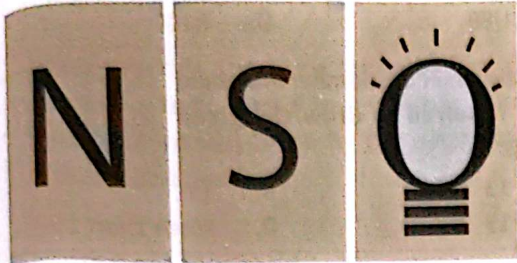
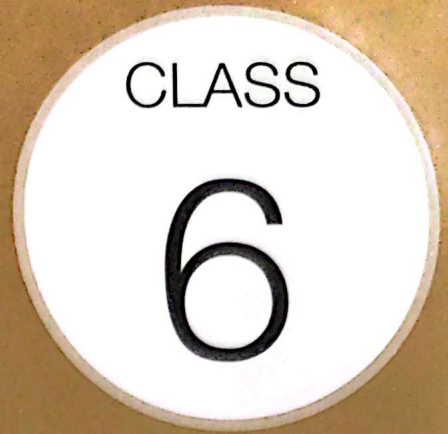
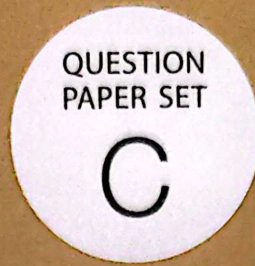




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OLYMPIAD 2025-26



Total Questions : 50

Time : 1 hr.

Guidelines for the Candidate

- You will get additional ten minutes to fill up information about yourself on the OMR Sheet, before the start of the exam.
- Write your **Name, School Code, Class, Section, 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.
- The Question Paper comprises three sections:  
**Logical Reasoning** (10 Questions), **Science** (35 Questions) and **Achievers Section** (5 Questions)  
Each question in Achievers Section carries 3 marks, whereas all other questions carry 1 mark each.
- All questions are compulsory. There is no negative marking. Use of calculator is not permitted.
- There is only ONE correct answer. Choose only ONE option for an answer.
- 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: If a mixture can be separated by magnetic separation, one of the constituents must be  
A. Ferrous      B. Non-ferrous      C. Precious      D. Non-metallic.  
As the correct answer is option A, you must darken the circle corresponding to option A on the OMR Sheet.
- Rough work should be done in the blank space provided in the booklet.
- Return the OMR Sheet to the invigilator at the end of the exam.
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- SOF-Techfest IIT Bombay Innovation Challenge - Open for class 8, 9 and 10. For more details, please visit : [www.sofworld.org](http://www.sofworld.org)**

16. ● (B) (C) (D)



Name:.....

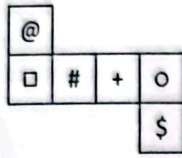
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# LOGICAL REASONING

1. The given sheet of paper is folded to form a cube. Select a box from the options that is similar to the cube formed from the sheet.

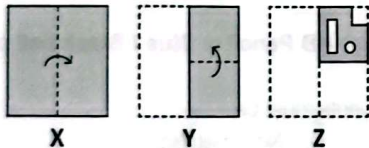


- A. B.   
 C. D.

2. Arrange the given words in a logical sequence and select the correct option.

- |              |           |
|--------------|-----------|
| 1. Education | 2. Salary |
| 3. Birth     | 4. Death  |
| 5. Job       |           |
- A. 3, 1, 2, 5, 4      B. 1, 5, 2, 3, 4  
 C. 3, 1, 5, 2, 4      D. 5, 2, 4, 1, 3

3. A set of three figures X, Y and Z showing a sequence of folding of a piece of paper is given. Fig. Z shows the manner in which the folded paper has been cut. Select a figure from the options which shows the unfolded form of Fig. Z.



- A. B.   
 C. D.

4. If in a certain code language, UNITS is written as WPJ RQ, then how will OTHER be written in the same code language?

- A. QVJGT      B. MRICP  
 C. PVJGT      D. QVICP

5. During a marathon, Aditya starts running towards West. After running 6 km, he takes a left turn and runs 11 km. He then turns left again and runs 6 km. Finally, he turns left and runs 4 km to reach the finishing point. How far is he now from the starting point?

