



# S

# I

# M

# S<sup>®</sup>

(SCHOLARS INTEGRAL MATHS & SCIENCE OLYMPIADS)



## BIGGEST NATIONAL LEVEL OLYMPIADS (STAGE - II) : 2018-19

MAX. MARKS : 100

SISO QUESTION PAPER

TIME: 60 MIN.

NAME OF THE STUDENT : .....

HALL TICKET NUMBER : .....

NAME OF THE SCHOOL : .....

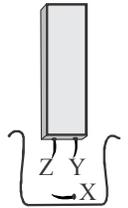
### INSTRUCTIONS TO THE STUDENTS :

- ☞ Write your Hall ticket number immediately after receiving the question paper booklet.
- ☞ Darken the answers only on the OMR Sheet.
- ☞ Read the instructions given on the OMR sheet and follow them accordingly.
- ☞ Don't write anything on the question paper booklet.
- ☞ To do rough work, use only the white paper provided in the examination hall.
- ☞ **No negative marks.**
- ☞ This question paper booklet consists of 45 questions.
- ☞ **PHYSICS (Q.No-1 to 15) :**
  - First 10 questions (1 to 10) are single correct answer type.
  - Each question carries TWO marks.
  - Next 5 questions (11 to 15) are one or more than one correct answer type.
  - Each question carries THREE marks.
- ☞ **CHEMISTRY (Q.No-16 to 30) :**
  - First 10 questions (16 to 25) are single correct answer type.
  - Each question carries TWO marks.
  - Next 5 questions (26 to 30) are one or more than one correct answer type.
  - Each question carries THREE marks.
- ☞ **BIOLOGY (Q.No-31 to 45) :**
  - All questions (31 to 45) are single correct answer type.
  - Each question carries TWO marks.
- ☞ Students are not allowed to use any Mathematical and Physical tables (OR) any other electronic devices.
- ☞ After completion of the examination hand over the OMR answer sheet to the invigilator without fail. You can retain the question paper with you.
- ☞ Students should not leave the examination hall before the last bell rings.
- ☞ To know your results log in to our website **www.simsolympiads.com**.
- ☞ Stage-I branch result copy will be sent to the school mail id. Please contact your principal to know your result.

Single Correct Answer Type :

10 × 2 = 20M

- One foot is equal to \_\_\_\_\_  
 1) 30 cm                      2) 300 mm                      3) 12 inches                      4) All of these
- Ramu brings a magnet near 3 pins made up of different materials. Pins Y and Z get attracted where as pin X remains in its places as shown below



What materials are pins X, Y and Z made up of

1) 

Pin 'X'	Pin 'Y'	Pin 'Z'
Copper	Iron	Steel

2) 

Pin 'X'	Pin 'Y'	Pin 'Z'
Steel	Nickel	Aluminium

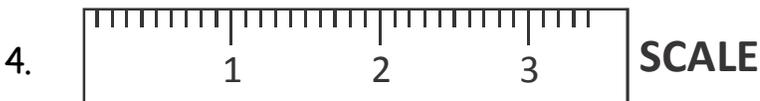
3) 

Pin 'X'	Pin 'Y'	Pin 'Z'
Copper	Brass	Cobalt

4) 

Pin 'X'	Pin 'Y'	Pin 'Z'
Iron	Copper	Brass

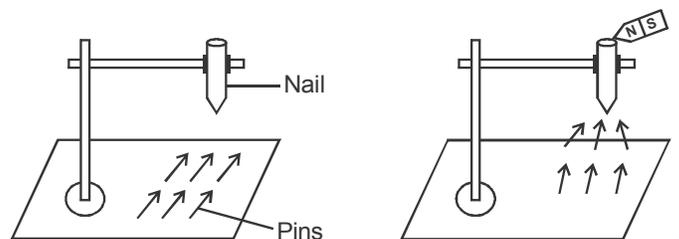
- Who invented the first electric generator ?  
 1) Thomas Alva edison                      2) James watt  
 3) Michael Faraday                      4) Oersted



In the above instrument 1, 2, 3 are measured as

- 1) Millimetre                      2) Metre                      3) Centimeter                      4) Decimeter
- When we break a magnet into pieces, each piece having  
 1) North pole only                      2) South pole only  
 3) Both North and South poles                      4) None of these
- It is defined as the mass of one cubic centimeter of water at its temperature of maximum density.  
 1) Kilogram                      2) Milligram                      3) Gram                      4) Decagram

- Study the given figure. Which phenomenon from the following is demonstrated by the experiment ?



