

**SOF NATIONAL SCIENCE
OLYMPIAD 2023-24**

CLASS
5

QUESTION
PAPER SET

A

DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

Total Questions: 50 | 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, 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.
3. 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 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 before attempting the paper.
10. **For classes 8, 9 & 10, "Innovation Challenge" is being conducted by Techfest IIT Bombay in association with SOF. For details, please visit : www.sofworld.org/sof-techfest-iit-bombay-innovation-challenge2023**

16. ● (B) (C) (D)

Name:.....

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



INSPIRING YOUNG MINDS THROUGH KNOWLEDGE OLYMPIADS

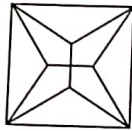


LOGICAL REASONING

1. In a certain code language, if 'PARENT' is coded as 'RCTGPNV', then how will 'MOTHER' be coded in the same code language?

- A. OMHTRE
- B. OQVJGT
- C. NPUIFS
- D. OQVTGJ

2. Select a figure from the options which is exactly embedded in the given figure as one of its parts.



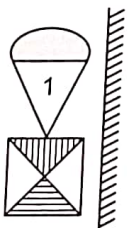
- A.
- B.
- C.
- D.

3. Which of the following options will continue the given pattern?

L3, N8, P13, R18, ?

- A. T21
- B. U23
- C. S20
- D. T23

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



Mirror

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

5. Which of the following elements is third to the left of seventh element from the right end in the given arrangement?

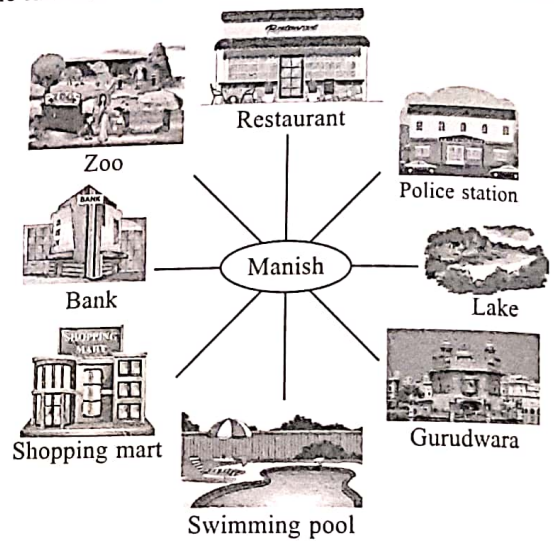
M @ J 7 3 © W 5 T U ? 1 # P Y 2 9 H D

- A. ?
- B. U
- C. W
- D. #

6. Select the odd one out.

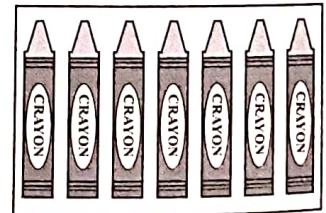
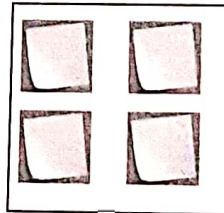
- A. M23J
- B. K27P
- C. D15H
- D. Q37T

7. Manish is facing the zoo. What will he be facing, if he turns 90° clockwise and then 135° anti-clockwise?



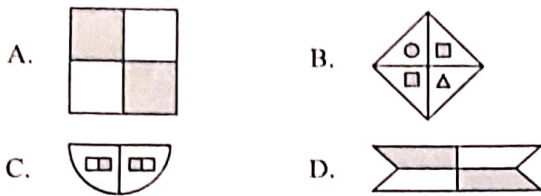
- A. Bank
- B. Shopping mart
- C. Lake
- D. Gurudwara

8. How many different possible combinations of 1 crayon and 1 sticky note each can be formed from the given crayons and sticky notes?



- A. 11
- B. 20
- C. 28
- D. 15

9. Which of the following figures has exactly two lines of symmetry?



10. Which of the following words cannot be formed from the letters of the given word?

MAGNIFICENCE

- A. ENGINE
- B. MINING
- C. MAGIC
- D. ACCENT

SCIENCE

11. Refer to the given relationship and select the option that satisfies the same relationship.

Cockroach : Spiracles

- A. Dolphin : Lungs
- B. Whale : Gills
- C. Grasshopper : Moist skin
- D. Tadpole : Body surface

12. Which among the given statements is incorrect?

- A. Scales of reptiles are derived from epidermis.
- B. Scales present over the body of fish are flexible and overlapping.
- C. Body of insects is covered with hard covering called scutes.
- D. Spines present over the body of porcupine acts as an armour to protect it from its enemies.

