SCIENCE OLYMPIAD FOUNDATION

SAMPLE PAPER SYLLABUS 2021-22

CLASS **7**

NSO

SOF NATIONAL SCIENCE OLYMPIAD

Total Questions : 50 | Time : 1 hr.

PATTERN & MARKING SCHEME			
Section	**(1) Logical Reasoning**	**(2) Science**	**(3) Achievers Section**
No. of Questions	**10**	**35**	**5**
Marks per Ques.	**1**	**1**	**3**

SYLLABUS

Section – 1 : Verbal and Non-Verbal Reasoning.

Section – 2 : Heat, Motion and Time, Electric Current and its Effects, Winds, Storms and Cyclones, Light, Acids, Bases and Salts, Physical and Chemical Changes, Weather, Climate and Adaptations of Animals to Climate, Fibre to Fabric, Nutrition in Plants and Animals, Respiration in Organisms, Transportation in Plants and Animals, Reproduction in Plants, Natural Resources and Their Conservation (Soil, Water: A Precious Resource, Forests our Lifeline, Wastewater Story).

Section – 3 : Higher Order Thinking Questions - Syllabus as per Section – 2.

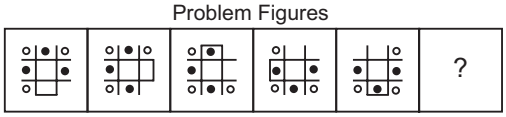
LOGICAL REASONING

1. If '+' is called '×', '–' is called '÷', '×' is called '–' and '÷' is called '+', then what will be the value of 16 ÷ 64 – 8 × 4 + 2 = ?

(A) 18 (B) 14
(C) 24 (D) 16

2. Select a figure from the options which will continue the same series as established by the Problem Figures.

Problem Figures



(A) 
(B) 
(C) 
(D) 

3. How many 5's are there in the following sequence such that the sum of the two immediately following digits is greater than the sum of the two immediately preceding digits?

3 7 6 5 8 3 2 4 5 5 4 8 7 9 1 5 3 4 8 7 5 9 8 7 6 4

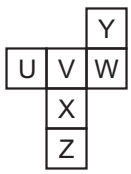
(A) One (B) Two
(C) Three (D) Four

4. Anuradha remembers that her friend had visited her after 13th but before 18th of the month, while Anuradha's sister remembers that Anuradha's friend had visited after 16th but before 20th. If it was Saturday on 16th of the month, then on which day of the week, Anuradha's friend visit her?

(A) Saturday (B) Monday
(C) Sunday (D) None of these

5. Which of the following alphabet will be on the face opposite to the face having alphabet X, if the given sheet of paper is folded to form a cube?

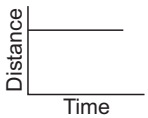
(A) Z
(B) U
(C) V
(D) Y

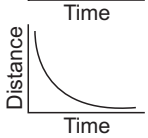


SCIENCE

6. A body moves with uniform velocity. Which of the graphs shown here is a graph of distance against time for this motion?

(A) 

(B) 

(C) 

(D) 

7. Rima prepared an indicator paper by dipping a paper strip in a solution of *X*. She put a few drops of an unknown solution *Y* which contains H^+ ions less than OH^- ions on this paper. She observed that the colour of paper turned yellow. What could be the solution *X*?

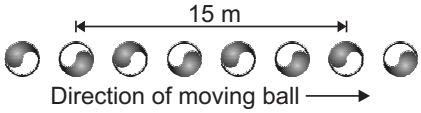
(A) Red litmus solution (B) Phenolphthalein
(C) Methyl orange (D) Turmeric solution

8. Which of the following stages in the life history of a silk moth produces silk fibres?

(A)  (B) 

(C)  (D) 

9. The given diagram shows a series of images of a moving ball captured by a camera.



The ball was moving at a constant velocity and the images were taken at a constant rate of 10 per second. What is the speed of the ball?

(A) 30 m s^{-1} (B) 20 m s^{-1}
(C) 45 m s^{-1} (D) 15 m s^{-1}

10. The temperature at which no more energy can be removed from matter is called

(A) Absolute zero (B) Boiling point
(C) 32° F (D) 32°C

11. In a pressure-kerosene stove,

(i) We pump kerosene and convert it into vapours.
(ii) The vapours are then ignited.

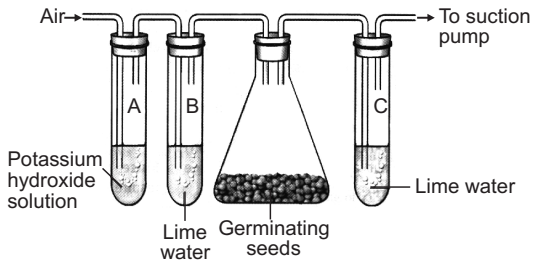
Which of the following is true about the above statements?

(A) (i) is a chemical change; (ii) is a physical change.
(B) (i) is a physical change; (ii) is a chemical change.
(C) Both (i) and (ii) are physical changes.
(D) Both (i) and (ii) are chemical changes.

12. Which of the following substances is/are present in a higher percentage in exhaled air than in inhaled air?

(i) Carbon dioxide (ii) Oxygen
(iii) Water vapour (iv) Nitrogen
(A) (i) only
(B) (i) and (iii) only
(C) (ii) and (iv) only
(D) (i), (ii), (iii) and (iv)

13. Study the given set up of an experiment. You will observe that

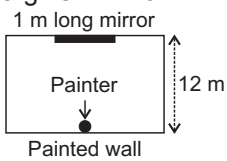


(A) Lime water in test tube B turns milky
(B) Lime water in test tube C turns milky
(C) Potassium hydroxide solution in test tube A turns red
(D) Temperature in the flask will go down.

ACHIEVERS SECTION

14. A painter leans his back against a painted wall while looking into a 1 m long mirror at the opposite end of a rectangular room as shown in the given figure. How much of the painted wall can he see through the given mirror?

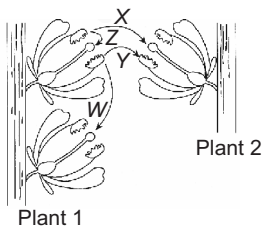
(A) 1 m
(B) 2 m
(C) 6 m
(D) 12 m



15. The given diagram shows two plants of the same species. Refer to the diagram and answer the following questions.

(i) Which arrow indicates a process that would not lead to sexual reproduction?
(ii) Which arrow represents a type of pollination that would result in greater adaptability of the particular species to potential environmental changes?

(A) (i)-*Y*, (ii)-*Z*
(B) (i)-*Z*, (ii)-*X*
(C) (i)-*Y*, (ii)-*X*
(D) (i)-*X*, (ii)-*Y*



SPACE FOR ROUGH WORK

ANSWERS

1. (D) 2. (D) 3. (C) 4. (C) 5. (D) 6. (A) 7. (C) 8. (C) 9. (A) 10. (A) 11. (B) 12. (B) 13. (B) 14. (B) 15. (C)