- Pin gets magnetized indirectly from the nail
- The figures shows how pins can be demagnetized
- The nail becomes magnetized when bar magnet is touched and so attracts the pins
- The figure shows how pins can be sharpened

8. Match the following

- |                    |     |                                 |
|--------------------|-----|---------------------------------|
| a) Glowing of bulb | ( ) | p) Conductor                    |
| b) Switch          | ( ) | q) Filament                     |
| c) Safety pin      | ( ) | r) To close or open the circuit |
| d) Eraser          | ( ) | s) Insulator                    |
- 1) q, p, r, s                      2) q, r, s, p                      3) p, s, r, q                      4) q, r, p, s

9. Match the following

- |  |     |                      |
|--|-----|----------------------|
| a) The height of the person                      | ( ) | p) mm                |
| b) The distance between Hyderabad and Vijayawada | ( ) | q) cm                |
| c) The distance between the Earth and the Sun    | ( ) | r) km                |
| d) The thickness of the hair                     | ( ) | s) Astronomical unit |
- 1) a-p, b-q, c-r, d-s    2) d-p, c-q, b-r, a-s    3) c-p, a-q, d-r, b-s    4) d-p, a-q, b-r, c-s

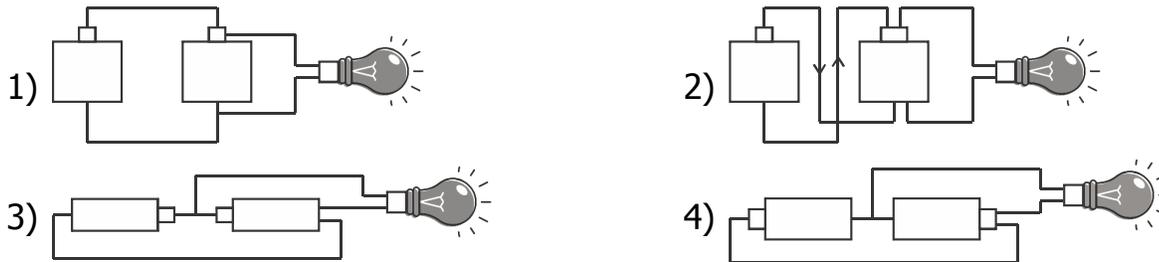
10. Volume of the liquid is measured in

- 1) Cubic centimeter    2) Cubic meter                      3) Litre                      4) All the above

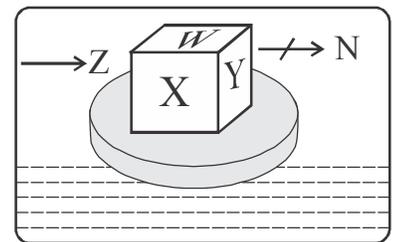
**Multi Correct Answer Type :**

**5 × 3 = 15M**

11. Which circuit is wrong one



12. A magnet in the form of a cube is placed on a piece of cork that floats on water. The cube is marked with four directions W, X, Y and Z and the compass needle which points in the direction as shown in the figure. Which of the following denotes the N - pole and S - pole of the magnet?



- 1) Z denotes North pole                      2) W denotes south pole  
3) Y denotes North pole                      4) X denotes south pole

13. Select the conductors from the options given below

- 1) Water                      2) Human being                      3) Wet cotton cloth                      4) Iron pipe

