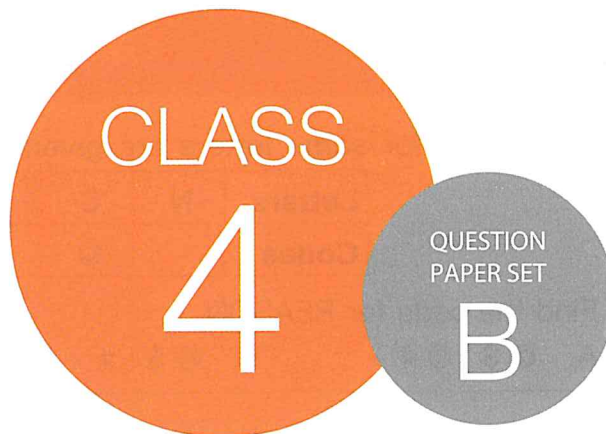




**SOF NATIONAL SCIENCE
OLYMPIAD 2019-20**



DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

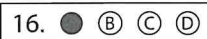
Total Questions: 35 | Time: 1 hr.

Name:.....

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

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 (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.



SCIENCE OLYMPIAD FOUNDATION
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LOGICAL REASONING

1. The codes for some letters are given below.

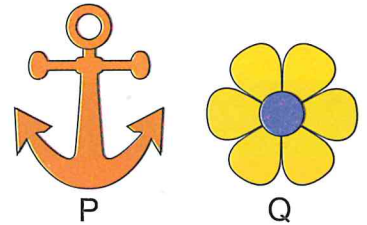
Letters	N	S	U	R	A	V	E	O
Codes	-	©	+	@	!	×	\$	#

Find the code for REASON.

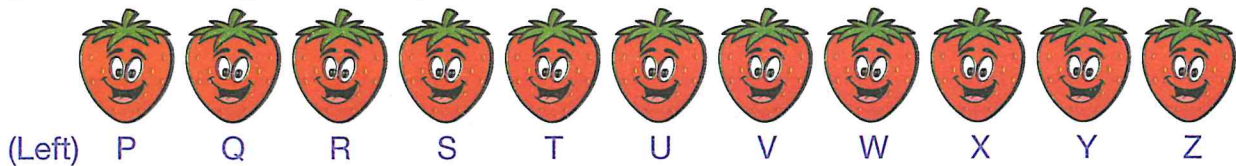
- A. @\$!©#- B. @\$!#x# C. @\$©!#- D. @\$©#x

2. Which of the given figures has a line of symmetry?

- A. Only P
B. Only Q
C. Both P and Q
D. Neither P nor Q



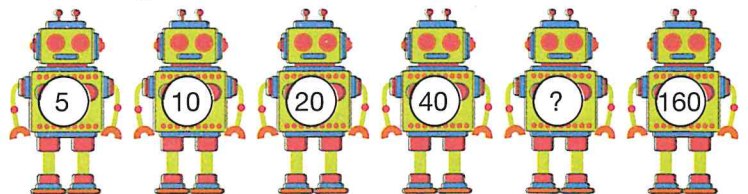
3. Which of the following strawberries is fourth to the right of ninth strawberry from the right end in the given arrangement?



