



School Level Examination  
SLE 2023

**GRADE**  
**9**

**SCIENCE**

Subject Code: 

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Total Questions: 50

Time: 1 hour

**DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED TO DO SO**

- All questions are compulsory.
- Read the instructions on the **ANSWER SHEET** and fill in your **NAME, CLASS** and **OTHER INFORMATION**.
- To mark your choice of answer by darkening the circles in the **ANSWER SHEET**, use a **BLUE/BLACK BALLPEN** only.
- You **MUST** record your answers on the **ANSWER SHEET** only.
- There are **50 MULTIPLE CHOICE QUESTIONS**. Use the information provided to choose the **BEST** possible answer among the four options. On your **ANSWER SHEET** fill in the circle that matches your answer.
- Marks are **NOT** deducted for incorrect answers.
- Return the **ANSWER SHEET** to the invigilator at the end of the examination.
- You are **NOT** allowed to use a calculator. You may use a ruler and spare paper for rough work.

SCIENCE

This question paper contains a total of 50 questions divided into three sections - A, B and C.  
Read the instructions carefully before attempting these questions.

**Section A (Logical Reasoning)**

1. Sets of letters in each pair are connected in the same way. Identify the correct set that can take place of the missing set.

ORANGE : Y B Z M Q O :: ? : Q B Z O O C

- (A) GRAPES (B) PAPAYA  
(C) BANANA (D) GRAEEB

2. Complete the given pattern. Sedative : Pain :: Solace : ?

- (A) Hurt (B) Grief  
(C) Irritation (D) Kill

3. If all the consonants starting from B are given sequentially the value of even numbers, such as B = 2, C = 4 and so on, and all vowels are given double the value of the preceding vowel and the value of A is 5, then what is the value of REASONING?

- (A) 160 (B) 187  
(C) 172 (D) 193

4. Complete the given pattern. 2, 9, 28, 65, \_\_\_\_\_?

- (A) 125 (B) 126  
(C) 124 (D) 127

5. In a row of children, Nidhi is twelfth from left end and Radha is sixth from right end. When Radha is shifted to left by two places and Nidhi is shifted to right by two places, there are six children between Radha and Nidhi. How many children are there in the row?

- (A) 25 (B) 26  
(C) 28 (D) 30

6. A three centimetre cube has been painted blue on all sides. It is cut into one centimetre cubes. How many cubes will be there with two sides painted blue?

- (A) 8 (B) 4  
(C) 6 (D) 12

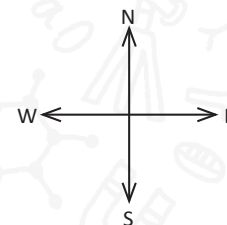
7. In the following number series, how many 5s are immediately preceded by a pair of numbers whose product is more than the product of the pair of numbers immediately following it.

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- (A) 2 (B) 3  
(C) 5 (D) 6

8. A man walks 5 m towards South, then 2 m towards East and then 2 m towards South again. He then moves 4 m towards West, and 7 m towards North. Which direction should he take to reach the starting point?

- (A) West (B) East  
(C) South (D) North



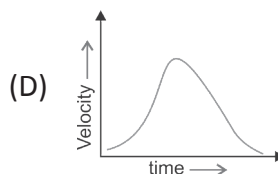
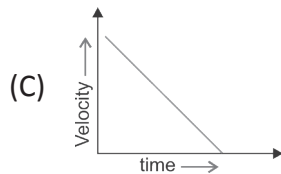
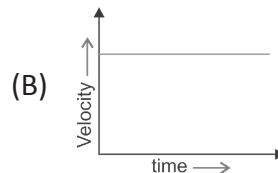
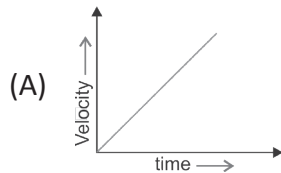
9. Reaching the meeting point on Wednesday 20 minutes before 10:30 hours, Inder found himself half an hour earlier than the executive who was 25 minutes late. What was the scheduled time for meeting.
- (A) 10:10 hours (B) 10:40 hours  
(C) 10:20 hours (D) 10:15 hours
10. Select the one which is different from the other three.
- (A) Lion (B) Goat  
(C) Tortoise (D) Centaur

