



NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION (UPDATED)

CLASS - 5

Question Paper Code : 1P114

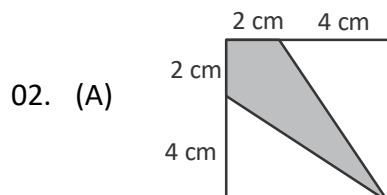
KEY

1. C	2. A	3. B	4. C	5. B	6. A	7. B	8. C	9. C	10. B
11. D	12. C	13. B	14. C	15. C	16. D	17. A	18. C	19. A	20. B
21. C	22. B	23. C	24. C	25. A	26. C	27. D	28. A	29. B	30. B
31. C	32. B	33. B	34. A	35. A	36. B	37. C	38. B	39. A	40. A
41. B	42. B	43. C	44. A	45. B	46. A	47. A	48. B	49. C	50. B
51. A	52. C	53. B	54. C	55. D	56. B	57. C	58. C	59. B	60. C

SOLUTIONS

MATHEMATICS

01. (C) Number: 12323314
Compare ends: 1...4 → remove 4
2...1 → remove 2
3...3 → keep
2...3 → remove 2
After removing 3 digits, we get 12332, a palindrome.



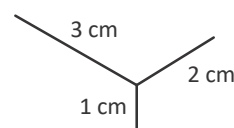
$$= \frac{1}{2} \times 4 \times 6 = \frac{24 \text{ cm}}{2} = 12 \text{ cm}$$

$$\text{Area of square} = 6^2 = 36$$

$$36 \text{ cm} - 24 \text{ cm} = 12 \text{ cm}$$


$$\text{Fraction} = \frac{12}{36} = \frac{1}{3}$$

03. (B)