14. Match the following

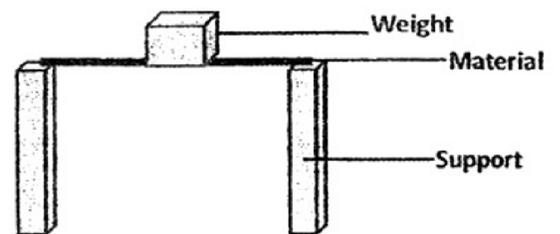
- |                       |     |   |
|-----------------------|-----|---|
| a) 1 cm <sup>2</sup>  | ( ) | p) 10 <sup>-4</sup> m <sup>2</sup>      |
| b) 100 m <sup>2</sup> | ( ) | q) 10 <sup>6</sup> cm <sup>2</sup>      |
| c) 1 mm <sup>2</sup>  | ( ) | r) 10 <sup>-2</sup> cm <sup>2</sup>     |
| d) 16 m <sup>2</sup>  | ( ) | s) 16 × 10 <sup>4</sup> cm <sup>2</sup> |
- 1) a-p, b-q, c-r, d-s    2) b-r, c-s, d-p, a-q    3) d-s, c-r, a-p b-q    4) c-p, a-r, b-q, c-s

15. Which of the following statements is true?
- 1) The north pole of a magnet will attract the north pole of another magnet.
  - 2) Artificial magnets are stronger than natural magnets
  - 3) Lode stone is an artificial magnet
  - 4) Isolated magnetic poles do not exist

**Single Correct Answer Type :****10 × 2 = 20M**

16. Two statements are given below .
- I. Dissolving sugar in water
  - II. Charcoal burning on the grill
- The true statement about the above two changes is
- 1) I and II both are physical changes
  - 2) I and II both are chemical changes
  - 3) I is a physical change and II is a chemical change
  - 4) I is a chemical change and II is a physical change

17. Raju carried out an experiment as shown in the given diagram. A piece of material was placed on top of two supports. Weights were then stacked on the material one at a time until it broke.



This was repeated using a different material placed on top of the supports each time. What was the aim of the experiment?

- 1) To find out which material is the hardest
  - 2) To find out which material is the heaviest
  - 3) To find out which material is the strongest
  - 4) To find out which material is the most flexible
18. If P represents the fibre and Q represents the fabric, find out the correct order in which Q is made from P.
- 1) P, weaving, spinning, obtained from plant, yarn, Q
  - 2) P, obtained from plant, spinning, weaving, yarn, Q
  - 3) P, obtained from plant, spinning, yarn, weaving, Q
  - 4) All of these
19. The exchange of gases in the lungs involves the exchange of \_\_\_\_\_.
- A) Oxygen from the lungs to the the blood
  - B) Oxygen from the blood to the lungs
  - C) Carbon dioxide from the lungs to the blood
  - D) Carbon dioxide from the blood to the lungs
- 1) A and C only      2) A and D only      3) B and C only      4) B and D only

20. A mixture contains three different substances X, Y and Z. X particles are very heavy, magnetic and contribute 50% of the mixture. Y particles are insoluble, and contribute 40% of the mixture. Z particles are soluble, and contribute 10% of the mixture. Which of the following methods can be used to separate X, Y and Z ?

- 1) Sieving, Magnetic separation, Filtration      2) Winnowing, Magnetic separation, Hand picking  
 3) Magnetic separation, Sublimation, Evaporation      4) Magnetic separation, Filtration, Evaporation

21. Match the process given Column - I with their type given in Column - II and choose the correct answer using the codes given below.

Column - I

- A) Heating a metal for expansion  
 B) Placing a stone in sunlight  
 C) Burning of kerosene in stove  
 D) Curdling of milk

Column - II

- 1) Physical change  
 2) Chemical change  
 3) Both physical and chemical change  
 4) Neither physical nor chemical change

**Codes**

	A	B	C	D		A	B	C	D
1)	1	4	3	2	2)	1	3	4	2
3)	1	2	4	3	4)	1	3	2	4

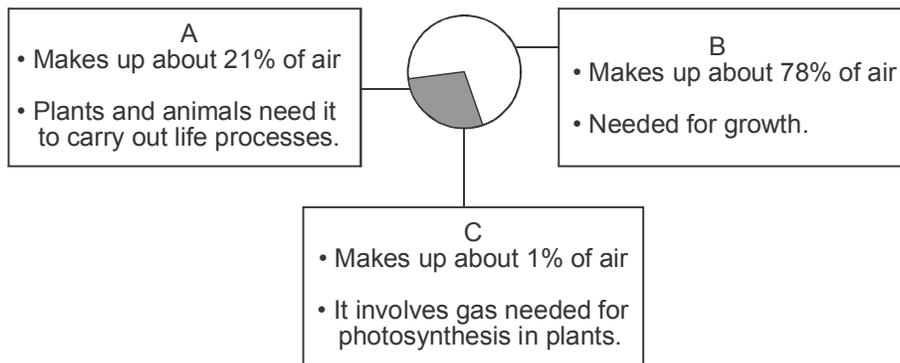
22. Which of the following are the examples of physical change?

