

Please check the examination details below before entering your candidate information

Candidate Name

Class

Section

# BLOOM Science Olympiad (BSO) Question Paper 2023-24

Class  
**5**

Total Questions: **50+5** (Tie-Breaking Section)


**Total Time Allotted : 60 minutes**

**Total Marks : 60**

## Instructions

1. There are **50 Multiple Choice Questions** in this booklet having 4 options out of which **ONLY ONE** is correct.
2. There are two sections in the Question Paper; Section 1 having 40 Questions carrying 1 Mark each & Section 2 having 10 Higher Difficulty Order Questions carrying 2 Marks each.
3. All questions are compulsory. There is **NO negative** marking for incorrect answers.
4. Total time allotted to complete the paper is 60 minutes.
5. Please fill in your details in the space provided on this page before attempting the paper.

## OMR Sheet Instructions

1. Before starting the paper, fill in all the details in the OMR Sheet.
2. Additional 10 minutes will be provided to fill up the OMR sheet, before the start of the exam.
3. Use HB Pencil to darken the circle of the correct Option in OMR sheet. The correct way to darken the circle in OMR sheet is shown below.  

4. Use black or blue ball point pen/HB pencil to fill the information in the OMR sheet. Partially filled OMR sheet will not be checked.
5. Return the OMR sheet to the invigilator after the exam.

CODE #1

**SC5**



**BLOOM CAP**  
Founded by |  **arihant**

# Bloom Science Olympiad Class 5

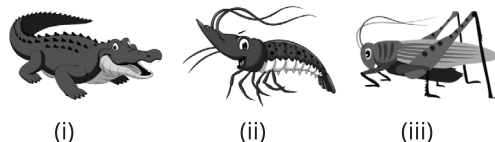
## Section 1 (1 Mark)

- Among the food items mentioned below, which one will yield the highest amount of energy after the food is digested?  
 (a) Rice (b) Fresh fruits  
 (c) Butter (d) Eggs
- In which of the following plants dispersal of seeds takes place with the help of water?  
 (a) Rose plant (b) Money plant  
 (c) Lily (d) Poppy plant
- Which of the following is a characteristic of simple machine?  
 (a) They are not very large  
 (b) They have few or no moving parts  
 (c) They take a long time to perform the task  
 (d) They run on electricity
- In which deficiency disease a person suffers from bleeding gums and swelling of joints?  
 (a) Typhoid (b) Scurvy  
 (c) Malaria (d) Goitre
- Identify the incorrect statement.  
 (a) Solubility of water increases with temperature.  
 (b) Rain is the purest form of natural water.  
 (c) Groundwater is susceptible to contamination by human and animal wastes.  
 (d) Filtration can remove very fine impurities from water.
- Which process is involved in the drying of wet clothes?  
 (a) Sublimation (b) Expansion  
 (c) Evaporation (d) Condensation
- Read the given statements carefully and choose the correct option.  
**Statement I** Some plants have fruits that produces one or many seeds.  
**Statement II** Some plants reproduce by vegetative propagation.  
 (a) Only I (b) Only II  
 (c) Both I and II (d) None of these
- Backbone of humans is not a single bone. It is made up of number of bones. The smaller unit of backbone is called vertebrae. How many vertebrae are there in a backbone?  
 (a) 33 (b) 32  
 (c) 35 (d) 36
- Which of the following animal breathes through its body surface?  
 (a) Cockroach (b) Cow  
 (c) Fish (d) Frog
- Which of the following plant has similar properties that of a pitcher plant?  
 (a) Cotton plant (b) Bamboo plant  
 (c) Venus flytrap (d) Lotus plant
- Which of the following movement does not involve the use of joints?  
 (a) The nodding of head  
 (b) The blinking of eyes  
 (c) The bending of fingers  
 (d) Kneeling down
- Deficiency of vitamin-C causes ..... disease.  
 (a) typhoid (b) diarrhoea  
 (c) scurvy (d) jaundice
- Write [T] for correct and [F] for incorrect statements using the codes given below.  
 I. Life is possible on Earth even without water.  
 II. Evaporation takes place in groundwater also.  
 III. Water changes into ice when heated at sufficient temperature.  
 IV. Decantation is process of water purification.  
**Codes**  