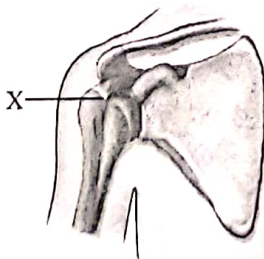
13. Unscramble the given letters to obtain the name of an adaptation mechanism.

N I R T M A O G I

Now, select the correct statement regarding it.

- A. It is a phenomenon wherein an organism resembles an object to an extent that they look alike.
- B. It is a phenomenon that helps animals to escape from unfavourable conditions.
- C. Due to this phenomenon a prey may get unnoticed from its predator.
- D. It is a phenomenon that helps an organism to blend with its surroundings.

14. Refer to the given figure and select the correct statement regarding X.



- A. Joint X works like hinges in a door.
- B. Joint X is an immovable joint and is also present between the skull bones.
- C. Joint X is also found between the first two vertebrae of the backbone.
- D. Joint X allows movement in all directions.

15. Supriya, a student of class 5 is looking very weak and pale. She also gets tired very easily. What do you think her diet is deficient in?

- A. Iodine
- B. Iron
- C. Vitamin A
- D. Vitamin C

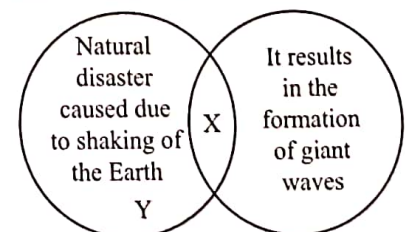
16. Select the odd one out on the basis of mode of seed dispersal.

- A. *Hiptage*
- B. Dandelion
- C. *Geranium*
- D. Madar

17. Which among the following plant pairs reproduces by roots?

- A. Onion, garlic
- B. Radish, beetroot
- C. Potato, carrot
- D. Radish, *Bougainvillea*

18. Refer to the given Venn diagram and select the option that correctly identifies X and Y.

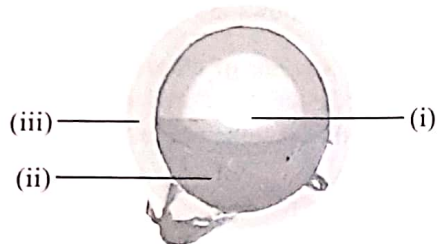


- | | |
|---------------|------------|
| X | Y |
| A. Earthquake | Typhoon |
| B. Tsunami | Earthquake |
| C. Earthquake | Hurricane |
| D. Tsunami | Cyclone |

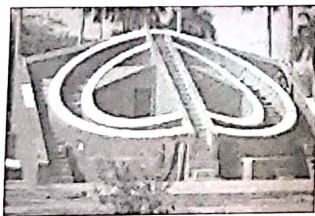
19. Which agricultural practice is being done by the people shown in the given picture?



- A. Threshing
 B. Winnowing
 C. Harvesting
 D. Ploughing
20. Refer to the given figure and select the option that correctly identifies (i), (ii) and (iii).



- | | (i) | (ii) | (iii) |
|----|--------|-------------|-------------|
| A. | Core | Corona | Photosphere |
| B. | Core | Photosphere | Corona |
| C. | Corona | Photosphere | Core |
| D. | Corona | Core | Photosphere |
21. Identify the historical monument and select the correct statement regarding it.



