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NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION

CLASS - 5

Question Paper Code : 1P114

KEY

1. C	2. A	3. B	4. C	5. B	6. B	7. D	8. D	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. D	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

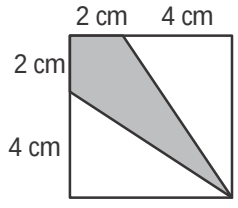
2...1 → remove 2

3...3 → keep

2...3 → remove 2

After removing 3 digits, we get 12332, a palindrome.

02. (A)

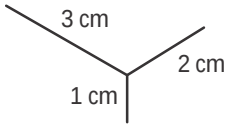


$$= \frac{1}{2} \times 4 \times 6 = \frac{24 \text{ cm}}{2} = 12 \text{ cm}$$

Area of square = 6^2 = 36

36 cm – 24 cm = 12 cm

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

03. (B) 

= (3 + 1 + 1 + 2) cm = 7 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

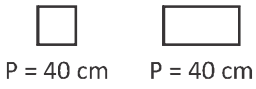
26 $\rightarrow$ 1 + 2 + 13 = 16

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. (B) 

Square 40 ÷ 4 = 10 cm

A = 100 cm

b of rectangle = 20 cm – 14 cm = 6 cm

A = 14 cm × 6 cm = 84 cm^2

Difference = 100 cm^2 – 84 cm^2 = 16 cm^2

07. (D) Rhombus has all sides equal, but only opposite angles are equal.

08. (D) Using combinations,

43 × 21 = 903, 42 × 31 = 1302, etc.

The best one is 84 × 36 = 3024

09. (C) 25% of 200 = 50 $\rightarrow$ 200 – 50 = Rs. 150

10. (B) Bala : total = 25 : 100 = 1 : 4

11. (D) 6 hours × 2°C = 12°C rise $\rightarrow$ 14 + 12 = 26°C.

12. (C) Total juice = 3.6 L = 3600 ml

Juice poured = 10 × 300 ml = 3000 ml

Juice left = 3600 – 3000 = 600 ml

= 0.6 L = 600 ml

13. (B) Difference in speed = 5 – 4 = 1 km/h

In 2 hours: 1 × 2 = 2 km apart

14. (C) Container B = 250 × 2 = 500 m*l*

Container C = 500 ÷ 2 = 250 m*l*

15. (C) Find HCF of 24 and 30 $\rightarrow$ 6 $\rightarrow$ number of baskets.

Each basket has:

Apples: 24 ÷ 6 = 4

Oranges: 30 ÷ 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 parts = 10 $\rightarrow$ 1 part = 2 cups

Sugar = 2 parts $\rightarrow$ 2 × 2 = 4 cups

18. (C) If all tables were rectangular (4 legs each), total legs would be:

50 × 4 = 200 legs

But we have 240 legs. So there are:

240 – 200 = 40 extra legs

Each hexagonal table has 6 legs, i.e., 2 more legs than a rectangular table.

So, the number of hexagonal tables is:

Extra legs ÷ 2 = 40 ÷ 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)

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

When length and breadth are doubled,

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

Then $P = 2(2l + 2b)$

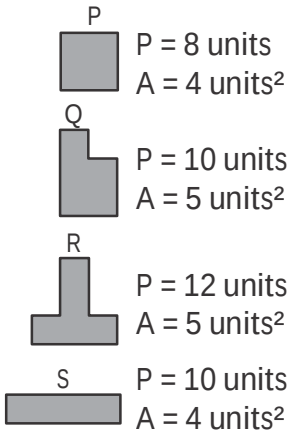
$= 2 \times [2(l + b)]$

$= 2 \times P$

i.e., perimeter is doubled.

23. (C) $\angle BOD$

24. (C)



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

$\therefore \frac{2}{5}$ 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→S→R→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 inujury 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. (D) Both are second-class levers, where the load is between the effort and the fulcrum.

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

Solution: 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

Solution: Mangroves grow in soft, waterlogged coastal mud. Their exposed roots provide anchor-like support against tides and waves.

53. (B) It breaks down food and begins digestion

Solution: Chewing breaks food into smaller pieces, allowing digestive enzymes in saliva to start breaking down carbohydrates more effectively.

54. (C) Microorganisms from spoiled food

Solution: When investigating spoiled food under a microscope, students would see bacteria, yeast, or mold,

55. (D) An involuntary and im mediate 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) ⬠ = 30

2□ = 50 – 30

2□ = 20

□ = 10

○ + 10 + 60 = 90

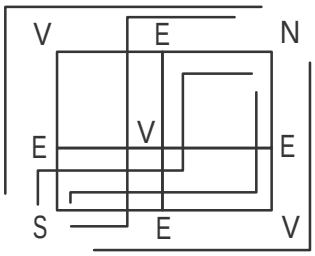
○ = 90 – 70 = 20

□ + □ + ○ + ⬠

= 10 + 10 + 20 + 30 = 70

58. (C) Six-legged and eight-legged octopuses always tell the truth. Seven-legged ones always lie. The green octopus says there are 27 legs total. If this is true, then the others are lying. That means green is truthful (6 or 8 legs), and the others are seven-legged liars. The total legs add up correctly only when green has 6 legs and the rest have 7 legs each.

So, the green octopus is telling the truth.



59. (B) 

60. (C)