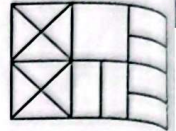
- A. 7 km      B. 6 km  
 C. 8 km      D. 5 km

6. Which of the following options will complete the given series?

H12, K23, M45, P56, R78, ?

- A. R89      B. U100  
 C. U89      D. R100

7. Find the minimum number of straight lines required to draw the given figure.

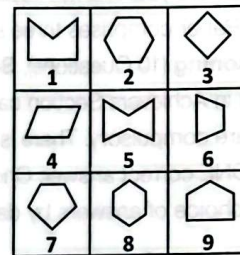


- A. 13      B. 14  
 C. 15      D. More than 15

8. Find the smallest angle formed between the hour and minute hands of a clock when the time is 10 minutes past 6.

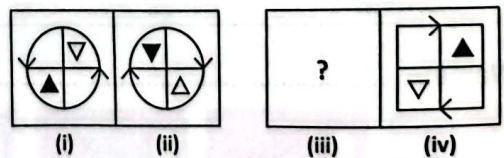
- A. 115°      B. 120°  
 C. 132°      D. 125°

9. Group the given figures into three classes on the basis of their identical properties using each figure only once.



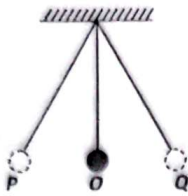
- A. 1, 7, 8; 2, 5, 9; 3, 4, 6  
 B. 1, 7, 9; 2, 5, 8; 3, 4, 6  
 C. 1, 4, 6; 2, 5, 8; 3, 7, 9  
 D. 1, 5, 7; 2, 4, 9; 3, 6, 8

10. There is a certain relationship between figures (i) and (ii). Establish the similar relationship between figures (iii) and (iv) by selecting a suitable figure from the options that will replace the (?) in figure (iii).



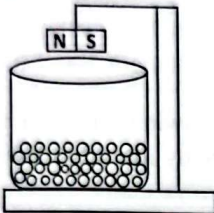
- A.
- B.
- C.
- D.

11. Consider a simple pendulum as shown in the given figure, here O is the mean position.



Nisha records the time taken by the bob of the pendulum to go from P to O which is 2 seconds. The time (in seconds) taken by the pendulum to make 10.5 oscillations is

- A. 63  
 B. 42  
 C. 84  
 D. 21
12. A bunch of marbles of different colours are kept in a beaker with a bar magnet hanging on top as shown in the given figure.



The pink marbles are made up of iron, the green marbles are made up of copper, the blue ones are made up of nickel and the yellow ones are made up of aluminium.

Which of the following marbles will stick to the bar magnet?

- A. Pink and blue only  
 B. Green and yellow only  
 C. Pink, blue and green only  
 D. Pink and yellow only
13. Read the given statements and select the correct option.
- Statement I: A man would feel iron or wooden balls equally hot at 98.4°F.
- Statement II: At 98.4°F, both iron and wood have same thermal conductivity.
- A. Both statement I and statement II are correct.  
 B. Statement I is correct but statement II is incorrect.  
 C. Both statement I and statement II are incorrect.  
 D. Statement I is incorrect but statement II is correct.

14. Match column I with column II and select the correct option from the given codes.

Column I	Column II
(P) Morning or evening star	(i) Jupiter
(Q) Ring planet	(ii) Earth
(R) Blue planet	(iii) Moon
(S) Natural satellite	(iv) Venus

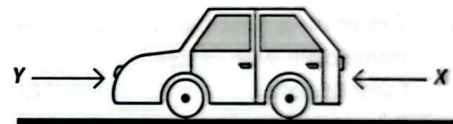
- A. (P)-(iv), (Q)-(ii), (R)-(i), (S)-(iii)  
 B. (P)-(iii), (Q)-(iv), (R)-(ii), (S)-(i)  
 C. (P)-(iv), (Q)-(i), (R)-(ii), (S)-(iii)  
 D. (P)-(ii), (Q)-(i), (R)-(iii), (S)-(iv)

15. In the following situations, the measurement tools used are given. Select the option which correctly identifies them as true (T) or false (F) ones.

- (i) Length of a bedroom can be measured using a measuring tape.  
 (ii) Thickness of a geometry box can be measured using a ruler.  
 (iii) Circumference of a vessel can be measured using a ruler and thread.  
 (iv) Length of the dining table can be measured using a measuring tape.

