

Bloom School Olympiads

Bloom Science Olympiad (BSO)

Class 8th

Question Paper 2022

Student Name _____

Mobile No. _____

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Total Questions : 50

Time : 60 min.

Instructions

1. Additional 10 min. will be given to students to fill up the student's information before the start of the exam.
2. There are two sections, Section A & Section B. **Section A** has 40 questions of 1 mark each and **Section B** has 10 questions of 2 mark each.
3. All questions are compulsory. Use of calculator is not allowed.
4. Write and circle your Roll Number and Subject clearly on the Answer sheet and do not forget to sign.
5. There is only one correct answer hence mark one choice only.
6. Darken your choice with HB Pencil or Blue/Black Ball Point Pen only.

For example

Indira Gandhi International Airport, is situated in which city?

- (a) New Delhi (b) Mumbai
(c) Chennai (d) Hyderabad

20: ● (b) (c) (d)

As the correct answer is (a), the student should darken the circle corresponding to option (a)

7. Rough work should be done in the blank space provided in the booklet
8. Return the answer sheet to the exam in-charge teacher at the end of the exam.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO

Bloom Science Olympiad Class 8

Section A (1 Mark)

1. Given below is a list of microorganisms. Based on their characteristic features pick the odd one out.

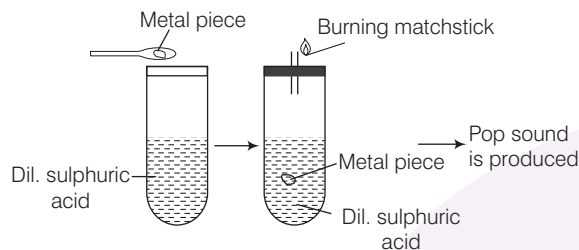
(a) *Amoeba*

(b) *Paramecium*

(c) *Rhizobium*

(d) *Plasmodium*

2. Meeta performed the following experiment by using dilute sulphuric acid, a metal piece and a matchstick.



The reason because of which she heard pop sound is

(a) evolution of oxygen.

(b) evolution of hydrogen.

(c) evolution of sulphur dioxide.

(d) evolution of carbon dioxide.

3. In an experiment, 4.5 kg of a fuel was completely burnt. During this process, the heat produced was 180000 kJ.

The calorific value of the fuel (in kJ/kg) is

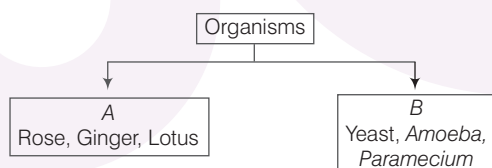
(a) 10000

(b) 20000

(c) 40000

(d) 80000

4. Study the given below structure and mark which of the following descriptions is best suited.



A

(a) Live in gardens

(b) Living things

(c) Have many cells

(d) Can respond to changes

B

Live in forests

Non-living things

Have one cell

Cannot respond to changes

5. Which of the following objects do not have forces acting on them?

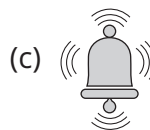
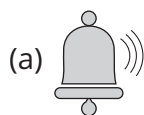
(a) An apple hangs from a tree

(b) The Moon orbits around the Earth

(c) A book that is placed on the floor

(d) An aeroplane flies in the sky

6. Which of the following options shows the correct way of propagation of sound vibrations?



7. Names of some of the fibres are written below:

I. Nylon

II. Silk

III. Lycra

IV. Polyester

The odd one among these is

(a) I

(b) II

(c) III

(d) IV

8. The various fractions obtained by the fractional distillation of petroleum are as follow:

I. Diesel oil

II. Fuel oil

III. Gasoline

IV. Paraffin oil

The correct order of their volatility is

(a) I > III > IV > II

(b) III > I > II > IV

(c) III > IV > I > II

(d) II < III < IV < I

9. The given below organism was found on earth thousands of years ago. You must have seen this organism many times in your books and movies. But have you ever seen this organism on the earth in any zoo or somewhere else, of course not. What do you think would be these organisms and in which era these organisms were found?



