. Amyra saw X entering its burrow. Here, X can be a _____.



9. Which of the following organs is NOT protected by the rib cage?

- A. Brain B. Heart
C. Lungs D. Both B and C

10. At the top of a food pyramid for a balanced diet, you will find _____.

- A. Grains and cereals B. Meat and eggs
C. Fruits and vegetables D. Oil and salt

11. The houses with the type of roof as shown in the given picture are mostly found in areas with _____.

- A. Low rainfall
B. Heavy snowfall
C. Long summers
D. Both A and B



12. Children can show their love and respect to the elders by

- A. Wishing them good morning and good night
B. Apologising to elders if they do any mistake
C. Talking politely and respectfully to them
D. All of these.

SPACE FOR ROUGH WORK

13. Unscramble the letters given in the box to get the name of an animal. Now, select the correct option regarding this animal.

A E W R T M O R H

- A. It sucks blood. B. It carries load for us.
 C. It has a long sticky tongue. D. It swallows soil.

14. *Kettuvallams* are temporary houses that look like _____.

- A.  B.  C.  D. 

15. Information in printed form can be provided to a large number of people at the same time through _____ in many languages.

- A. Newspaper B. Radio C. Television D. All of these

16. Select the major forces that the girls X and Y in the given picture need to overcome to carry their groceries.

- | X | Y |
|-------------|----------|
| A. Gravity | Friction |
| B. Friction | Gravity |
| C. Friction | Friction |
| D. Pull | Push |



17. Select the INCORRECT match.

- A. Valley – Good for growing crops
 B. Plateau – Tableland, usually rocky
 C. Island – A piece of land surrounded by water on three sides
 D. Hill – Place with naturally raised land

18. A picture of leaf with its parts labelled as W, X, Y and Z is shown. Select the option that correctly identifies the labelled parts.

- A. W - Lamina
 B. X - Margin
 C. Y - Main vein
 D. Z - Stalk



SPACE FOR ROUGH WORK

19. Stem of which of the following plants stores food and is edible?



20. Refer to the given relationship and select the option that correctly identifies P.

Luminous : Star :: Non-luminous : P

- A. Torch B. Candle C. Sweater D. Sun

21. Select the option which on unscrambling gives the name of the rock commonly used in making statues.

- A. LHACK B. ALOC C. AMRLEB D. OIMDDAN

22. Identify the bird by looking at its beak X as shown in the given picture and select the option that shows the type of feet this bird has.



23. Select the pair which contains food items made by the same cooking method.

- A. Puris and Samosa B. Momos and Pizza
C. Dhokla and Pakoras D. Roti and Dal

24. Sumit took a container of volume 2000 cm^3 and pumped 500 cm^3 of air into it. Now, the volume of air in the container is _____.

- A. 2000 cm^3 B. 500 cm^3 C. 1500 cm^3 D. Cannot say

25. _____ sells fruits and vegetables.

- A. Plumber B. Barber
C. Greengrocer D. Mason

SPACE FOR ROUGH WORK

26. Select the odd one out on the basis of means of transport.



27. Read the given sentence and select the option that correctly fills in the blanks.

X is a means of _____ communication called _____.

A. Verbal, *Bhav*

B. Non-verbal, Braille

C. Verbal, Braille

D. Non-verbal, *Mudra*



X

28. Strike out every alternate letter, starting from the first one and select the option that gives the name of a tube that carries urine to the urinary bladder.

A. R K S I K D L N M E O Y P

B. Z U S R Q E V T U E E R G

C. O S L T M O K M S A T C U H R

D. F S G K J I H N O

29. _____ is the constellation that resembles a hunter.

A. Ursa major

B. Leo

C. Orion

D. Cassiopeia

30. Jaya filled some water in a pot and kept it over a stove to boil it, but forgot to turn off the stove. After some time, she saw that the pot was empty. This shows that water underwent the process of _____.

A. Freezing

B. Condensation

C. Evaporation

D. Sublimation

ACHIEVERS SECTION

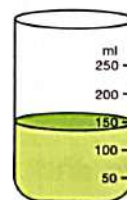
31. Select the option that correctly arranges the containers P, Q, R and S in ascending order on the basis of amount of liquid in them.