	(i)	(ii)	(iii)	(iv)
A.	T	T	F	F
B.	F	F	T	T
C.	T	T	T	T
D.	F	F	F	F

16. A car is parked on the road. It experiences forces X and Y on its opposite sides as shown in the given figure.



Which of the following values of X and Y will lead to the motion of the car towards the left?

	X	Y
A.	180 N	150 N
B.	150 N	250 N
C.	100 N	100 N
D.	150 N	180 N

17. On a windy day, two kids play on a see-saw while holding miniature paper windmills in their hands. What are the types of motion involved in this scenario?

- A. Rotatory and oscillatory  
 B. Periodic and linear  
 C. Rotatory and non-periodic  
 D. Rotatory only

18. Read the given statements and select the option that identifies the correct ones.
- (i) A pencil eraser uses friction to rub off errors.
  - (ii) Lubricants on car tyres increases friction.
  - (iii) Friction makes it easy to move heavy things across the floor.
  - (iv) Without friction, it would be difficult to hold anything in our hands.
- A. (i) and (ii) only      B. (ii) and (iii) only  
C. (iii) and (iv) only      D. (i) and (iv) only

19. A phase of the Moon is given here.



Which pair of diagrams shows the Moon's phase immediately before and after the given phase?

- A. Before After
- B. Before After
- C. Before After
- D. Before After

20. Which one of the given statements is incorrect?

- A. Magma is composed of iron, magnesium, aluminium and silicate compounds.
- B. Oceanic crust is very dense and is made up of basalt.
- C. The thickest layer of the Earth is crust.
- D. The inner core of the Earth is under extreme pressure inspite of high temperature.

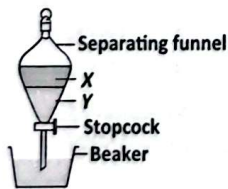
21. Which of the following statements is/are incorrect?

- I. Iron is hard as well as malleable.
  - II. Acetone is non-volatile in nature.
  - III. The SI unit of volume is litre (L).
  - IV. Glycerine is miscible with water, while petrol is immiscible with water.
- A. I and III only      B. II and IV only  
C. II only      D. II and III only

22. Observe the given figures and select the incorrect statement(s).



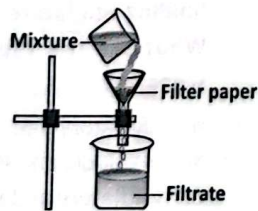
Method (i)



Method (ii)



Method (iii)



Method (iv)

- I. Method (ii) is used to separate two immiscible liquids like oil and water where X is water and Y is oil.
  - II. Method (i) is used to separate solid materials on the basis of difference in size, e.g., separation of husk from grains.
  - III. Method (iv) is used to separate soluble solid impurities from a solution.
  - IV. Method (iii) can be used to separate sand from sand and salt mixture.
- A. II only      B. I, III and IV only  
C. II and III only      D. I, II, III and IV

23. Read the given statements carefully and select the correct option.

Statement 1: Like water, wax also exhibits three states i.e., solid, liquid and gas.

Statement 2: We see dew drops on the plants in morning because water vapour present in the air comes in contact with a hot surface and condenses in water droplets.

- A. Both statement 1 and statement 2 are true.
- B. Statement 1 is false but statement 2 is true.
- C. Statement 1 is true but statement 2 is false.
- D. Both statement 1 and statement 2 are false.

24. Read the following statements and select the option which correctly identifies them as true (T) or false (F) ones.

- I. The solubility of gases in water increases with increase in temperature.
- II. Carbonated drink is an example of gas in liquid type solution.
- III. Water contracts on freezing.
- IV. Nitrogen gas cannot be compressed.

	I	II	III	IV
A.	T	F	F	T
B.	F	T	T	T
C.	T	F	T	F
D.	F	T	F	F

25. A material 'X' is a good conductor of heat. It is commonly used for making bottom of cooking utensils. It is lustrous, malleable and non-magnetic. Select the option that identifies the material 'X' on unscrambling.

- A. OINR      B. ROEPCP
- C. DUSMOI      D. ICPSLTA

26. A mixture contains iron nails, salt and sand. What is the correct order of separation techniques to separate all the components?