	I	II	III	IV
(a)	F	F	T	T
(b)	T	T	F	F
(c)	F	T	F	T
(d)	F	T	T	F
- Which of the following factor does not affect the rate of evaporation?  
 (a) Surface area (b) Temperature  
 (c) Wind (d) Mass
- Scarcity arises when the need for water is ..... the availability of it.  
 (a) equal to (b) less than  
 (c) more than (d) very less than
- If there would be no ozone layer, then which of the following harmful product would not be screened by the atmosphere?  
 (a) Infrared rays (b) Ultraviolet rays  
 (c) Smoke (d) X-rays

17. The wings of the birds are their  
 (a) separate structure (b) hindlimbs  
 (c) forelimbs (d) None of these
18. Which of the following plant does not need nitrogenous fertilisers?  
 (a) Barley (b) Rice  
 (c) Wheat (d) Pulses
19. One day Radhika gets amazed by her knee movement. Which type of joint is present in her knees?  
 (a) Hinge joint  
 (b) Pivot joint  
 (c) Ball and socket joint  
 (d) Gliding joint
20. Find the odd one out.  
 (a) Ozone layer depletion  
 (b) Typhoid  
 (c) Acid rain  
 (d) Global warming
21. How onion and ginger are related to each other?  
 (a) Leaves of both can grow into new plants.  
 (b) They are underground stems from which new plants grow.  
 (c) Roots of both can grow into new plants.  
 (d) Both are dispersed by explosive mechanism.
22. Water vapour is which form of ice and during which process, water vapour convert into liquid state?  
 (a) Gaseous, sublimation  
 (b) Liquid, melting  
 (c) Solid, evaporation  
 (d) Gaseous, condensation
23. .... is made up of 33 ring-shaped small bones called ..... It is a hollow tube through which spinal cord runs. Choose the option which correctly fills the blank space.  
 (a) Backbone, heart  
 (b) Limb, vertebrae  
 (c) Ribcage, backbone  
 (d) Backbone, vertebrae
24. All animals need to breathe for their ..... When animal breathes in ..... and breathes out ....., an exchange of gases takes place.  
 Complete the above paragraph using the words given in options below.  
 (a) survival, oxygen, carbon dioxide  
 (b) water, carbon dioxide, nitrogen  
 (c) hids, water, air  
 (d) survival, nitrogen, oxygen

25. Complete the following paragraph using the words given in options below.  
 If there is no intake of ....., then a person suffers from ..... Most of the weight of a person is due to ..... content in the body.  
 (a) food, malnutrition, water  
 (b) water, food, protein  
 (c) food, water, fat  
 (d) air, water, food
26. Which part of the rose plant can grow into new plants?  
 (a) Roots (b) Flowers  
 (c) Stems (d) Seeds
27. Which of the following animal breathe through gills?



- (a) Only (i) (b) Only (ii)  
 (c) (i) and (ii) (d) (ii) and (iii)
28. Mukesh has sixty classmates. Out of them, 3 fell ill. Which one of them can make Mahesh fall ill?  
 (a) Rahul, who has cold  
 (b) Prabha, who has anaemia  
 (c) Divya, who has scurvy  
 (d) Shikha, who has typhoid
29. Rainwater harvesting is  
 (a) stopping the water flow to save crops  
 (b) providing passage of rainwater to water bodies  
 (c) storing underground water  
 (d) collecting rainwater and storing it for long term use
30. Study the following statements and choose the correct option, where [F] represents incorrect and [T] represents correct statements.  
 I. Plants do not play any role in decreasing soil erosion.  
 II. All the seeds do not grow into a new plant.  
 III. Air is not essential for seeds to grow.  
 IV. Plants are the only producer of food on Earth.
- Codes**
- |     | I | II | III | IV |
|-----|---|----|-----|----|
| (a) | F | T  | F   | T  |
| (b) | T | T  | F   | F  |
| (c) | F | F  | T   | T  |
| (d) | T | F  | T   | F  |
31. What is the force that stops us from slipping when we walk?  
 (a) Gravity (b) Friction  
 (c) Air resistance (d) Upthrust

32. Match the Column I with Column II.

Column I	Column II
A. The process by which plants make food	1. Pollination
B. The process of transfer of pollen grain from anther to stigma	2. Seed dispersal
C. Scattering of seed	3. Germination
D. The process of growth plant from a seed	4. Photosynthesis

**Codes**

A	B	C	D	A	B	C	D
(a) 3	4	1	2	(b) 4	1	2	3
(c) 4	1	3	2	(d) 3	4	2	1

33. Which among the following is not a feature of desert plants?

- (a) Small leaves (b) Spine  
(c) Sloping branches (d) Thick stems

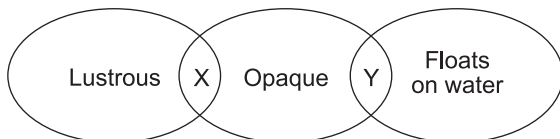
34. Identify the name of an insectivorous plant.