Animal

(a) Extinct

(b) Endangered

(c) Endemic

(d) Threatened

Era

Mesozoic

Palaeozoic

Cenozoic

Precambrian

10. Given below are few terms related to reproduction in humans. Pick the odd one

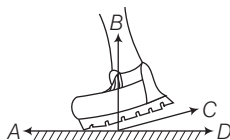
(a) Uterus

(b) Epididymis

(c) Cervix

(d) Vagina

11. Which arrow shows the direction of the force of friction acting on the runner's shoe?



(a) A

(b) B

(c) C

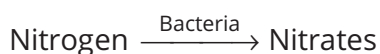
(d) D

12. Observe the figure given below and opt the incorrect reason for its poisoning.



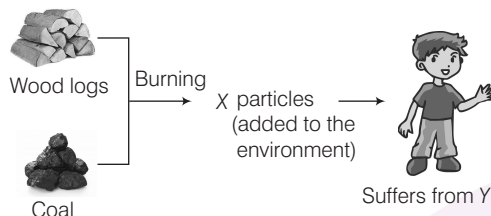
- (a) The food is spoiled by toxic substances produced by microorganisms.
- (b) The food has undergone a chemical change.
- (c) Its poisoning occurs due to dehydration.
- (d) The food was poisoned due to improper preservation.

13. Observe and identify the process shown by the equation



- (a) Nitrification
- (b) Nitrogen fixation
- (c) Decomposition
- (d) Denitrification

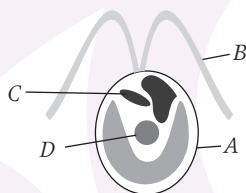
14. Consider the following diagram.



Here, X and Y are

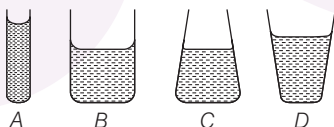
- (a) burnt carbon, respiratory disease.
- (b) burnt carbon, nervous disease.
- (c) unburnt carbon, respiratory disease.
- (d) unburnt carbon, nervous disease.

15. Which part of the *Chlamydomonas* helps it to move?



- (a) A–Nucleus
- (b) B–Flagella
- (c) C–Pseudopodia
- (d) D–Mitochondria

16. Equal masses of water are poured into four jars as shown below:



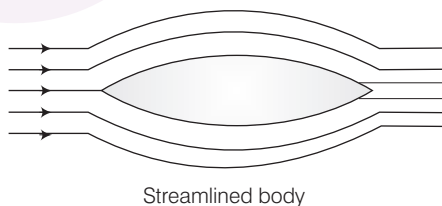
In which jar is the pressure exerted by the water on the base, the greatest?

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

17. What is the correct order for the speed of sound in air, steel and water?
slowest → fastest
(a) air, steel, water (b) air, water, steel (c) water, air, steel (d) water, steel, air
18. A polyester fabric should not be ironed with a hot iron because
(a) it is a waste of electricity. (b) the polyester will melt.
(c) the polyester will catch fire. (d) the polyester will lose its colour.
19. Which of the following are the constituents of petroleum?
(a) Diesel, paraffin (b) CNG, coal tar (c) Coal tar, bitumen (d) Kerosene, coal gas
20. Select the incorrect differences between National park and Sanctuary.

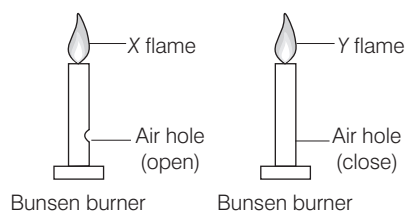
| National park | Sanctuary |
|--|---|
| I. It is meant for protection of flora only. | It is meant for protection of fauna only. |
| II. Grazing is allowed. | Grazing is not allowed. |
| III. Private ownership is not permitted. | Private ownership is permitted. |
| IV. e.g. Jim Corbett, Manas. | e.g. Keoladeo, Kaziranga. |

- (a) I and III (b) I and IV (c) II and III (d) II and IV
21. In asexual reproduction, what would most likely result if mitosis was not accompanied by cytoplasmic division?
(a) two cells, each with one nucleus (b) two cells, each without a nucleus
(c) one cell, with two identical nuclei (d) one cell, without nucleus
22. A rocket and a bird have a streamlined shaped body (as shown in figure below) because



- (a) it gives force to move.
(b) it moves through air with minimum friction.
(c) it increases the speed of the object.
(d) All of the above
23. The list of diseases given below are transmitted through air. However, there is a difference between them as well. Spot the difference and pick the odd one out.
(a) Tuberculosis (b) Chickenpox (c) Measles (d) Polio
24. A coil of copper wire can be made by pulling a large piece of copper metal. This is due to which of the following properties of copper?
(a) Malleability (b) Ductility
(c) Tensile strength (d) Conductivity

25. Consider the following figures.



Here, X and Y respectively are

- (a) blue and green. (b) yellow and blue.
(c) yellow and green. (d) blue and yellow.