- A. It is situated on the banks of river Yamuna.
 B. It is used for measuring time and predicting movements of Sun, Moon and the planets.
 C. It was built by King Narasimhadeva.
 D. It was designed by the architect George Wittet.
22. Select the correct match.
- A. Chhau – Manipur
 B. Lavani – West Bengal
 C. Thang Ta – Odisha
 D. Garba – Gujarat

23. What will happen if we do not have bones in our body?
- I. Our organs will not be protected.

- II. Our body will not have shape.
 III. We will not be able to move.
 IV. We will feel nauseated.
 A. I and III only
 B. II and III only
 C. II and IV only
 D. I, II and III only

24. Select the option that shows the correct sequence of steps involved in global warming.
- I. Carbon dioxide and harmful gases are released into the atmosphere.
 II. Temperature of the Earth increases.
 III. Fossil fuels are burnt.
 IV. Greenhouse gases trap the Sun's heat and prevent it from escaping into space.
 A. III, I, IV, II
 B. I, III, II, IV
 C. IV, III, II, I
 D. III, II, I, IV

25. Which of the following phases of Moon immediately follows the New Moon phase?
- A. Waning Crescent
 B. Waxing Crescent
 C. Waning Gibbous
 D. Waxing Gibbous

26. Which of the following are the properties of graphite?

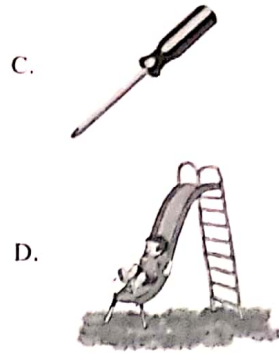
- | | |
|-------------------|---------------------------|
| (i) Slippery | (ii) Conducts electricity |
| (iii) Translucent | (iv) Non-magnetic |
| (v) Conducts heat | |

- A. (i) and (iii) only
 B. (ii), (iv) and (v) only
 C. (i) and (iv) only
 D. (i), (ii), (iv) and (v) only
27. Unscramble the given letters to get the name of a material which is non-biodegradable.

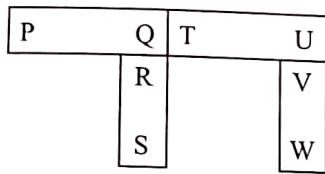
C S L P A T I

- Select the option that is a property of this type of material.
- A. Magnetic
 B. Conductor
 C. Insulator
 D. None of these

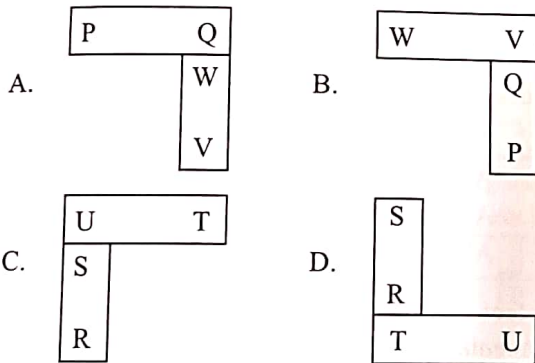
28. Which among the following belongs to the same class as a crowbar?



29. Study the given diagram that shows arrangement of four magnets.



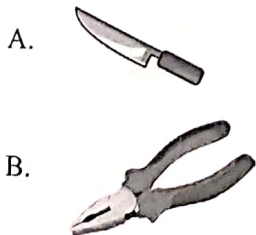
Which of the following is a possible arrangement of two of these magnets?



30. Which among the following is a type of energy possessed by a moving car?

- A. Potential energy
- B. Hydro energy
- C. Kinetic energy
- D. Geothermal energy

31. Which among the following is an example of wedge?



32. Refer to the given list of few aquatic plants.

- (i) Water lily
- (ii) Duckweed
- (iii) Hydrilla
- (iv) Lotus
- (v) Pistia
- (vi) Tape grass

How many among them are completely submerged aquatic plants?

- A. 2
- B. 3
- C. 4
- D. 5

33. Which among the given statements is true for insectivorous plants?

- A. They do not have chlorophyll, hence cannot photosynthesise.
- B. They are also called as saprophytes.
- C. They grow in soil that is deficient in nitrogen.
- D. They possess pneumatophores to breathe.

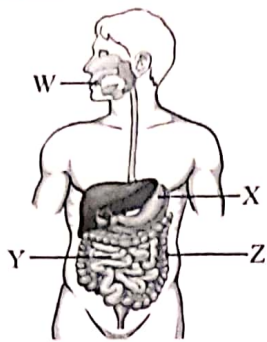
34. Unscramble the given letters to get the name of a scavenger.