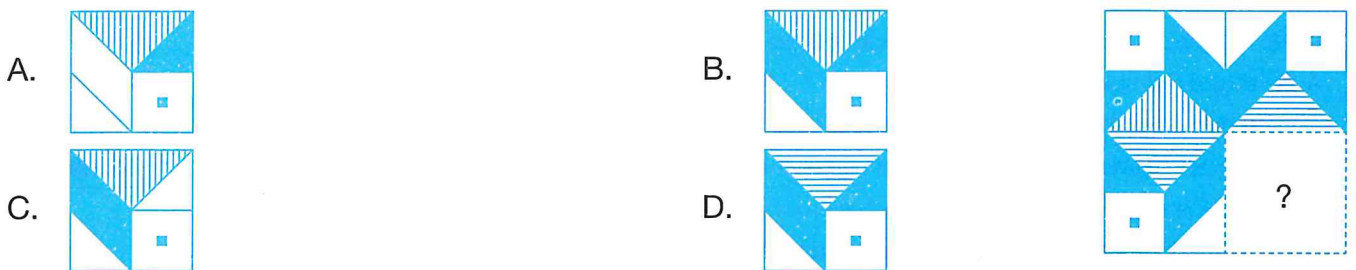
- A. U B. V C. W D. R

4. Find the missing number in the number series given below.

- A. 60
B. 120
C. 100
D. 80



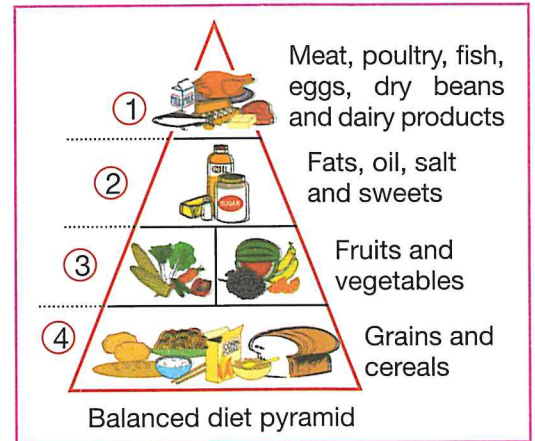
5. Select a figure from the options which will complete the given figure pattern.



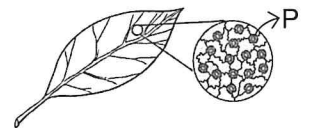
SPACE FOR ROUGH WORK

6. Which of the following statements regarding eating habits of birds is correct?
 A. Kite is an omnivore. B. Vulture is a herbivore.
 C. Crow is an omnivore. D. Eagle is an omnivore.
-
7. Unscramble the following options and select the one that gives term used for bowl like hole found on the surface of Earth's natural satellite.
 A. EOLPS B. RIOTB C. RRATCE D. XIAS
-

8. Nidhi drew a balanced diet pyramid as shown in the figure but made some mistakes. Select the correct option regarding it.
- A. Food items in block ① should be replaced by food items in block ④.
 B. Food items in block ② and ③ should be interchanged.
 C. Food items in block ① and ② should be interchanged.
 D. Food items in block ③ should be replaced with food items in block ④.



9. Refer to the given figure. Which of the following can P be?
 A. Oxygen B. Water vapour
 C. Nitrogen D. Both A and B



10. Ronita lives in Delhi, her house is in a building where many other families live on different floors. Maitri lives in a village, her house is small and is made up of bamboo, mud, etc. Select the correct option regarding this passage.
 A. Ronita lives in a bungalow. B. Maitri lives in a tent.
 C. Ronita lives in an apartment. D. Maitri lives in a caravan.
-

11. Fibre X is obtained from the fruit of a plant while fibre Y is obtained from an animal. Fibres X and Y are respectively
 A. Cotton, Wool B. Rayon, Silk C. Flax, Silk D. Coir, Linen.

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

Column I

- (a) Dirty clothes
 - (b) Tight clothes
 - (c) Warm clothes
 - (d) Cotton clothes
 - (e) Waterproof clothes
- A. (a)-1, (b)-4, (c)-3, (d)-2, (e)-5
C. (a)-2, (b)-1, (c)-4, (d)-5, (e)-3

Column II

- 1. Make you feel uncomfortable
 - 2. Can make you sick
 - 3. Protect you from rain
 - 4. Protect you from cold
 - 5. Make you feel cool
- B. (a)-5, (b)-3, (c)-2, (d)-1, (e)-4
D. (a)-3, (b)-2, (c)-4, (d)-1, (e)-5

13. Select the option which on unscrambling gives the name of a cooking method by which biscuits are made.

- A. EIGSANTM B. IIBNOGL C. ANICGNN D. KIBGAN

14. Ravi needs a material which does not melt easily to make a see through container. He should use _____.

- A. Wood B. Metal C. Plastic D. Glass

15. Refer to the given conversation among three friends.



The window of my room should have material P that allows sunlight to pass through.



I need a cap made up of Q to protect my head from rain.



I need a box made up of R to protect my glass toy kept inside it from breaking.

Now, select the correct option regarding P, Q and R.