- A. Switching on a light bulb.  
 B. Preparing Biryani at home.  
 C. The ripening of some bananas  
 D. Ironing a moist T-shirt.

**Codes**

- 1) A and D                      2) A, C and D                      3) B and C                      4) C and D

23. Air is made up of a mixture of gases which is shown in the form of a pie chart. Identify A, B and C.



**Codes**

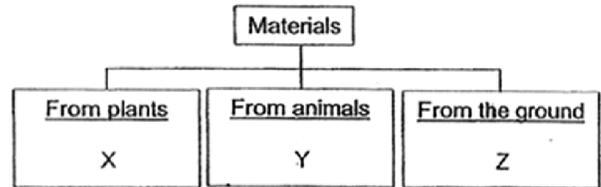
A	B	C
1) Nitrogen	Oxygen	Carbon dioxide, rare gases and water vapour
2) Oxygen	Nitrogen	Carbon dioxide, rare gases and water vapour
3) Oxygen	Carbon dioxide	Nitrogen, rare gases and water vapour
4) Nitrogen	Carbon dioxide	Carbon monoxide, rare gases and water vapour

24. Read the passage (s) given below and answer the questions that follow. Passage - 1  
Lemonade is prepared by mixing lemon juice and sugar in water. You extracted lemon juice from lemon and used some method to remove solid particles of pulp from it before mixing it with water. Now you add sugar and ice to the above solution before serving it. Which process have you used to remove pulp from lemon juice?

- 1) Decantation                      2) Sedimentation                      3) Filtration                      4) Separating funnel

25. Study the classification table below. Which of the following represents X, Y and Z?

- | X          | Y       | Z      |
|------------|---------|--------|
| 1) Rubber  | Silk    | Iron   |
| 2) Plastic | Rubber  | Silver |
| 3) Silk    | Wood    | Rubber |
| 4) Wood    | Plastic | Silk   |
- 1) 1                      2) 2                      3) 3                      4) 4



**Multi Correct Answer Type :**

**5 × 3 = 15M**

26. Adding salt to water makes it salty. Which of the following is true regarding this change?

- 1) It is a physical change because no new substance is formed  
 2) It is a chemical change because of exchange of heat  
 3) It is a physical change because there is a change in colour  
 4) It is a physical change because the original substances can be recovered

27. Choose the correct statement

- 1) Molecules attract each other with a force  
 2) The space between the molecules is called intermolecular space  
 3) The greater the intermolecular force the closer will be molecules to each other  
 4) Matter exists in nature two types only

28. Which techniques are useful for the separation of solid-liquid mixture?

- 1) Sedimentation and Decantation                      2) Winnowing  
 3) Evaporation                      4) Filtration

29. Identify that which is true related to desirable change?

- 1) Formation of curd from milk is desirable change  
 2) Formation of manure from animal dung and dead leaves is desirable change  
 3) Melting of snow on the mountains in the summer is desirable change  
 4) Change of weather from winter to summer is a desirable change

30. Which of the following methods control the water pollution?

- 1) Avoiding the use of chemical substances freely  
 2) Educating society about the water pollution  
 3) Using biological control in agricultural areas instead of using pesticides  
 4) By adding chemicals to the river water

**CLASS : VI**

**BIOLOGY**

**Single Correct Answer Type :**

**15 × 2 = 30M**

31. Which of the following bones is represented by part labelled 'X' in the given figure?

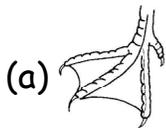


- 1) Femur
- 2) Humerus
- 3) Ulna
- 4) Tibia

32. The highest fat content is found in milk of

- 1) Camel
- 2) Cow
- 3) Buffalo
- 4) Reindeer

33. The given figures show the feet of four different birds. They are variously adapted according to their respective functions. Which of the following is correct regarding this?