$$= (3 + 1 + 1 + 2) \text{ cm} = 7 \text{ cm}$$

04. (C) $1 \div 0.01 = 100$

05. (B) A perfect number is a number whose proper factors (excluding the number itself) add up exactly to the number
 21 Factors : 1, 3, 7 $\rightarrow 1 + 3 + 7 = 11$
 22 $\rightarrow 1 + 2 + 11 = 14$
 23 \rightarrow Prime
 24 $\rightarrow 1 + 2 + 3 + 4 + 6 + 8 + 12 = 36$
 25 $\rightarrow 1 + 5 = 6$
 26 $\rightarrow 1 + 2 + 13 = 16$
 27 $\rightarrow 1 + 3 + 9 = 13$
 28 $\rightarrow 1 + 2 + 4 + 7 + 14 = 28$ Perfect number
 29 \rightarrow Prime
 Only 1 Perfect number is there between 20 and 30, which is 28
06. (A) 
 $P = 40 \text{ cm}$ $P = 40 \text{ cm}$
 Square $40 \div 4 = 10 \text{ cm}$
 $A = 100 \text{ cm}$
 b of rectangle = $20 \text{ cm} - 14 \text{ cm} = 6 \text{ cm}$
 $A = 14 \text{ cm} \times 6 \text{ cm} = 84 \text{ cm}^2$
 Difference = $100 \text{ cm}^2 - 84 \text{ cm}^2 = 16 \text{ cm}^2$
07. (B) Rhombus has all sides equal, but only opposite angles are equal.
08. (C) Using combinations,
 $43 \times 21 = 903$, $42 \times 31 = 1302$
09. (C) $25\% \text{ of } 200 = 50 \rightarrow 200 - 50 = \text{Rs. } 150$
10. (B) Bala : total = $25 : 100 = 1 : 4$
11. (D) $6 \text{ hours} \times 2^\circ\text{C} = 12^\circ\text{C rise} \rightarrow 14 + 12 = 26^\circ\text{C}$.
12. (C) Total juice = $3.6 \text{ L} = 3600 \text{ ml}$
 Juice poured = $10 \times 300 \text{ ml} = 3000 \text{ ml}$
 Juice left = $3600 - 3000 = 600 \text{ ml}$
 $= 0.6 \text{ L} = 600 \text{ ml}$
13. (B) Difference in speed = $5 - 4 = 1 \text{ km/h}$
 In 2 hours: $1 \times 2 = 2 \text{ km apart}$
14. (C) Container B = $250 \times 2 = 500 \text{ ml}$
 Container C = $500 \div 2 = 250 \text{ ml}$
15. (C) Find HCF of 24 and 30 $\rightarrow 6 \rightarrow$ number of baskets.
 Each basket has:
 Apples: $24 \div 6 = 4$
 Oranges: $30 \div 6 = 5$
 Total fruits per basket = $4 + 5 = 9$
16. (D) $99,999 - 10,000 = 89,999$
17. (A) Sugar : Flour = $2 : 5$
 Flour used = 10 cups $\rightarrow 5 \text{ parts} = 10 \rightarrow 1 \text{ part} = 2 \text{ cups}$
 Sugar = 2 parts $\rightarrow 2 \times 2 = 4 \text{ cups}$
18. (C) If all tables were rectangular (4 legs each), total legs would be:
 $50 \times 4 = 200 \text{ legs}$
 But we have 240 legs. So there are:
 $240 - 200 = 40 \text{ extra legs}$
 Each hexagonal table has 6 legs, i.e., 2 more legs than a rectangular table.
 So, the number of hexagonal tables is:
 $\text{Extra legs} \div 2 = 40 \div 2 = 20$
 So, 20 hexagonal tables were made.
19. (A) $\frac{7}{10} - \frac{2}{5} + \frac{1}{2} = \frac{7}{10} - \frac{4}{10} + \frac{5}{10}$
 $= \frac{7 - 4 + 5}{10} = \frac{8}{10} = \frac{4}{5}$
 \therefore The missing number is 5.
20. (B) Only one non-zero digit (4) and rest zeros \rightarrow product = 0
21. (C) According to the problem, the number of pens is exactly divisible by 18.
 Also, the number is 5 less to be divisible by 19.
 \therefore The required number is $19 \times 5 - 5 = 95 - 5 = 90$, which is exactly divisible by 18

22. (B) Length (l), Breadth (b)

$$\Rightarrow P = 2(l + b) \text{ units}$$

When length and breadth are doubled,

$$l \rightarrow 2l \quad b \rightarrow 2b$$


$$\text{Then } P = 2(2l + 2b)$$


$$= 2 \times [2(l + b)]$$


$$= 2 \times P$$

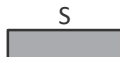
i.e., perimeter is doubled.

23. (C) $\angle BOD$

24. (C)  P = 8 units
A = 4 units²

-  Q P = 10 units
A = 5 units²

-  R P = 12 units
A = 5 units²

-  S P = 10 units
A = 4 units²

25. (A) Part of the book read = $\frac{3}{5}$
 \therefore Part of the book left to be read