- A. AAADLSRMEN
- B. PNEETALH
- C. HMLAECOEN
- D. URUVTEL

35. In what way is the life cycle of a cockroach similar to the grasshopper?

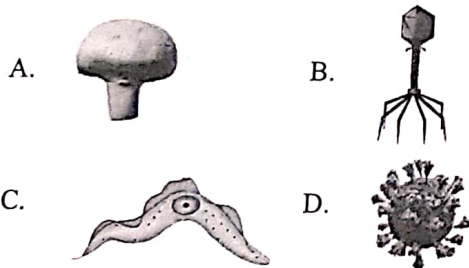
- (i) Both have three stages.
 - (ii) Their young ones look similar to adult.
 - (iii) Young ones of both of them are called nymph.
 - (iv) They moult a few times as they grow.
- A. (i), (ii) and (iii) only
 - B. (ii) and (iii) only
 - C. (ii), (iii) and (iv) only
 - D. (i), (ii), (iii) and (iv)

36. Which of the following labelled organs (W, X, Y and Z) is matched incorrectly with its function?



	Organ	Function
A.	W	- Digestion of food begins here.
B.	X	- It receives digestive juices from liver and pancreas.
C.	Y	- It allows the digested food to get absorbed through its walls, into the bloodstream.
D.	Z	- It absorbs water from the undigested food.

37. Sleeping sickness is caused by



- X is a natural fibre obtained from the stem of its plant. Identify X.

- A. Nylon
B. Cotton
C. Polyester
D. Linen

For putting out a fire caused by petrol, we should

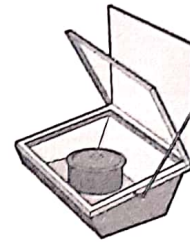
- A. Switch on the electric supply
B. Turn on the gas supply
C. Throw lots of sand on it
D. Throw water on it.

Which of the following options correctly shows the properties of a liquid? (Tick (✓) refers to 'Yes' and cross (✗) refers to 'No'.)

	Can be compressed easily	Has a definite shape	Has a definite volume
A.	✗	✗	✗
B.	✓	✗	✓
C.	✗	✓	✓
D.	✗	✗	✓

41. Which of the following options has an item that does not belong to the same state of matter as the other two?
- A. Tissue paper, pen, sponge
B. Hydrogen, nitrogen, oxygen
C. Kerosene oil, orange juice, water
D. Salt, sugar, vinegar

42. The device shown in the given figure changes




- A. Solar energy to heat energy
B. Light energy to electrical energy
C. Heat energy to light energy
D. Heat energy to mechanical energy.

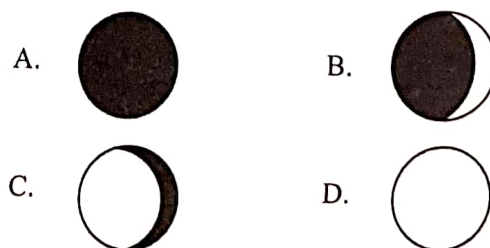
43. Work is said to be done when

- A. A boy rides a bicycle
B. A child hits a football in the playground
C. A girl is swimming in the pool
D. All of these.

44. Select the incorrect match regarding approximate percentage of different gases in the atmosphere.

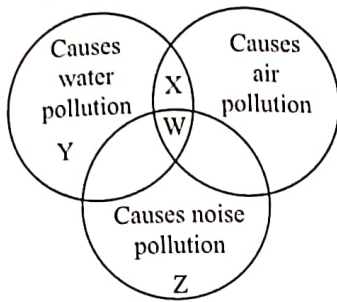
- A. Nitrogen – 78%
B. Oxygen – 51%
C. Carbon dioxide – 0.04%
D. Other gases – 0.96%

45. Kushagra saw  shape of Moon on 12th May, 20XX. What shape of Moon will he see on 22nd May, 20XX?



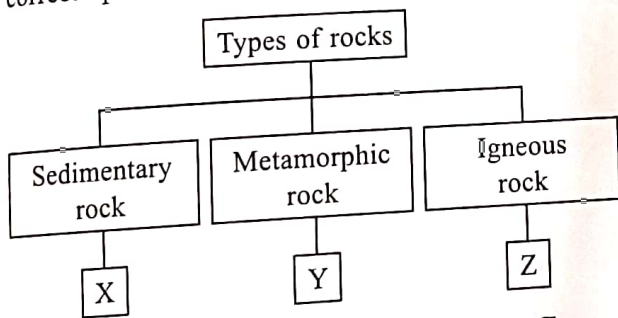
ACHIEVERS SECTION

46. Refer to the given Venn diagram and select the correct option regarding it.



- | | W | X | Y | Z |
|----|----------------------|---------------------|-----------------------|----------------------|
| A. | Vehicles | Sewage | Honking | Agricultural waste |
| B. | Industries | Spraying pesticides | Oil spill | Playing loud music |
| C. | Burning fossil fuels | Hospital wastes | Burning fire crackers | Volcanic eruption |
| D. | Acid rain | Spraying pesticides | Burning fossil fuels | Burning firecrackers |