- A. Filtration → Magnetic separation → Evaporation
- B. Sieving → Magnetic separation → Filtration

- C. Magnetic separation → Dissolving in water → Filtration → Evaporation  
 D. Filtration → Sieving → Magnetic separation

27. Identify the incorrect match.

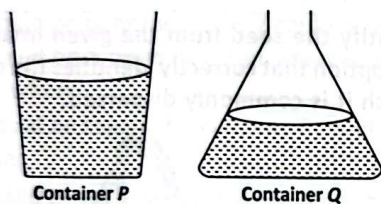
- A. Sugar solution – Solid in liquid  
 B. Hydrogen in platinum – Gas in liquid  
 C. Ethanol in water – Liquid in liquid  
 D. Air – Gas in gas

28. Which of the following statements are incorrect?

- I. Electric cables hang loosely in winter.  
 II. Germination of seed is an example of chemical reversible change.  
 III. Melting of butter is an example of physical irreversible change.  
 IV. In brass, copper is the solvent and zinc is the solute.
- A. I, III and IV only      B. II and III only  
 C. I, II and IV only      D. I, II and III only

29. There are two containers P and Q of different shapes as shown in the figures. Geeta filled container P with 100 mL of water and then poured all the water from container P into container Q.

Which of the following changes will she observe in container Q?



- I. Change in shape of water  
 II. Increase in mass of water  
 III. Change in level of water  
 IV. Increase in volume of water
- A. I only      B. IV only  
 C. II and IV only      D. I and III only

30. Mimicry is a phenomenon wherein an organism resembles another organism or some inanimate object to such an extent that they look alike. Which among the following does not show mimicry?

- A. Leaf insect      B. Monarch butterfly  
 C. Stick insect      D. None of these

31. Identify the deficiency diseases X and Y from the given symptoms and select the option that correctly identifies them.

- X – Swollen and bleeding gums, delayed wound healing, poor skin health  
 Y – Bowed legs, weak bones, delayed growth in children

	X	Y
A.	Scurvy	Rickets
B.	Anaemia	Scurvy
C.	Scurvy	Beriberi
D.	Beriberi	Scurvy

32. Identify the vitamins P–S from their given sources and select the correct statement regarding them.

P – Guava, amla, tomato

Q – Fish-liver oil, egg yolk, mushroom

R – Egg, lean meat, milk

S – Spinach, carrot, papaya

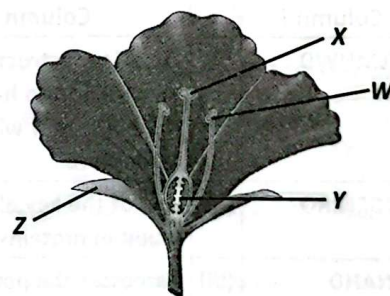
- A. P is required for the formation of haemoglobin and its deficiency causes anaemia.  
 B. Q helps in maintaining water balance of the body in humans and its deficiency causes muscle and body weakness.  
 C. S is required for proper functioning of nervous system and its deficiency causes hyponatremia.  
 D. R is required to keep skin and mouth healthy and its deficiency causes sores in mouth.

33. Refer to the adaptive features of animals given in the box and select the option that correctly identifies the features that help animals to survive in polar habitat.

- (i) Thick fur and padded feet  
 (ii) Small ears and tail  
 (iii) Long eyelashes and hair in ear  
 (iv) Fat under skin  
 (v) Hump at the back

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

34. Identify W–Z in the given figure of a flower.



Now, select the incorrect match of labelled part and its function.

- A. W – Produces pollen grains  
 B. X – Receives pollen during pollination  
 C. Y – Develops into fruit after fertilisation  
 D. Z – Protects the flower bud before it opens

35. Refer to the given table and select the correct option regarding P, Q, R and S.

Plant part	Function	Examples of plants
(i) Stem	(a) Photosynthesis	P
	(b) Supports for climbing	Q
(ii) Leaf	(a) Reduction in water loss	R
	(b) Supports for climbing	S

- A. P could be *Pinus* whereas S could be grapevine.  
 B. P and R could be found in hot desert areas such as Rajasthan.  
 C. R could be *Opuntia* whereas S could be grapevine.  
 D. Q could be maize whereas S could be banyan.

36. Read the given statements regarding a component of air.

- (i) It is present in a very small amount in the atmosphere.  
 (ii) It traps the heat radiated from the Earth and helps to keep the Earth warm.  
 (iii) Green plants use it to perform photosynthesis.