- (a) Cactus (b) Lotus  
(c) Money plant (d) Pitcher plant

35. Which of the following animal uses its tongue to smell things?

- (a) Cow (b) Humans (c) Snakes (d) Dogs

36. Identify X and Y in the given Venn diagram.



- (a) X could be copper vessel  
(b) Y could be iron nails  
(c) X could be glass  
(d) Y could be soil

37. Study the following statements and choose the correct option, where [F] represents incorrect and [T] represents correct statements.

- I. Sand and iron filling is separated by magnets.  
II. Water and salt is separated by evaporation.  
III. Sand and water is separated by evaporation.

**Codes**

I	II	III	I	II	III
(a) T	T	F	(b) F	T	T
(c) T	F	T	(d) F	T	F

38. A substance 'X' has definite volume and take the shape of the container in which it is put in the substance 'X' is likely to be

- (a) solid (b) liquid  
(c) gas (d) Both (b) and (c)

39. While carrying an electric iron, Selvi accidentally drops it on the floor because of which a small crack was formed on the floor. Which force was acting on the iron during this incident?

- (a) Muscular force (b) Electric force  
(c) Reaction force (d) Friction force

40. Everything surrounding us and affecting us is called environment. Choose the biotic components of the environment from the given options.

- (a) Animals and soil (b) Air and water  
(c) Animals and plants (d) Water and sunlight

## Section 2 (2 Marks)

41. To hide from predators some animals protect themselves by blending its colour similar to its surroundings.

This phenomenon is shown by *Chameleon*.

Among the colours mentioned below, a *Chameleon* while walking on grass will use which one, in case a predators are coming near?

- (a) Brown (b) Green  
(c) Yellow (d) Red

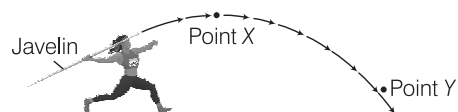
42. Study the following statements and choose the correct option, where [F] represents incorrect and [T] represents correct statements.

- I. Wedge and lever are a simple machine.  
II. Inclined plane is a screw.  
III. Working of pulley and lever is the same.

**Codes**

I	II	III
(a) F	F	T
(b) T	T	F
(c) F	T	T
(d) T	F	F

43. An athlete throws a javelin which is shown in the figure given below. The javelin stays in the mid-air at point X before landing to the ground.



Which of the following statement is correct regarding the motion of javelin?

- (a) No force is acting on the javelin when it is at point X.  
(b) The javelin travels at the same speed from point X to point Y.  
(c) Gravitational force only acts on the javelin when it is at point X.  
(d) Gravitational force is acting on the javelin from point X to point Y.

44. Match the Column I with Column II and choose the correct code.

Column I (Diseases)	Column II (Vitamins/Minerals)
A. Night blindness	1. Vitamin-B <sub>1</sub>
B. Beri-beri	2. Vitamin-D
C. Anaemia	3. Vitamin-A
D. Rickets	4. Vitamin-C
	5. Iron

**Codes**

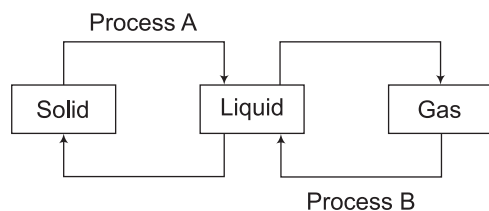
	A	B	C	D
(a)	4	5	1	2
(b)	3	5	4	2
(c)	3	1	5	2
(d)	4	2	5	1

45. What enables us to swing our arms as shown in the picture?



- (a) Ball and socket joint (b) Pivot joint  
(c) Hinge joint (d) Sliding joint

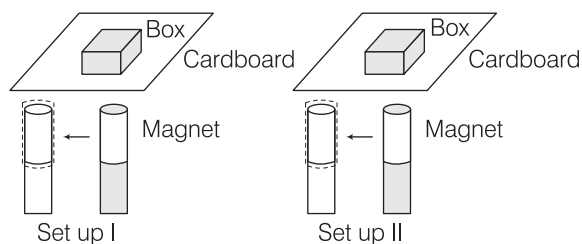
46. The flow chart given below represents the change of state of water.