26. Which of the option correctly mark the structures present in animal cells?

Key

✓ = structure present

× = structure absent

| | Cell membrane | Cell wall | Chloroplasts | Cytoplasm |
|-----|---------------|-----------|--------------|-----------|
| (a) | × | ✓ | ✓ | ✓ |
| (b) | ✓ | × | × | ✓ |
| (c) | ✓ | × | ✓ | × |
| (d) | ✓ | ✓ | × | ✓ |

27. During dry weather, while combing hair, sometimes we experience hair flying apart. The force responsible for this is

- (a) a force of gravity. (b) a force of friction.
(c) an electrostatic force. (d) a magnetic force.

28. Lightning can be seen the moment it occurs. Paheli observes lightning in her area. She hears the sound 5 s after she observed lightning. How far is she from the place where lightning occurs? (Speed of sound = 330 m /s).

- (a) 16.5 km (b) 1.65 km
(c) 165 km (d) 3.35 km

29. Out of the following materials, what are the materials used as a substitute for glass and wool, respectively?

Nylon, polyester, lycra, linen, polyamide, acrylic, PET, rayon

- (a) Polyamide, polyester (b) Polyamide, acrylic
(c) PET, acrylic (d) Lycra, nylon

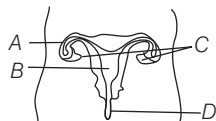
30. Rohan saw a bucket filled with some black liquid.

When he went near the liquid, he felt some unpleasant odour. The engineer working there tell him that this substance is a mixture of 200 substances.

On the basis of information provided above, could you guess what was that substance?

- (a) Coke (b) Coal (c) Coal tar (d) Coal gas

31. Arrange in order, the process that leads to desertification.
- Soil erosion → fewer trees → removal of top layer of soil → less fertility, less humus → desertification
 - Fewer trees → removal of top layer of soil → less fertility, less humus → soil erosion → desertification
 - Removal of top layer of soil → fewer trees → soil erosion → less fertility, less humus → desertification
 - Fewer trees → soil erosion → removal of top layer of soil → less fertility, less humus → desertification
32. In which part of the female reproductive system does a fertilised egg normally develop into a baby?



- A
 - B
 - C
 - D
33. Four children were asked to arrange forces due to rolling, static and sliding frictions in a decreasing order. Their arrangements are given below. Choose the correct arrangements.
- Rolling, static, sliding
 - Rolling, sliding, static
 - Static, sliding, rolling
 - Sliding, static, rolling
34. We sometime observe ingredients written as shown in the figure, on the packed foods. What does this symbol 'E' represent?
- Food preservative
 - Food additive
 - Neutraliser
 - All of these
35. Styrofoam cup is used to serve hot tea or coffee as it is
- I. a poor conductor of heat. II. highly flexible. III. easy to clean.
- The correct reason(s) is/are
- Only I
 - I and II
 - I and III
 - I, II and III
36. In case of good fuels, ignition temperature is X and calorific value is Y . X and Y respectively are
- low and high.
 - low and low.
 - high and low.
 - high and high.
37. Why do our cells have to undergo cell division?
- To help us grow bigger in size.
 - To replace cells that die.
 - To help repair damaged parts of our bodies.
 - To use up the food that is found in the cells.
- A and B
 - B, C and D
 - A, B, C
 - A, B, C and D

38. A box was pushed over an equal distance on four different surfaces. The force needed for each surface was recorded on the table below:

| Surface | A | B | C | D |
|--------------|-----|-----|-----|-----|
| Force needed | 400 | 575 | 475 | 375 |

On which surface, was the friction least?