- A. P can be wood. B. Q can be cotton.
C. R can be thermocol. D. None of these

16. Christmas is celebrated during which season in India (P) and in Australia (Q)?

- A. P-Winter, Q-Summer B. P-Winter, Q-Winter
C. P-Winter, Q-Spring D. P-Winter, Q-Autumn

17. Select the correct match

- | Adaptation | Animal | Adaptation | Animal |
|-------------------|-------------------------|-------------------|---------------|
| A. Mimicry | - Hawk moth caterpillar | B. Aestivation | - Polar bear |
| C. Blubber | - Cow | D. Blowhole | - Fish |

SPACE FOR ROUGH WORK

18. Refer to the given word grid and select the option which CANNOT be found in it.


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


- A. Fastest means of written communication
- B. Audio means of communication
- C. Vehicle used for carrying sick people to hospital
- D. Vehicle used by naval forces under the sea


19. Which of the following is a correct statement?


- A. Woodpecker makes its nest by scraping piles of mud.
- B. Weaver bird makes its nest by sewing leaves with materials like wool, thread, hair, etc.
- C. Penguin makes its nest on the ground with pebbles and stones.
- D. All of these


20. Poorvi shone a torch on two objects to cast their shadow on the screen as shown here. Which of the following correctly shows the shape of the shadow?

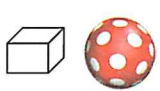
A. 


B. 

C. 

D. 

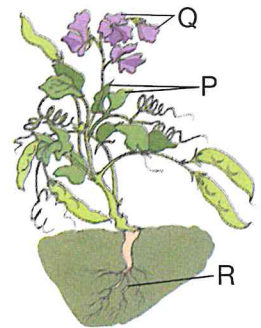

Torch




Screen

21. Refer to the given picture of a plant with some of its parts labelled as P, Q and R.

In the absence of part _____, the plant cannot reproduce whereas in absence of part _____, the plant cannot make food. Select the option that correctly fills the blanks in the above given statement.



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

22. Rajiv saw a bird swimming in water. Which kind of foot could the bird have?

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









23. People wearing this type of dress belong to which profession?

- A. Waiter
- B. Postman
- C. Lawyer
- D. Chef



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24. Zara observed the New Moon on 18th August. Select the option which correctly shows the phases of the Moon that Zara will observe on 31st August and 7th September.

	31st August	7th September		31st August	7th September
A.			B.		
C.			D.		

25. Zain observed two animals P and Q in his locality and tabulated their characteristics as shown here.

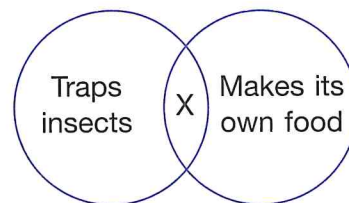
Select the option which correctly identifies these animals.

	P	Q
A.	Butterfly	Frog
B.	Sparrow	Grasshopper
C.	Koala bear	Dolphin
D.	Bat	Housefly

Characteristics	Animal P	Animal Q
Gives birth to young ones	Yes	No
Has four stages in life cycle	No	Yes
Young one resembles the adult	Yes	No
Has wings	Yes	Yes

26. Study the given Venn diagram and identify X.

- A. Fern
- B. Dodder
- C. *Hydrilla*
- D. Pitcher plant



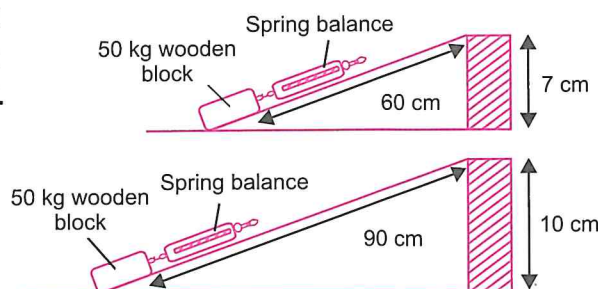
27. Study the items listed in the given table. Which of the following options correctly identifies X and Y?

	X	Y
A.	Animal excreta	Tea leaves
B.	Jute bag	Tubelight
C.	Metal can	Banana peel
D.	Polybag	Bulb

Group 1	Group 2
Plastic mug	Cotton handkerchief
Steel container	Paper envelope
X	Y
Glass jar	Wooden chair

28. Pallavi wants to find out whether the length of a ramp affects the force needed to move a wooden block up the ramp. She sets up the given experiment. What should she keep the same?

- A. The height of both the ramps
- B. The length of both the ramps
- C. The weight of spring balance
- D. Both A and B



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29. Which of the following processes do NOT consume heat?

1. Condensation 2. Evaporation 3. Freezing 4. Melting 5. Boiling
 A. 1, 2 and 5 only B. 1 and 3 only C. 2, 4 and 5 only D. 3, 4 and 5 only

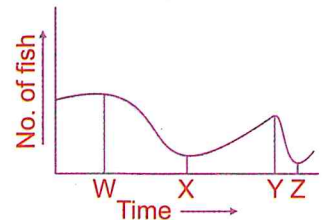
30. Select the organ that does NOT belong to that organ system to which the other three organs belong.