A. $Q = S < P > R$

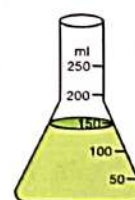
B. $R < S = Q < P$

C. $R < S < Q = P$

D. $P > Q = S > R$



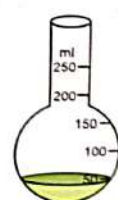
P



Q



R



S

SPACE FOR ROUGH WORK

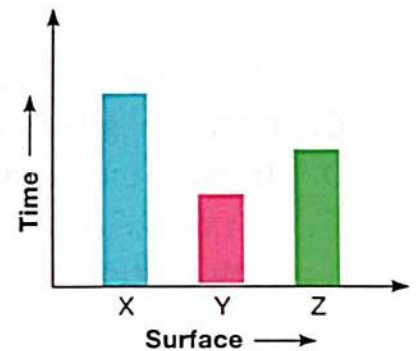
32. Refer to the given word grid and select the option that correctly answers (a) and (b).

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

- (a) Names of how many seasons are hidden in the word grid?
 (b) Names of how many hard rocks are hidden in the word grid?

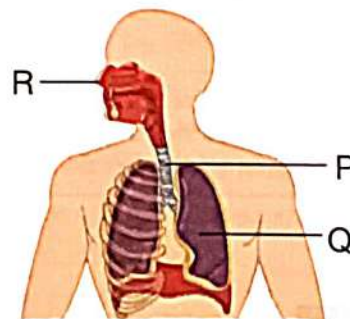
- | | (a) | (b) |
|----|-----|-----|
| A. | 4 | 2 |
| B. | 3 | 4 |
| C. | 2 | 2 |
| D. | 4 | 4 |

33. The time taken by the same ball to stop when rolled with the same force on three different surfaces X, Y and Z is plotted in the given graph. What conclusion can be drawn from it?



- A. Surface Y is smoothest.
 B. Surface Z is roughest.
 C. Surface X has lowest frictional force.
 D. Surface Z has highest frictional force.

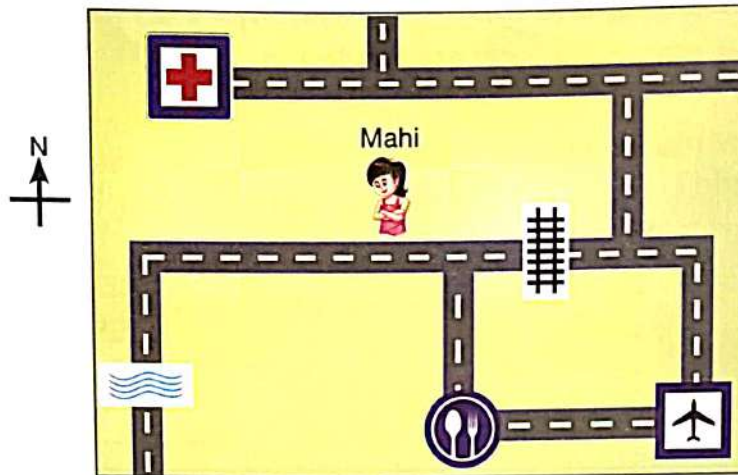
34. Refer to the given picture of human respiratory system and select the correct statement regarding labelled parts P, Q and R.



- A. R contains mucus and hair to filter out dust from the inhaled air.
 B. Blood picks up oxygen from P and supplies it to different parts of the body.
 C. Exchange of oxygen occurs in Q whereas that of carbon dioxide occurs in P.
 D. Both B and C

SPACE FOR ROUGH WORK

35. Refer to the given map of a locality and select the correct statement regarding it.



- A. Mahi will first go towards East, then North and then West to reach the hospital.
- B. There is a river to the East of airport.
- C. If Mahi needs to go to the restaurant, she will have to cross the river.
- D. There is only one route for Mahi to reach the airport.

SPACE FOR ROUGH WORK

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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
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