Now, select the option that correctly identifies it.

- A. Oxygen  
 B. Carbon dioxide  
 C. Nitrogen  
 D. Hydrogen

37. Identify X from the given information and select the incorrect statement regarding it.

X is a source of energy. It is liquid in nature and is used as a fuel in vehicular transports.

- A. X is a non-renewable source of energy.  
 B. X is produced by refining crude oil.  
 C. X is obtained from the preserved remains of organisms like plants, animals, etc., that lived millions of years ago.  
 D. None of these

38. Unscramble the letters given in column I to obtain meaningful terms and then match them with column II and select the correct option from the given codes.

	Column I		Column II
P.	ILILMNWD	(i)	Traditional structure constructed to harvest surface runoff water for agriculture
Q.	TNGENIRO	(ii)	One of the key elements found in proteins
R.	IKNAHD	(iii)	Harnesses the power of wind to generate electricity
S.	KOCCTHREWAE	(iv)	Used to indicate weather direction

- A. P-(iii), Q-(ii), R-(i), S-(iv)  
 B. P-(ii), Q-(i), R-(iii), S-(iv)  
 C. P-(iv), Q-(ii), R-(i), S-(iii)  
 D. P-(iii), Q-(ii), R-(iv), S-(i)

39. What is the main purpose of celebrating Van Mahotsav?

- A. To cut old trees and use that land for crop plantation  
 B. To promote tourism in forests  
 C. To encourage people to use more and more forest products  
 D. To encourage people to plant more trees and protect the environment

40. Select the incorrect match.

- A. Lavani – Maharashtra  
 B. Ghoomar – Gujarat  
 C. Bhangra – Punjab  
 D. Thang Ta – Manipur

41. Read the given statements and select the option that correctly fills any two of the given blanks.

- (i) \_\_\_\_\_ is the coloured circular part of an eye that controls the amount of light that enters the eye.  
 (ii) \_\_\_\_\_ is a layer of light sensitive receptors at the back of eye where image is formed.  
 (iii) \_\_\_\_\_ is an opening in the centre of the iris through which light enters the eye.  
 (iv) \_\_\_\_\_ is the circular, transparent front part of sclera that allows light to pass into the eye.

- A. (i)–Cornea, (ii)–Pupil  
 B. (iii)–Sclera, (iv)–Eyelid  
 C. (i)–Sclera, (iv)–Iris  
 D. (ii)–Retina, (iii)–Pupil

42. Identify the seed from the given image and select the option that correctly identifies the mode through which it is commonly dispersed.



- A. Animal  
 B. Water  
 C. Explosion  
 D. Wind

43. Select the incorrect statement.

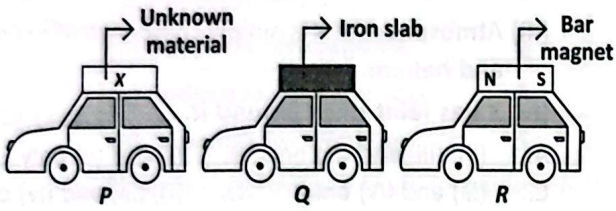
- A. Snail moves by contracting and relaxing the muscles of its body and adhering to the ground with the help of setae.  
 B. Snake's body curves into many loops, where each loop gives it a forward push by pressing against the ground. This type of movement is called slithering.  
 C. Fish swims in water with the help of its streamlined body.  
 D. Cockroach possesses jointed legs for walking and wings for flying.

44. Read the given statements and select the option that correctly fills the blanks in any two of them.

- (i) Hot molten rocks erupting from a volcano onto Earth's surface is called \_\_\_\_\_.  
 (ii) \_\_\_\_\_ along the river banks prevents soil erosion caused due to running water.



50. Consider three toy cars *P*, *Q* and *R* on a horizontal floor. A strong bar magnet, a thick slab of iron and a thick slab of an unknown material *X* are attached to the roof of the three cars as shown in the given figure.



If the distance between the cars is very small, then consider the following statements regarding the given situation.

Here we assume very small friction on the floor.

- (i) If car *P* moves away from car *Q*, then *X* is a magnetic material.
- (ii) If car *P* moves towards car *Q*, then *X* is surely a magnet.

(iii) If car *P* is stationary then *X* is an iron slab.  
Which of the given statements is/are incorrect?

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

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