

CLASS
4

LEVEL
2

QUESTION PAPER SET

B

Techfest™
IIT Bombay



SOF NATIONAL SCIENCE
OLYMPIAD 2018-19

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, Section** and **Roll No.** clearly on the **OMR Sheet** and do not forget to sign it.
3. In the school code column in the OMR Sheet, please fill in code allocated to your school and not the exam center code.
4. The Question Paper comprises two sections : **Science** Section (30 Questions) and **Achievers Section** (5 Questions).
Each question in Achievers Section carries 2 marks, whereas all other questions carry one mark each.
5. All questions are compulsory. There is no negative marking. Use of calculator is not permitted.
6. There is only ONE correct answer. Choose only ONE option for an answer.
7. 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.

16. ● (B) (C) (D)

8. Rough work should be done in the blank space provided in this booklet.
9. Please fill in your personal details in the space provided on this page before attempting the paper.
10. **RETURN THE OMR SHEET AND QUESTION PAPER TO THE INVIGILATOR AT THE END OF THE EXAM.**



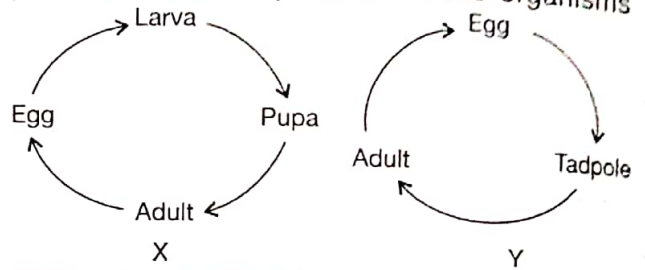
Name:.....

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

SCIENCE

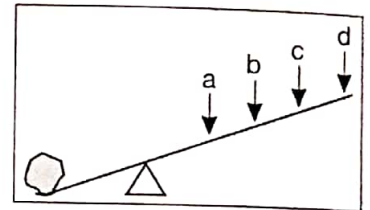
1. Study the two life cycles X and Y, and select the option that correctly identifies the organisms which show these cycles, respectively.

- | | |
|----------------|-----------|
| X | Y |
| A. Mosquito | Butterfly |
| B. Lizard | Frog |
| C. Mosquito | Frog |
| D. Grasshopper | Dragonfly |



2. Study the given figure carefully. It will be toughest to lift the rock when the force is applied at X, while it will be easiest to do the same when the force is applied at Y. Now, select the correct option regarding X and Y.

- | | | | |
|----------|----------|----------|----------|
| X | Y | X | Y |
| A. b | c | B. d | a |
| C. c | b | D. a | d |



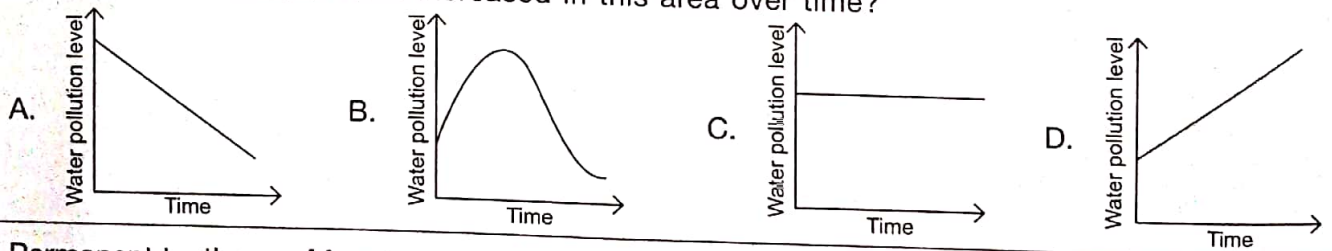
3. Rohini observed New Moon on 27th October. Which phases of Moon will she observe on 4th November and 11th November, respectively?