47. Refer to the given classification chart and select the correct option regarding it.



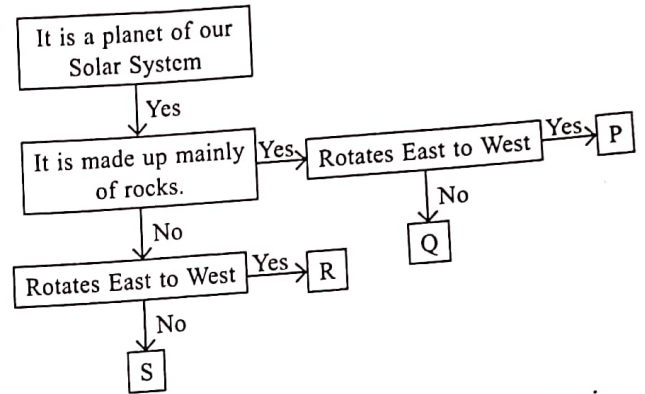
- | | X | Y | Z |
|----|--------------|-----------|----------|
| A. | Granite | Limestone | Slate |
| B. | Shale | Marble | Obsidian |
| C. | Conglomerate | Pumice | Gneiss |
| D. | Basalt | Quartzite | Shale |

48. Read the given statements regarding middle ear and identify the incorrect ones.

- I. It collects sound from the surroundings and transmits it towards the eardrum.
- II. It is the main site of hearing.
- III. Ear ossicles present in it, amplify the intensity of the sound.
- IV. Auditory nerve connects it to the brain.

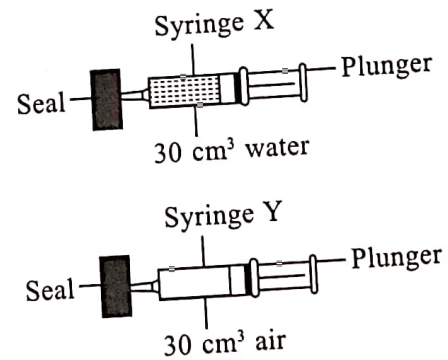
- A. I and II only
- B. III and IV only
- C. I and IV only
- D. I, II and IV only

49. Refer to the given flow chart and select the incorrect statement regarding it.



- A. P is often referred to as morning and evening star.
- B. Q could be referred to as the Red Planet.
- C. R is the farthest planet of our Solar System.
- D. S could be the largest planet of our Solar System.

50. Saanjh has two syringes whose tips are sealed. In syringe X, there is 30 cm³ of water and in syringe Y, there is 30 cm³ of air.



What will happen when both the plungers are pushed in?

- A. Plunger of syringe X will move greater distance as compared to plunger of syringe Y.
- B. Plunger of syringe Y will move greater distance as compared to plunger of syringe X.
- C. Plungers of both the syringes will move equal distance.
- D. Plunger of both the syringes will not move at all.



Techfest™
IIT Bombay
Asia's Largest Science & Technology Festival

(CSI)
THE INSTITUTE OF
Company Secretaries of India
भारतीय कम्पनी सेचिव संस्थान
THE INSTITUTE OF COMPANY SECRETARIES OF INDIA
Established under an Act of Parliament
PRESENTS



SOF INTERNATIONAL GENERAL
KNOWLEDGE OLYMPIAD



SOF INTERNATIONAL ENGLISH
OLYMPIAD



SOF NATIONAL SCIENCE
OLYMPIAD



SOF INTERNATIONAL
MATHEMATICS OLYMPIAD




SOF NATIONAL CYBER
OLYMPIAD



SOF INTERNATIONAL
SOCIAL STUDIES OLYMPIAD



SOF INTERNATIONAL
COMMERCE OLYMPIAD

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.