



UNIFIED COUNCIL

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NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION

CLASS - 5

Question Paper Code : UN460

KEY

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

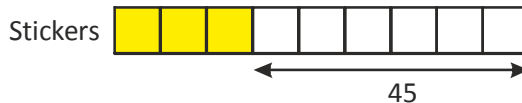
SOLUTIONS

MATHEMATICS

- 1: (C) Tree grows 8 cm \rightarrow 16 days
 For 1 cm $\rightarrow 16 \div 8$
 1 cm \rightarrow 2 days
 To grow 54 cm $\rightarrow 54 \times 2 = 108$ days
- 2: (B) Given HCF = 32, LCM = 960 and 1st no. = 40
 Product of 2 number = HCF \times LCM
 1st number \times 2nd number = HCF \times LCM
 2nd number = $\frac{\text{HCF} \times \text{LCM}}{40}$

$$= \frac{8 \cancel{32} \times 96 \cancel{0}}{4 \cancel{0}} = 768$$

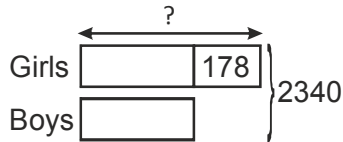
- 3: (B) $1744 - 637 = 1107$
 $1107 \div 3 = 369$
 Each brother got 369 game cards
- 4: (A) 1 unit $\rightarrow 45 \div 5 = 9$
 8 units $\rightarrow 8 \times 9 = 72$



- 5: (A) Number of breadths (3 cm) to be included in the perimeter = 8
 Number of lengths (7 cm) to be included in the perimeter = 10
 Area of 1 small rectangle = $3 \times 7 = 21 \text{ cm}^2$
 Total area = 12 small rectangles
 $= 12 \times 21 = 252 \text{ cm}^2$
- 6: (B) Total No. of marbles = 140
 Red + Blue + Green = 140
 No. of green marbles = 3 times red
 No. of blue marbles = 6 times red
 Red + 3 red + 6 Red
 $10 \text{ Red} = 140 \Rightarrow R = 140 \div 10 = 14$
 Green (G) = $3r = 3 \times 14 = 42$
 Blue (B) = $6r = 6 \times 14 = 84$
- 7: (D) $\frac{1}{4} + \frac{2}{3} = \frac{3}{12} + \frac{8}{12} = \frac{11}{12}$. The remaining $\frac{1}{12}$ of the stick is 2 cm
 $\frac{1}{12} = 2 \text{ cm} = 2 \times 12 = 24 \text{ cm}$
 Therefore, the entire stick is 24 cm long
- 8: (C) $2572.25 \times 3 = ₹ 7716.75$
- 9: (B) $19 \times 10 = 190$
 $450 - 190 = 260$
 $260 \div 20 = 13$
 13 rows with 20 seats each
- 10: (B) Four years ago. Tharun was 8. Six years ago, he was 6. The average of 8 and 6 is
 $\frac{8+6}{2} = \frac{14}{2} = 7$
- 11: (D) $100\% - 25\% = 75\%$
 $75\% \times 1200 = \frac{75}{100} \times 1200$
 $= 900$
- 12: (A) In a square ABCD 8 parts are unshaded of total 16 parts.
 In a square BEFC one part is unshaded of total 4 parts.
 \therefore Total unshaded part
 $= \frac{8}{16} + \frac{1}{4} = \frac{8}{16} + \frac{4}{16} = \frac{12}{16} = \frac{3}{4} = 0.75$

- 13: (D) 4 teacups + 2 teapots $\rightarrow ₹ 198$
 4 teacups + 5 teapots $\rightarrow ₹ 198$
 9 teacups $\rightarrow ₹ 198$
 1 teacup $\rightarrow ₹ 198 \div 9 = ₹ 22$
 5 teacups $\rightarrow ₹ 22 \times 5 = ₹ 110$
 2 teapots $\rightarrow ₹ 110$
 1 teapot $\rightarrow ₹ 110 \div 2 = ₹ 55$
- 14: (D) Option (A) : $40 + 14 \text{ ones} + 7 \text{ hundredths}$
 $= 40 + 14 + 0.07$
 $= 54.08 \text{ (True)}$
 Option (B) : 4.67
 $\begin{array}{r} 4.67 \\ | \\ 7 \text{ hundredths} = 0.07 \end{array}$
 $70 \text{ thousandths} = \frac{70}{1000}$
 $= 0.07$
 Thus, in 4.67 the digit '7' stands for 70 thousandths. (True)
 Option (C) : 3 ones = 3
 $30 \text{ tenths} = \frac{30}{10} = 3$
 Thus, 3 ones = 30 tenths. (True)
 Option (D) : $0.78 + 0.22 = 1$
 Thus, $0.78 + 0.22$ is greater than 0.99
 Option (D) is false
- 15: (C) $64262 \div 642 = 1001$
 $\therefore 100 + 901 = 1001$
- 16: (C) Distance cycled each day = $5.2 \div 5 = 1.04 \text{ km}$
 $1.04 \text{ km} = 1.04 \times 1000 = 1040 \text{ m}$
- 17: (B) Capacity of rectangular container
 $= 30 \times 18 \times 10$
 $= 5400 \text{ cm}^3$
 $= (5400 \div 1000) \text{ l}$
 $= 5.4 \text{ l}$
 Volume of water in rectangular container
 $= 5.4 \text{ l} \div 2 = 2.7 \text{ l}$

18: (B) 2 units $\rightarrow 2340 - 178 = 2162$



1 unit $\rightarrow 2162 \div 2 = 1081$ (Number of boys)

$1081 + 178 = 1259$

19: (C) Water boils at 100°C .