- | | | | |
|---------------------|----------------------|---------------------|----------------------|
| 4th November | 11th November | 4th November | 11th November |
| A. | | B. | |
| C. | | D. | |

4. Which of the following statements is INCORRECT?

- Equator is an imaginary line that runs from North pole to South pole.
- The planets revolve around the Sun in different orbits.
- The distance of the planet from the Sun determines its revolution period.
- Second planet from the Sun has the highest temperature in our solar system.

5. The following graphs show the level of water pollution in a particular area. Which graph depicts that chemical factories have increased in this area over time?



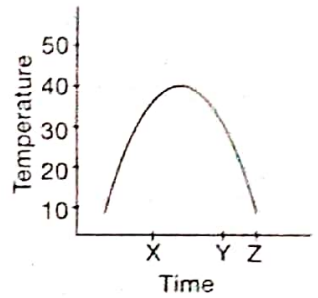
6. Permanent teeth are of four types : incisors, canines, premolars and molars. What is the total number of each of these teeth in the mouth respectively?

- | | | | |
|---------------|----------------|----------------|---------------|
| A. 4, 2, 4, 6 | B. 8, 8, 4, 12 | C. 8, 4, 8, 12 | D. 4, 1, 4, 3 |
|---------------|----------------|----------------|---------------|

SPACE FOR ROUGH WORK

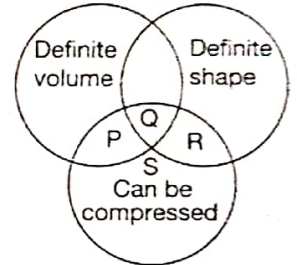
7. Refer to the given graph showing temperature changes at a place over a year. Select the INCORRECT option regarding it.

- A. At time Y, one should wear woollen sweater and gloves.
- B. At time Z, one should wear woollen coat and socks.
- C. At time X, one should wear cotton t-shirt and shorts.
- D. All of these



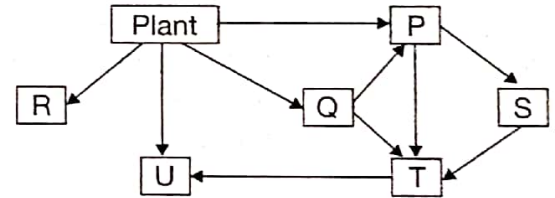
8. Refer to the given Venn diagram. Which letter in it best represents "nitrogen gas"?

- A. P
- B. Q
- C. R
- D. S



9. In the given food web P, Q, R, S, T and U are consumers. Which of these consumers are only plant-eaters?

- A. P and S
- B. Q and T
- C. R and Q
- D. U and P



10. Name of some fabrics can be obtained by using the letters given in the following box.

N I O L C T K O T N O L E

How many of these fabrics are obtained from plants?

- A. 2
- B. 3
- C. 1
- D. None of these

11. A scientist observed a sudden increase in the number of algae in a lake over a few days. The reason behind it could be that _____.

- A. Water cycle in the area got unbalanced
- B. Electronic wastes were being dumped in a nearby area
- C. A factory with heavy smoke discharge has been established nearby
- D. Heavy amount of chemical fertilisers were being used in a nearby field

12. Starting from the first letter, strike out every alternate letter to get the name of a food cooking method and select the correct option.

- A. IPSITCOKMLOISNRGM
- B. PCOARNCNEILNAGI
- C. CSETFEGAHMJIKNLGM
- D. RDCRFYHIKNLGP

SPACE FOR ROUGH WORK

13. Select the option that on unscrambling gives the name of a planet that rotates from east to west.

- A. TUIPJRE B. AURTNS C. UERYMCR D. RAUUNS

14. The dress shown in the picture is known as _____ and is traditional dress of _____.

- A. Kimono, Australia
 B. Hanbok, Japan
 C. Kalli Mundu, India
 D. None of these



15. Study the given word grid carefully. How many natural fibres are hidden in the grid?

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

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

16. Which of the following groups contains only egg laying animals?

- A. Parrot, Crow, Bear B. Crocodile, Frog, Wolf
 C. Frog, Honey bee, Platypus D. Hen, Cockroach, Seal

17. Group 'P' contains microbes that are both harmful and useful to the mankind. They are used to make cheese and curd. They also cause diseases like tuberculosis and pneumonia. Identify the microbe that belongs to group 'P'.