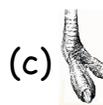
To run on flat ground

- 1) c
- 2) b
- 3) a
- 4) c



To walk on muddy ground

- a
- d
- c
- a



To grip prey

- b
- a
- d
- d

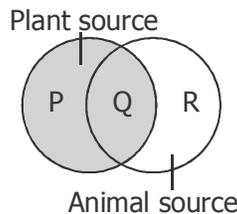


To scratch for worms

- d
- c
- b
- b

34. Identify Q in the given figure.

- 1) Honey
- 2) Rice
- 3) Meat
- 4) Pulses



35. Match the following vitamins and minerals with their sources.

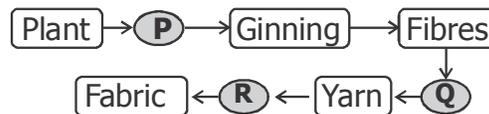
- 1) (i) - d, (ii) - C, (iii) - b, (iv) - a
- 2) (i) - C, (ii) - d, (iii) - a, (iv) - b
- 3) (i) - a, (ii) - b, (iii) - c, (iv) - d
- 4) (i) - d, (ii) - a, (iii) - c, (iv) - b

	Column-I		Column-II
(i)	Amla	(a)	Calcium
(ii)	Carrot	(b)	Iodine
(iii)	Milk	(c)	Vitamin C
(iv)	Salt	(d)	Vitamin A

36. The flow chart given below shows the production of cotton fabric.

What could P, Q and R be?

- 1) P - Buds, Q - Spinning, R - Weaving
- 2) P - Bolls, Q - Spinning, R - Weaving
- 3) P - Bolls, Q - Weaving, R - Spinning
- 4) P - Bolls, Q - Ginning, R - Carding



37. Which of the following is classified correctly?

Storage root      Root not used for storage

- 1) Carrot      Grass
- 2) Lotus      Tapioca
- 3) Potato      Turnip
- 4) Maize      Sweet potato

38. Which of the following joints work as in the figure given below?



- 1) Ankle and knee joints
- 2) Hip and shoulder joints
- 3) Neck and wrist joints
- 4) Shoulder and knee joints

39. The symbols given below are used by Tanya to group plants.

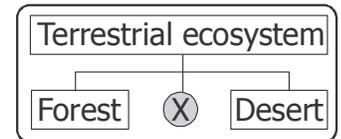
△ – One year      □ – Two year      ○ – Many year

□ Symbol is used to group

- 1) Guava
- 2) Beans
- 3) Pumpkin
- 4) Carrot

40. Which of the following is represented by 'X' in the figure given below?

- 1) Ocean
- 2) Island
- 3) Grassland
- 4) Snow land

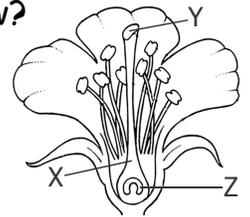


41. Find the odd set out

- 1) Stolons, rhizomes, corms
- 2) Thorns, bracts, stipules
- 3) Contractile roots, pneumatophores, haustoria
- 4) Staminal corona, tapetum, microspore

42. Which of the following represents X, Y and Z in the figure given below?

- 1) X - Anther, Y - Filament, Z-Ovule
- 2) X - Style, Y - Stigma, Z-Ovary
- 3) X - Style, Y - Anther, Z- Ovary
- 4) X - Filament, Y - Style, Z-Ovary

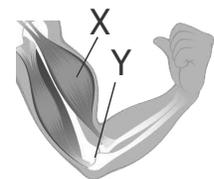


43. Which of these help polar bears adapt to live in extreme cold climate?

- 1) White fur, fat below skin, keen sense of smell.
- 2) Long tail, blunt claws, thin skin, paws.
- 3) White body, paws for swimming, gills for respiration
- 4) Thin skin, large eyes, white fur.

44. Which of the following represents X and Y in the figure given below?

- 1) X - organ, Y - muscle
- 2) X - muscle, Y - joint
- 3) X - joint, Y - bone
- 4) X - bone, y - organ



45. Identify the plants that shows the given characteristics.

- 1) Maize and balsam
- 2) Balsam and hibiscus
- 3) Paddy and maize
- 4) Sugarcane and hibiscus

- Have fibrous roots
- Have petals in multiples of three
- Bears leaves with parallel veins