### Section B (Subject Specific)

11. Mohan starts from home to his office, travels at a speed of 5 m/s, and returns to home with the same speed. Calculate his total velocity.
- (A) 5 m/s (B) 8 m/s  
(C) 2 m/s (D) Zero
12. Which of the following factors affects the rate of evaporation?
- (A) Temperature and exposed surface area of the liquid. (B) Air flow and humidity in the surrounding air.  
(C) Air pressure and nature of the liquid. (D) All of these
13. Ortho-nitrophenol is steam volatile (vaporised by steam) whereas para-nitrophenol is not. They can be separated by \_\_\_\_\_.
- (A) fractional distillation (B) steam distillation  
(C) vacuum distillation (D) distillation
14. Read the following statements and select the correct option.
- (A) Manure helps in enriching soil with nutrients and organic matter and increasing soil fertility.  
(B) Fertilizers supply nitrogen, phosphorus and potassium.  
(C) Compost prepared by using earthworms is called vermi-compost.  
(D) All of these
15. The formula of Copper phosphate is:
- (A)  $\text{CuPO}_4$  (B)  $\text{Cu}_3\text{PO}_4$   
(C)  $\text{Cu}_3(\text{PO}_4)_2$  (D)  $\text{Cu}(\text{PO}_4)_3$
16. Which of the following statements is incorrect about cells?
- (A) Cells vary in shape, size, structure and function.  
(B) Red blood cells are round and biconcave in shape.  
(C) Guard cells are bean shaped.  
(D) Cells are too small and cannot be seen through microscope.
17. 1000 kg of bauxite contains 825 kg of  $\text{Al}_2\text{O}_3$ , 100 kg of  $\text{Fe}_2\text{O}_3$  and 75 kg of sand. What percentage of impurity is present in this ore?
- (A) 7.5% (B) 17.5%  
(C) 82.5% (D) 70%



26. Which of the following velocity-time graphs is representing uniform motion?



27. The given schematic atomic structure is of \_\_\_\_\_.

- (A) Magnesium  
(C) Aluminum

- (B) Silicon  
(D) Sodium



28. Which of the following can never be negative?

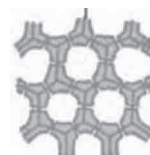
- (A) Displacement  
(C) Speed  
(B) Velocity  
(D) Both (A) and (B)

29. Select the situation that explains the Newton's second law of motion.

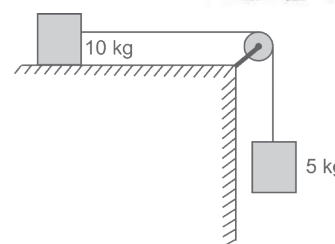
- (A) A force can stop a lighter vehicle as well as a heavier vehicle which are moving  
(B) A force exerted by a lighter vehicle on collision with a heavier vehicle results in both the (vehicles coming to a standstill)  
(C) A force can accelerate a lighter vehicle more easily than a heavier vehicle which are moving  
(D) A force exerted by the escaping air from a balloon in the downward direction makes the balloon to go upwards

30. Study the given figure and select the correct function.

- (A) Stores food in plants  
(C) Provides mechanical support to plants  
(B) Provides strength to the plants  
(D) Both (B) and (C)



31. Two masses 10 kg and 5 kg respectively are connected by a string passing over a frictionless pulley fixed at the corner of the table. The coefficient of friction of 10 kg mass with the table is 0.2. The minimum mass 'M' that may be placed on it to prevent it from moving is equal to



- (A) 0 kg  
(C) 10 kg  
(B) 5 kg  
(D) 15 kg

32. In an energy transformational sequence which of the following produces kinetic energy from gravitational potential energy as a part of the sequence?

- (A) Burning of fuel in thermal power station  
(C) Generating energy in nuclear power station  
(B) Generating hydroelectric energy  
(D) Generating energy in geothermal power station

33. According to the Universal Law of Gravitation, \_\_\_\_\_.

- (A) the force between two objects is directly proportional to the product of their masses  
(B) the force between two objects is inversely proportional to the product of their masses  
(C) the force between two objects is directly proportional to the sum of their masses  
(D) the force between two objects is inversely proportional to the sum of their masses

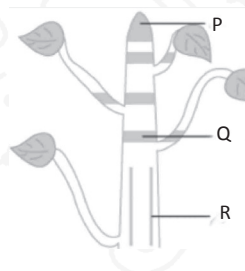
34. Two ions,  $Zn^{2+}$  and  $S^{2-}$ , combine to form a compound. What should be the formula of the compound formed?
- (A) ZnS (B)  $Zn_2S$   
(C)  $ZnS_2$  (D)  $Zn_2S_2$
35. Which of the following is /are marine fish variety?
- (A) Pomphret (B) Tuna  
(C) Bombay duck (D) All of these