$$= 1 - \frac{3}{5} = \frac{2}{5}$$

No. of pages left to be read = 80

$$\therefore \frac{2}{5} \text{ part} = 80$$

\therefore No. of pages in the book

$$= 80 \times \frac{5}{2}$$

$$= 40 \times 5 = 200$$

GENERAL SCIENCE

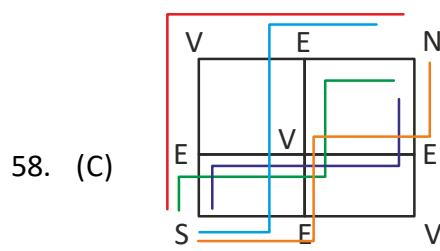
26. (C) Earth's rotation changes Sun exposure
Solution: As Earth rotates, only the hemisphere facing the Sun receives light, while the opposite side experiences darkness.
27. (D) Limestone is made of mineral calcite
28. (A) X is air as it has mass, it occupies space, it can be compressed and takes the shape of the container that holds it.
29. (B) Venus because it seems In addition to being known as the evening star, Venus was also called the morning star because it could be seen for a few hours before the Sun grew too bright. The planet actually becomes brightest before the Sun rises or just after sunset.
30. (B) $P \rightarrow S \rightarrow R \rightarrow Q$
31. (C) When there is a crack in the bone it is called a fracture
32. (B) Ginger reproduces by the stem buds. In the given figure. X, Y and Z are potato, turnip and onion respectively. Potato and onion reproduce in the same way as the ginger plant.
33. (B) $p - 3$; $q - 1$; $r - 2$
34. (A) Coal is used as an energy source.
35. (A) In the given relationship, the joint present in elbow is hinge joint and gliding joint is present in wrist bones.
36. (B) Heat stroke is the most serious form of heat injury and is considered a medical emergency. It can kill or cause damage to brain and other internal organs. It results from prolonged exposure to high temperatures usually in combination with dehydration which leads to failure of the body's temperature control system. In case of heat stroke, one should immediately rehydrate the person with a solution of salt, sugar and lime juice of an unripe mango. This will replenish salt and water that the person has lost through sweating.

37. (C) Designs suit local environmental conditions
Solution: Elevated bamboo structures prevent flood damage, showing adaptive architecture based on ecological understanding.
38. (B) Reflect most solar radiation away
Solution: Light colors reflect sunlight, reducing heat absorption. This lowers indoor temperatures naturally, reducing fan/AC usage.
39. (A) The skin contains extra fiber and vitamins
Solution: Fruit skins are rich in dietary fiber, vitamins, and antioxidants, which are often lost if the skin is removed.
40. (A) The skull of an adult human being contains 22 bones.
41. (B) The camel is called the ship of the desert.
42. (B) 1-iii; 2-iv; 3-ii; 4-i
Touching a hot pot - burns.
Electric shock is due to putting finger in an electric socket. Pushing each other while playing - wounds and injury. Using sharp knife - cuts.
43. (C) In the given sequence X represents the process of manuring.
44. (A) Seesaw and tweezers is correct because their lever relationship (first-third) is the same as scissors and tongs.
45. (B) Gravitational force is absent in space.
46. (A) Bryophyllum leaves have special buds on their margins that grow into new plantlets, allowing the plant to reproduce vegetatively.
47. (A) Oxygen gas is used up in the burning of things and in the process of respiration.
48. (B) Topsoil is like plant food. It helps plants grow big and strong. If we protect it, plants stay healthy and give us fruits, vegetables, and flowers.
49. (C) The fruit shown in the picture is guava and is rich in vitamin C.
50. (B) The main function of vitamin K is clotting of blood.

51. (A) They offer better airflow and skin comfort. Natural fibers like cotton and silk are breathable, absorb moisture, and cause less skin irritation compared to many synthetics.
52. (C) To stabilize in muddy tidal soil
Mangroves grow in soft, waterlogged coastal mud. Their exposed roots provide anchor-like support against tides and waves.
53. (B) Option B is correct because chewing breaks food and starts digestion, which is the main reason chewing is important. Options A and D describe secondary effects, not the primary purpose.
54. (C) Microorganisms from spoiled food
When investigating spoiled food under a microscope, students would see bacteria, yeast, or mold,
55. (D) An involuntary and immediate action in response to a stimulus is called reflex action. Reflex actions do not involve brain. They are controlled by spinal cord.

CRITICAL THINKING

56. (B) KGJQYFH
57. (C) $\text{pentagon} = 30$
 $2 \square = 50 - 30$
 $2 \square = 20$
 $\square = 10$
 $\text{circle} + 10 + 60 = 90$
 $\text{circle} = 90 - 70 = 20$
 $\square + \square + \text{circle} + \text{pentagon}$
 $= 10 + 10 + 20 + 30 = 70$



59. (B) 60. (C)