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

39. A list of various characteristics of sound is given as below:

I. Shrillness II. Pitch III. Frequency IV. Loudness V. Speed

Pick the odd ones out from the above characteristics.

- (a) I and III (b) I and IV (c) IV and V (d) II and V

40. The non-sticky cookware are generally recommended to heart patients. This is because they

- (a) do not absorb water. (b) do not absorb oil.
(c) cook faster. (d) are biodegradable.

Section B (2 Marks)

41. Match the substances given in Column I with their applications given in Column II and choose the correct answer using the codes given below.

| Column I | Column II |
|-------------|----------------------------------|
| p. Oxygen | (i) For making crackers |
| q. Copper | (ii) For disinfecting water |
| r. Sulphur | (iii) For breathing |
| s. Iron | (iv) For making electrical wires |
| t. Chlorine | (v) For making rails |
| | (vi) For making fertilisers |

Codes

- | | | | | |
|-----------|------|------|------|------|
| p | q | r | s | t |
| (a) (iii) | (iv) | (i) | (v) | (ii) |
| (b) (iii) | (iv) | (vi) | (v) | (ii) |
| (c) (iii) | (iv) | (i) | (ii) | (v) |
| (d) (iii) | (i) | (iv) | (v) | (ii) |

42. State 'T' for true and 'F' for false.

- Wildlife is an exhaustible natural resource.
- Methane is released during mining of coal.
- Fossil fuels should be conserved because they give out lots of heat.
- Resources that are present in unlimited quantity in nature are called exhaustible natural resources.
- Burning of coal in insufficient amount of oxygen results in the formation of carbon dioxide.

Codes

| | I | II | III | IV | V | | I | II | III | IV | V |
|-----|---|----|-----|----|---|-----|---|----|-----|----|---|
| (a) | T | T | F | T | F | (b) | F | T | T | F | F |
| (c) | T | T | F | F | F | (d) | T | F | F | F | F |

43. Consider the passage and fill the blanks correctly.

(i)____ is form of asexual reproduction that occurs when a small out growth pinches off from a large cell. (ii)____ and (iii)____ both follow this method of reproduction. In some species this small outgrowth produced from almost any point of the body. The initial protuberance of proliferating (iv)____ or cell, develops into an organism duplicating the parent.

Codes

| | (i) | (ii) | (iii) | (iv) |
|-----|----------------|---------------|--------------|-----------|
| (a) | Binary fission | <i>Amoeba</i> | Yeast | Cytoplasm |
| (b) | Binary fission | <i>Amoeba</i> | <i>Hydra</i> | Cytoplasm |
| (c) | Budding | Yeast | <i>Hydra</i> | Nucleus |
| (d) | Budding | Yeast | <i>Hydra</i> | Cytoplasm |

44. **Assertion (A)** A camel can move easily on sand as compared to a horse.

Reason (R) The broader feet of camel provide more pressure on the ground and it becomes easier for camel to walk on the sand.

- (a) Both A and R are true and R is the correct explanation for A
 (b) Both A and R are true, but R is not the correct explanation of A
 (c) A is true, but R is false
 (d) Both A and R are false

45. Match the following for the flame of a candle and choose the correct answer using the codes given below.

| Column I | Column II (Zone) | Column III (Colour) |
|-------------------|---|---------------------|
| p. Hottest part | (i) Innermost zone of unburnt wax vapours | (x) Blue |
| q. Moderately hot | (ii) Middle zone of partial combustion | (y) Black |
| r. Least hot | (iii) Outer zone of complete combustion | (z) Yellow |

- (a) p – (i) (y), q – (ii) (z), r – (iii) (x)
 (b) p – (iii) (x), q – (i) (y), r – (ii) (z)
 (c) p – (iii) (x), q – (ii) (y), r – (i) (z)
 (d) p – (iii) (x), q – (ii) (z), r – (i) (y)

46. Read the given statements and select the correct option.

Statement I A plant or animal species which is exclusively found in a particular area and is not found naturally anywhere else, is known as endemic species.

Statement II The existence of endemic species is often threatened due to the introduction of exotic species from some other geographical area.

- (a) Both statements I and II are true and statement II is the correct explanation of statement I
- (b) Both statements I and II are true but statement II is not the correct explanation of statement I
- (c) Statement I is true and statement II is false
- (d) Both statements I and II are false

47. Assertion (A) Two persons on the surface of Moon can not talk to each other.

Reason (R) There is no atmosphere.