- A. Bacteria B. Virus C. Fungus D. Protozoa

18. Which of the following statements is/are INCORRECT?

1. *Phiran* is the traditional dress of Kashmir.
 2. Rose leaves are kept in folds of woollen clothes to protect them from damage by silver fish.
 3. Light coloured clothes absorb more heat than dark coloured clothes.
- A. 2 only B. 2 and 3 only
 C. 1 and 2 only D. 1, 2 and 3

19. The plants X and Y are similar to each other as they both _____.

- A. Grow in soil that lack both air and water
 B. Have tentacles on leaves to trap insects
 C. Cannot photosynthesise
 D. Need to overcome deficiency of nitrogen



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20. Study the given relationship and select the option which shows the similar relationship.

Coffee : Seeds

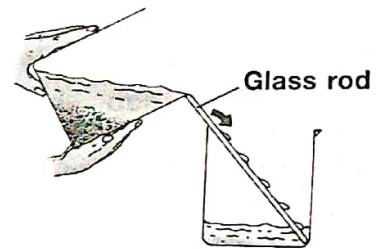
- A. Carrot : Flower
- B. Cabbage : Leaves
- C. Broccoli : Root
- D. Radish : Stem

21. Which of the following statements is correct?

- A. Energy is the capacity to do work.
- B. When force is applied, it changes the position of the object and scientifically no work is done.
- C. Energy cannot change from one form to another.
- D. None of these

22. Select the correct statement about the separation technique shown in the picture.

- A. Salt from water can be removed using this method.
- B. This method is used to separate soluble substances from a liquid.
- C. Stones from sand can be separated using this method.
- D. It first requires sedimentation.



23. Read the following statements.

- (a) ___(i)___ is an inner planet which is the brightest planet.
- (b) ___(ii)___ is an outer planet which is also the second largest planet.

Select the option which correctly fills the blanks (i) and (ii).

- | | | | |
|------------|---------|----------|---------|
| (i) | (ii) | (i) | (ii) |
| A. Mercury | Earth | B. Venus | Saturn |
| C. Jupiter | Mercury | D. Earth | Jupiter |

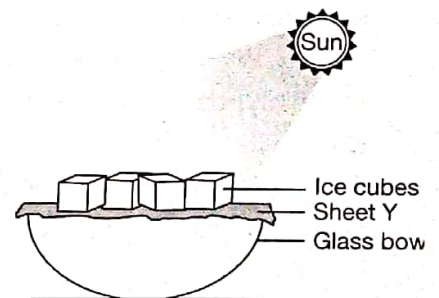
24. Select the option that correctly identifies 'I' in the given rhyme.

- A. Clove
- B. Turmeric
- C. Fennel
- D. Pepper

'I' look like cumin though green am I,
to make your stomach healthy I always try,
Eat me always after your meal, I refresh
your mouth, you surely feel.

25. Anu set-up an experiment as shown in the picture. After 15 minutes, no water can be seen in the bowl. Which of the following materials sheet Y could be made of?

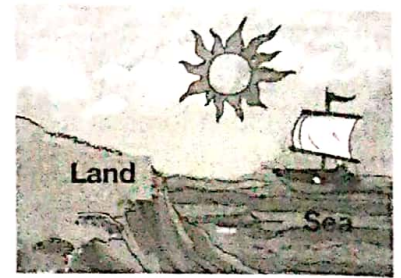
- A. Linen
- B. Plastic
- C. Aluminium
- D. Either B or C



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26. Mohit wants to separate a mixture of sugar, water and pebbles. Which of these separation methods should he use to separate all the three components?
- A. Filtration, Evaporation
 B. Decantation, Sublimation
 C. Filtration, Decantation
 D. Evaporation, Distillation