- A. Heart B. Brain C. Blood vessels D. Blood

ACHIEVERS SECTION

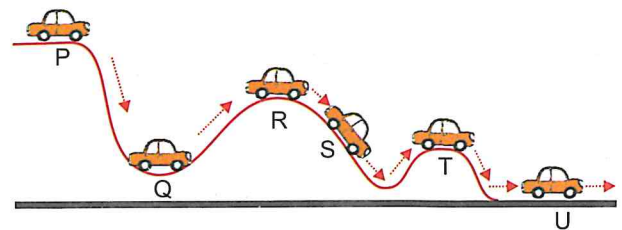
31. The given graph shows the changes in the number of fish in a water body over a year. Select the correct option regarding this.

- A. At time W, some factory was established near the water body that discharged its used water in it.
 B. At time Y, large amount of oil was accidentally spilled into the water body.
 C. At time Z, large amount of domestic sewage and garbage was thrown into the water body.
 D. Both A and B



32. Manav gently pushed down a toy car from top of a racing track as shown in the diagram. The arrows show the direction of movement of the car. Which of the following statements are INCORRECT?

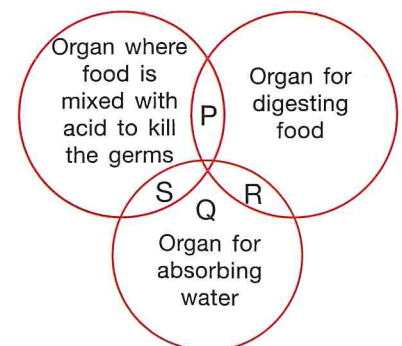
1. The car has the most gravitational potential energy at P.
 2. The car has the most kinetic energy at P.
 3. The car used up all its energy at U.
 4. The car has the least kinetic energy at R.
 5. The car has the most kinetic energy at U.



- A. 1 and 3 B. 1 and 5 C. 2, 3 and 4 D. 2, 4 and 5

33. Which of the labelled areas in the Venn diagram represent the stomach and the large intestine respectively?

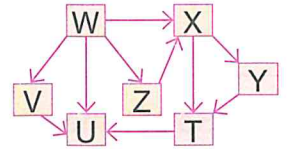
- A. P and S
 B. S and Q
 C. R and S
 D. P and Q



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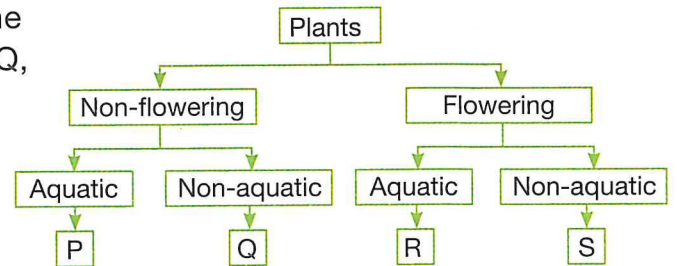
34. Refer to the given food web and select the INCORRECT option regarding it.

- A. W is the only producer while U is the only top consumer in the given food web.
- B. X is an omnivore whereas Y and T are carnivores in this food web.
- C. There are five interconnected food chains in this food web.
- D. V and Z are the only herbivores.



35. Refer to the given flow chart and select the option that correctly identifies the plants P, Q, R and S.

- A. R - *Bryophyllum*, S - Sundew
- B. S - Gulmohar, Q - Fir
- C. P - Duckweed, R - Arrowhead
- D. P - Water hyacinth, Q - Pine

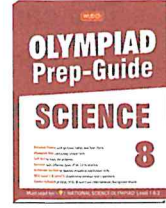
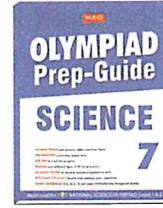
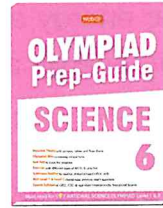
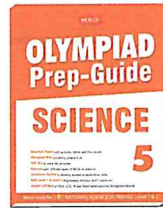
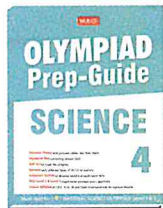
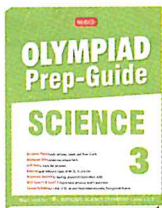


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