The temperature that is to be increased
 $= (100 - 38.5)^\circ\text{C} = 61.5^\circ\text{C}$

20: (D) Amount of yoghurt that vishal ate in a week

$= 250 \times 7 = 1750 \text{ ml}$

$1750 \text{ ml} = 1750 \div 1000 = 1.75 \text{ l}$

21: (A) $144 = 1 \times 144$ $1 + 144 = 145$

2×72 $2 + 72 = 74$

3×48 $3 + 48 = 51$

4×36 $4 + 36 = 40$

6×24 $6 + 24 = 30$

8×18 $8 + 18 = 26$

9×16 $9 + 16 = 25$

12×12 $12 + 12 = 24$

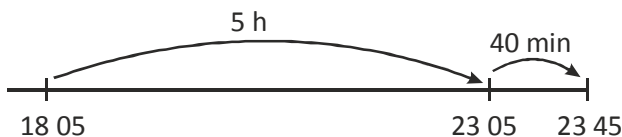
Summit's is 18 years old

22: (C) $4 \times 16 = 64 \text{ cm}^2$

$8 \times 8 = 64 \text{ cm}^2$

The length of the bigger square is 8 cm

23: (A) She finished typing the test paper at 23:45 i.e., 11:45 p.m.



24: (C) There are 2 pairs of perpendicular lines
 $CD \perp DE$, $EF \perp DE$

25: (C) $\frac{3}{5} \times 250 \text{ g} = 150 \text{ g}$

$5 \times 150 \text{ g} = 750 \text{ g}$

SCIENCE

26: (C) The first-aid given to the boy in the picture is for fracture.

27: (C) Option (C) is a chisel. Chisel is used to shape wood.

28: (A) Hinge joint is found at knee region.

29: (C) A rubber ball rolls across a level surface. The ball will eventually stop rolling due to friction.

30: (A) X - frog (skin); Y - whale (lungs); Z - fish (gills).

31: (C) For wounds, cuts, and scratches one should clean it with antiseptic lotion.

32: (D) Fruit A is dispersed by splitting/explosive action. It splits open to release its seeds after the fruit has dried up. Fruit B is dispersed by animals. The seeds found in its fleshy and sweet fruit are dispersed when animals eat the fruits and throw away the seeds or pass the seeds out in their droppings after eating both the fruit and seeds.

33: (A) A fishing pole or a fishing rod is an example of a lever.

34: (A) Cube 2 is heavier than 1, 3 & 4.

35: (C) Material 1 is iron, and material 2 is sugar.

36: (A) Deficiency of vitamin A causes night blindness, vitamin B causes Beri beri, vitamin C causes Scurvy and vitamin D causes rickets.

37: (D) Nutcracker : II class lever :: Axe : Wedge.

38: (C) In the spring and early summer, bears often scratch their backs against trees to remove winter fur. This is an example of an animal responding to its environment.

39: (D) A frog is an amphibian.

40: (D) An octopus squirts black ink around itself to hide from predators. This adaptation is an example of a defense mechanism.

41: (C) P is inclined plane; Q is lever; R is pulley.

42: (C) Recycling has a helpful effect on environment.

43. (C) Solids have definite shape and volume.
44. (D) At waterfalls rock particles are carried over by the water fall this occurs due to erosion and deposition.
45. (B) Most of the animals living in cold regions grow thick fur to provide warmth to the body.
46. (B) Coal is is formed from trees and other plants which died millions of years ago.
47. (B) This diagram shows a life cycle.
48. (C) The vessel in the wrist and neck directly connects to the heart; therefore we can feel the pumping from there.
49. (A) Planting grass prevent soil erosion on hills.
50. (B) A graduated cylinder is used to find the irregular shaped solids volume. Pour water into the graduated cylinder until it reaches a known level and the object is then put inside. Depending on how much the water rise after the object has been placed inside the cylinder the volume can then be calculated.
51. (D) Pumice rock is porous like a sponge.
52. (C) Fern plant has rows of little dots on the back of the leaves. They are not harmful. They hold millions of tiny reproductive cells called spores. They are helpful in reproduction.
53. (B) Tetanus is due to the entry of germs through cut skin.
54. (C) The deficiency of iodine in his body led to the disease named goitre.
55. (C) The ramp in the diagram is an example of inclined plane.

CRITICAL THINKING

56: (B) ₹ 1

Total coins are 2 (1 rupee coins) + 10 (50 paise coins) = 12 coins

12 coins are divided in to 4 children equal means $12/4 = 3$ (each child have 3 coins)

Minimum amount = Ps. 50 + Ps. 50 + Ps.50 = ₹ 1.50

Maximum amount = ₹ 1 + ₹ 1 + Ps. 50 = ₹ 2.50

Difference = ₹ 2.50 – ₹ 1.50 = ₹ 1

57: (D)



58: (A) Option A is the correct answer. Neethu is elder than Sandhya. Hence option C and D are ruled out. The difference between Neethu and Sandhya's birthday is less than 30 days. So Option B is ruled out too.

59: (C) From statements I and II, water means 'na'

From statements II and IV, life means 'jo'
Hence, 'is' means tod

60: (A) The blue and red colours are interchanged in figure 4.