27. Refer to the given figure and select the INCORRECT option regarding it.

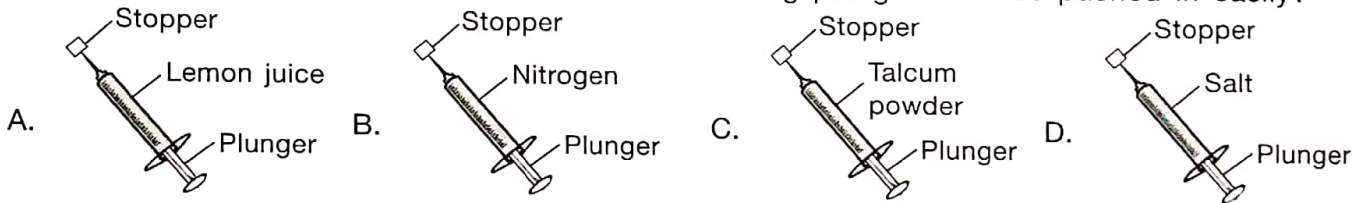


- A. Winds blow from areas of low pressure to areas of high pressure.
 B. Hot air blows from the sea to the land.
 C. Sea breeze blows from sea to the land.
 D. Both A and B

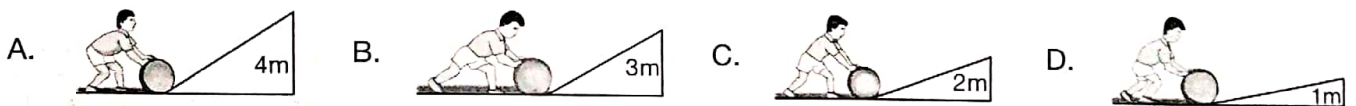
28. In which of the following options, wheel and axle is NOT used?

- A. Door knob
 B. Tweezers
 C. Skateboard
 D. Bus

29. Seema took four syringes with stoppers inserted at their nozzles. Each syringe contains a different substance. All syringes are completely filled with their contents such that their plungers are pulled out to the maximum. Which of the following plungers can be pushed in easily?



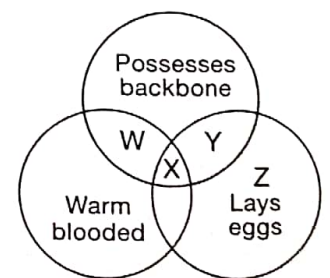
30. Four boys rolled rocks of the same weight and size up the ramps of different heights. Who amongst them required the least effort?



ACHIEVERS SECTION

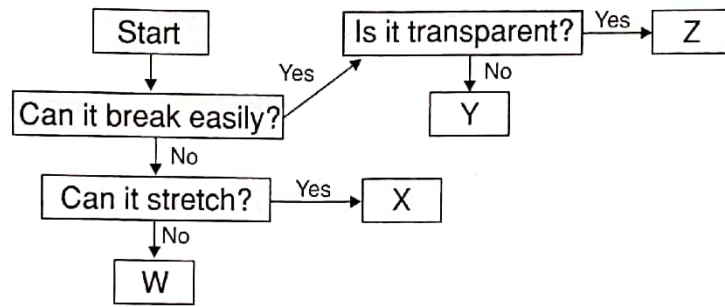
31. Refer to the given Venn diagram and select the option that correctly identifies animals W, X, Y and Z.

	W	X	Y	Z
A.	Platypus	Cobra	Alligator	Salamander
B.	Koala	Crane	Sea turtle	Mosquito
C.	Arctic tern	Chameleon	Frog	Viper
D.	Ladybird beetle	Ostrich	Parrot	Red panda



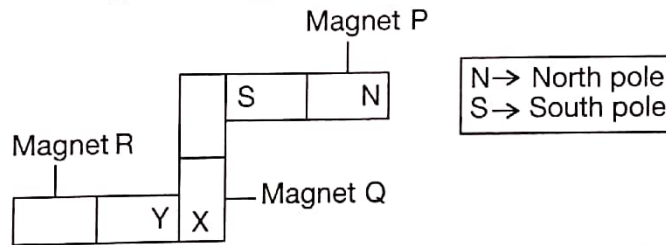
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32. Study the given flow chart and identify the objects W, X, Y and Z.