**Instruction: Q. 36 to 40 are two-key based questions having four options A, B, C and D out of which TWO are correct.**

36. Which of the following will have high pitch sound?
- (A) Flute (B) Tabla  
(C) Man's voice (D) Bus
37. Read the following statements and select the correct options.
- (A) Blood and bone are examples of connective tissue.  
(B) Tendons contain very little matrix and connect bones with bones.  
(C) Bone cells are embedded in a hard matrix that is composed of calcium and phosphorus compounds.  
(D) The nature of matrix is similar in concordance with the function of the particular connective tissue.
38. Which of the following is true for displacement?
- (A) It is a vector quantity. (B) It is a scalar quantity.  
(C) It may be positive, negative or zero. (D) None of these
39. In which of the following examples, nervous tissues are not found?
- (A) Brain (B) Spinal cord  
(C) Basophils (D) Tendons
40. Which of the following substances undergoes sublimation?
- (A) Camphor (B) Iodine  
(C) NaCl (D) None of these

### Section C (Competency Enhancement)

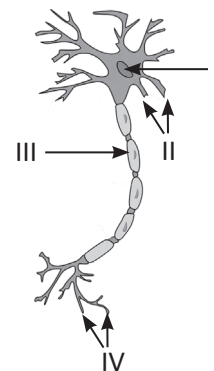
41. Read the following statements and select the correct option.
- Statement 1:** Xylem and phloem are examples of complex tissues.  
**Statement 2:** Both xylem and phloem are conducting tissues and constitute a vascular bundle.
- (A) Both statements 1 and 2 are correct. (B) Both statements 1 and 2 are incorrect.  
(C) Statement 1 is correct but 2 is incorrect. (D) Statement 1 is incorrect but 2 is correct.
42. Look at the given figure and select the correct option.
- (A) Part P increases the length of the stem and the root.  
(B) Part Q is located near the node.  
(C) The girth of the stem or root increases due to part R.  
(D) All of these





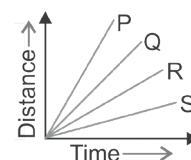
43. A ball of mass 100 g is thrown vertically upwards with an initial speed of  $10 \text{ m s}^{-1}$ . Its speed decreases continuously till it becomes zero and thereafter the ball starts falling downwards and attains velocity of  $10 \text{ m s}^{-1}$  again. Which of the following statements are correct?
- The magnitudes of initial and final momentum is same.
  - It is an example of conservation of momentum.
  - Law of conservation of momentum is applicable to the isolated system.
  - Change in velocity is due to gravitational force of the earth.
- (A) I, II and III (B) I, II and IV  
(C) I, III and IV (D) II, III and IV
44. Suppose a boy is moving with a uniform velocity of  $10 \text{ m/s}$  on a merry-go-round ride. Which of the following is true of the given scenario?
- (A) The boy is at rest (B) The boy is moving with no acceleration  
(C) The boy is moving with accelerated motion (D) The boy is moving with uniform velocity
45. If a gold sample contains 90% of gold and rest is copper. How many atoms of gold are present in 1 gram of such sample? (Atomic mass of Au = 197 u)
- (A)  $2.77 \times 10^{23}$  atoms (B)  $2.77 \times 10^{22}$  atoms  
(C)  $2.77 \times 10^{21}$  atoms (D)  $2.77 \times 10^{24}$  atoms
46. A compound 'X' contains 50% sulphur and 50% oxygen by mass. The formula of compound 'X' is
- (A)  $\text{SO}_2$  (B)  $\text{SO}_3$   
(C) SO (D)  $\text{S}_2\text{O}$
47. A person met with an accident in which his two long bones of hand were dislocated. According to you, what could be the reason?
- (A) Tendon breakage (B) Skeletal muscle breakage  
(C) Ligament breakage (D) Areolar tissue breakage
48. Identify I, II, III and IV in the given diagram of neurons.

(P)	I. Nucleus	II. Dendrites	III. Axon	IV. Axon terminals
(Q)	I. Dendrites	II. Axon	III. Nucleus	IV. Axon terminals
(R)	I. Axon	II. Nucleus	III. Dendrites	IV. Axon terminals
(S)	I. Nucleus	II. Axon	III. Dendrites	IV. Axon terminals



- (A) P (B) Q  
(C) R (D) S

49. Four cars P, Q, R and S are moving on a road. Their distance-time graph is shown alongside. Choose the correct statement.



- (A) 'P' is the slowest (B) 'P' is the fastest  
(C) 'S' is the fastest (D) 'S' is moving faster than R.
50. Ramesh drives a bike from A to B with a uniform speed of  $60 \text{ km hr}^{-1}$  and returns back with a speed of  $40 \text{ km hr}^{-1}$  to same place. The average speed is
- (A)  $24 \text{ km hr}^{-1}$  (B)  $48 \text{ km hr}^{-1}$   
(C)  $72 \text{ km hr}^{-1}$  (D)  $12 \text{ km hr}^{-1}$