- (a) Both A and R are correct and R is the correct explanation of A
- (b) Both A and R are correct, but R is not the correct explanation of A
- (c) A is true, but R is false
- (d) Both A and R are false

Direction (Ques. 48-50) Read the passage and answer the questions that follow

Take a short look around you. You will find several things that are made up of metals, e.g. electrical wire (uncoated), fans, utensils, chairs (metallic), ornaments, car engine, scooter parts, etc. Thus, you observe that a major part of our life also depend upon metals. But are the metals used for different purposes, same or different? It depends completely on the purpose for which a metal is used and on the properties of the metals.

Ravi made a table of properties of four materials *P*, *Q*, *R* and *S*.

| Materials | Melting point | Boiling point | Hardness | Malleability | Electrical conductivity | Corrosion resistant | Thermal conductivity |
|-----------|---------------|---------------|----------|--------------|-------------------------|---------------------|----------------------|
| <i>P</i> | Low | Low | Soft | High | Conductor | No | Good |
| <i>Q</i> | Very high | Low | Hard | Low | Conductor | No | Good |
| <i>R</i> | High | High | Soft | High | Good | Yes | Poor |
| <i>S</i> | High | Low | Hard | High | Poor | No | Good |

48. Which of the following materials can be supposed to be used for making utensils?

- (a) *P*
- (b) *Q*
- (c) *R*
- (d) *S*

49. Which of the following materials can be used for making ornaments?

- (a) *P*
- (b) *Q*
- (c) *R*
- (d) *S*

50. The heating element of electrical appliances can be made from

- (a) *P* and *Q*
- (b) *Q*
- (c) *R* and *S*
- (d) *S*

ANSWER KEY

Science Class 8th

| | | | | | |
|-----|-----|-----|-----|-----|-----|
| 1. | (c) | 18. | (b) | 35. | (a) |
| 2. | (b) | 19. | (a) | 36. | (a) |
| 3. | (c) | 20. | (a) | 37. | (b) |
| 4. | (c) | 21. | (c) | 38. | (d) |
| 5. | (c) | 22. | (b) | 39. | (c) |
| 6. | (d) | 23. | (a) | 40. | (b) |
| 7. | (b) | 24. | (b) | 41. | (a) |
| 8. | (c) | 25. | (d) | 42. | (c) |
| 9. | (a) | 26. | (b) | 43. | (d) |
| 10. | (b) | 27. | (c) | 44. | (c) |
| 11. | (a) | 28. | (b) | 45. | (d) |
| 12. | (c) | 29. | (c) | 46. | (b) |
| 13. | (b) | 30. | (c) | 47. | (a) |
| 14. | (c) | 31. | (a) | 48. | (d) |
| 15. | (b) | 32. | (b) | 49. | (c) |
| 16. | (a) | 33. | (c) | 50. | (b) |
| 17. | (b) | 34. | (b) | | |

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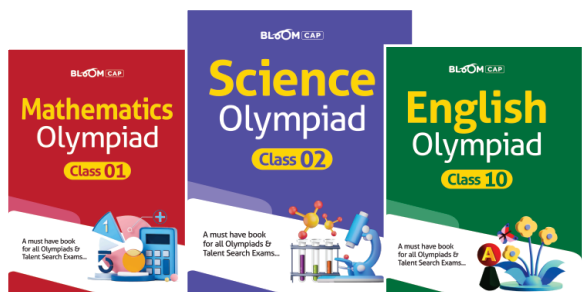
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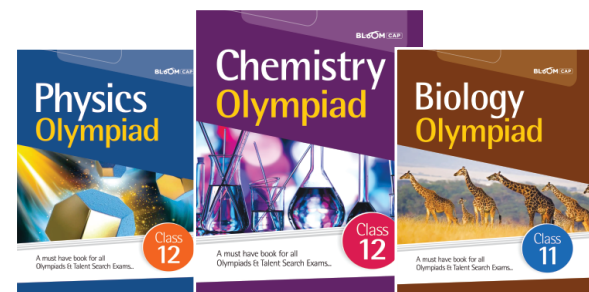
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