W	X	Y	Z
A. Clay tile	Steel sheet	Aluminium foil	Chalk
B. Rubber band	Glass	Iron rod	Clay tile
C. Sponge	Steel sheet	Clay tile	Glass
D. Iron rod	Rubber band	Chalk	Glass

33. The given diagram shows magnet P, magnet Q and magnet R.

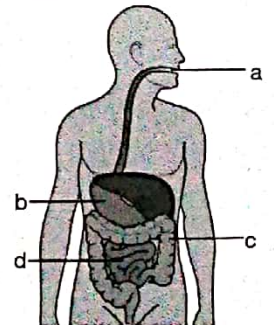


Based on the diagram, identify the poles at X and Y.

X	Y
A. North pole	North pole
B. North pole	South pole
C. South pole	North pole
D. South pole	South pole

34. Refer to the given figure showing digestive system and answer the following questions.

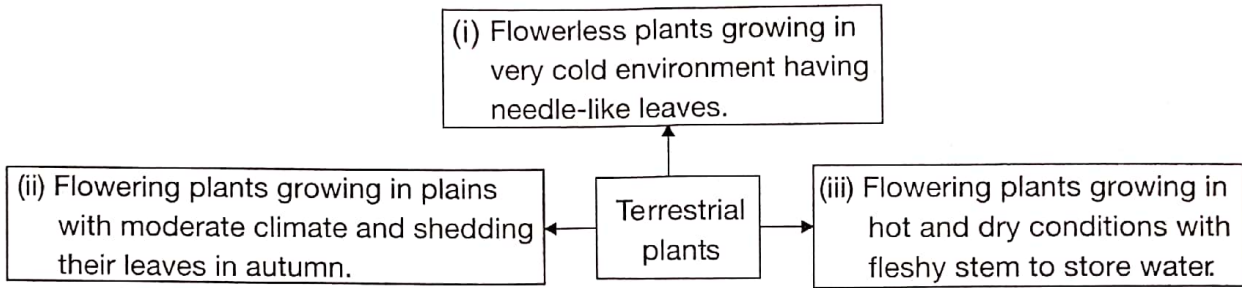
- (i) Where does the digestion of food gets completed?
 (ii) Where does the absorption of water from undigested food take place?



(i)	(ii)
A. a	b
B. b	c
C. c	d
D. d	c

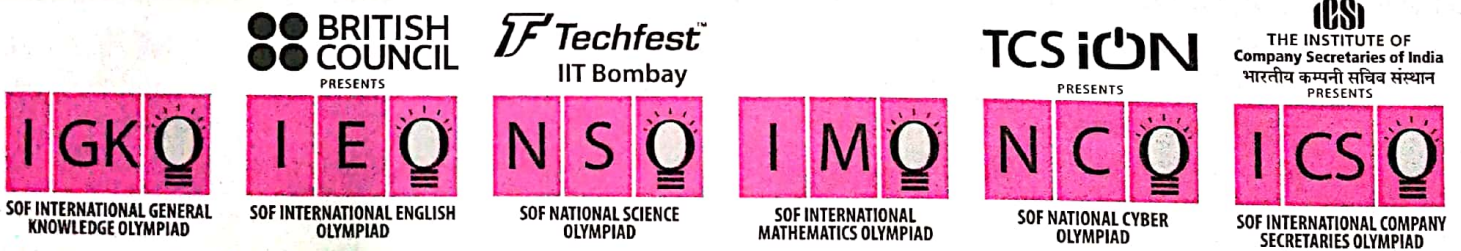
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35. Plants that grow on land are called terrestrial plants. Different regions of the Earth have different environmental conditions. Study the given classification chart and identify plants (i-iii) adapted to different conditions.



- | (i) | (ii) | (iii) |
|--------------|------------|------------------|
| A. Deodar | Peepal | <i>Opuntia</i> |
| B. Neem | Sal | <i>Aloe vera</i> |
| C. Sheesham | Palm | Cactus |
| D. Date palm | Rice plant | Pepper plant |

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