Which of the following represents process A and process B?

Process A	Process B
(a) Freezing	Evaporation
(b) Melting	Condensation
(c) Freezing	Condensation
(d) Melting	Evaporation

47. Shyam made two setups in order to observe the magnetic force on a cardboard box which is shown below.



When he moves the magnets in both the setups, in which case the box will move?

- (a) Set up I (b) Set up II  
(c) Both (a) and (b) (d) Neither (a) nor (b)

48. Select the incorrect statement.

- Use of plastic bags should be reduced.
- Garbage should be thrown at proper dumping places.
- Wastes are to be dumped directly into water bodies.
- Tall chimneys are used with filters to let out smoke and gases.

**Codes**

- (a) Only I (b) Only II  
(c) Only III (d) Only IV

49. Match the Column I with Column II and choose the correct code.

Column I (Animals)	Column II (Breathing organs)
A. Mammals	1. Spiracles or air holes
B. Earthworm	2. Gills
C. Cockroach	3. Lungs
D. Fish, prawns	4. Moist skin

**Codes**

	A	B	C	D
(a)	3	2	1	4
(b)	4	3	1	2
(c)	3	4	1	2
(d)	4	1	2	3

50. **Statement I** All plants have fruits that produce a large number of seeds.

**Statement II** The seeds which are light and have feathers on them are easily carried by wind.

Choose the incorrect statement.

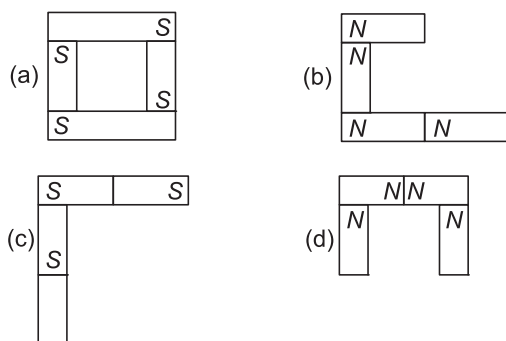
- (a) Both I and II (b) Only I  
(c) Only II (d) None of these

## Tie-Breaking Section

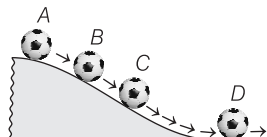
### Instructions

1. This section consists of 5 questions.
2. The score achieved in this section will not be included in the total marks.
3. If overall marks of two or more students are same, winner will be decided based on the score in this section.
4. Participation in this section is optional, and students may choose to attempt it or not.

1. Study the arrangement of 4 bar magnets. Which of the following arrangement is possible?



2. The diagram given below shows a ball sliding down a slope.



At which position, the ball will possess maximum potential energy and kinetic energy, respectively?

- (a) A and B                      (b) C and B  
(c) D and A                      (d) A and D

3. Match the following columns.

Column I (Types of joints)	Column II (Position)
A. Hinge joint	1. Neck
B. Ball and socket joint	2. Wrist
C. Gliding joint	3. Shoulder
D. Pivot joint	4. Elbow

### Codes

	A	B	C	D
(a)	4	2	1	3
(b)	1	3	2	4
(c)	4	3	2	1
(d)	3	4	1	2

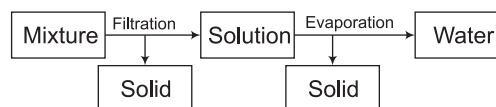
4. Match the columns and choose the correct option.

Column I	Column II
A. Skull	1. It protects the spinal cord.
B. Ribcage	2. Femur is the longest bone.
C. Backbone	3. It protects heart.
D. Limbs	4. It protects brain.

### Codes

	A	B	C	D
(a)	4	3	1	2
(b)	1	2	3	4
(c)	3	4	2	1
(d)	4	1	3	2

5. Observe the flow chart shown below carefully.



Which of the following options depicts the mixture correctly ?

- (a) Sand + Oil + Water  
(b) Carbon dioxide + Salt + Water  
(c) Stones + Rice + Water  
(d) Sand + Salt + Water



