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NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION - UN401 (UPDATED)

Solutions for Class: 3

Mathematics

1. **(D)** The required missing number is 168 + 49 = **217**.

2. **(A)** No. of balloons in each packet = 4
No. of packets = 25
∴ No. of balloons bought = **25 × 4 = 100**

3. **(C)** On day-2, Krishna worked for 5 hours.
Amount he earns in an hour = ` 60
∴ His income on day-2
= 5 × ` 60 = ` **300**

4. **(B)** Cost of 3 oranges = 2 × cost of 3 apples
3 oranges cost ` (36 × 2) = ` 72
9 oranges cost ` (72 × 3) = ` **216**

5. **(B)** Time when it is actually 3 p.m. is 3 – 0.33 = 2.27 p.m. as in **option (B)**.

6. **(B)** **10** × 100 = **1000**

7. **(C)** Distance between two flag posts = 7 m
Distance between 2nd and 16th flag posts = (No. of flag posts between 2nd and 16th flag posts + 1) × Distance between two flag posts
= (13 + 1) × 7 m = 14 × 7 m = **98 m**

8. **(A)** Nine thousand and ninety nine

Th	H	T	O
9	0	9	9

9. **(D)** 7 △6△ 4 × 8 = △6△ 112 ; △ × △ = 6 × 6 = **36**

10. **(D)** The circle in **option (D)** is divided into 3 equal parts, one of which is shaded.

11. **(B)** The required number sentence is **56 ÷ 4.**

12. **(A)** 60 seconds = 1 minute
125 seconds = 125 ÷ 60
= 2 minutes 5 seconds

13. **(D)** **a** = 6500 – (2685 + 3100) = **715**
b = 6500 – (2685 + 2973) = **842**
c = 6500 – (2973 + 3100) = **427**

14. **(D)** 3 × 9 = 27
6 × 9 = 54
9 × 9 = 81
So, the cost of one tennis ball
= 1 × 9 = ` **9**

15. **(B)** The given numbers are greater than 100 and also less than 1000. So, **they are between 100 and 1000**.

16. **(D)** Capacity of the mug = 1000 ml ÷ 5 = **200 ml**

17. **(A)** The required term is
(3 × 5) × 2 = **30**.
(Since, 24 = (4 × 3) × 2 and 16 = (4 × 2) × 2.)

18. **(B)** He has to buy a pen and a scale only.
Otherwise, it is not possible to buy 2 items for ` 20.
∴ The money left with him after buying the pen and the scale
= ` 20 – (` 12 + ` 3)
= ` (20 – 15) = ` **5**

19. **(C)** 17 + 17 = 34
So, the missing number is
26 + 17 = 43 = 77 – 34.

20. **(B)** In $\frac{4}{12}$ the denominator is 12 which is thrice the numerator 4, and the sum of the numerator and denominator is 4 + 12 = 16.

21. **(C)** The objects in the given figures according to the increasing order of their weights are

So, is the heaviest fruit.

22. **(C)** Time taken for shopping = 3 h 28 min
Time taken for doing his homework
= 4 h 56 min
∴ Total time spent for the two activities =

	h	min
	3	28
+	4	56
	7	84

84 min = (60 + 24) min

= 1 h 24 min

$\therefore$ 7 h 84 min = (7 + 1) h 24 min

= 8 h 24 min

23. **(B)** Total number of stamps = 109

5 pupils shared 45 stamps.

$\therefore$ Remaining number of stamps

= 109 – 45 = 64

No. of pupils who had 8 stamps each

= 64 ÷ 8 = 8

$\therefore$ Total number of pupils = 5 + 8 = **13**

24. **(A)** Given $A = \frac{2}{23}$, $B = \frac{11}{23}$,

$C = \frac{5}{23}$ and $D = \frac{3}{23}$.

$$A + B = \frac{2}{23} + \frac{11}{23} = \frac{2+11}{23} = \frac{13}{23}$$

$$C + D = \frac{5}{23} + \frac{3}{23} = \frac{5+3}{23} = \frac{8}{23}$$

$$\therefore (A + B) - (C + D) = \frac{13}{23} - \frac{8}{23} = \mathbf{\frac{5}{23}}$$

25. **(C)** Each mark on the number line has numbers that differ by 5.

So, the number that replaces the question mark is 825 + 5 = **830.**

26. **(C)** Total number of students in each section = 21 + 18 = 39

Number of sections = 5

$\therefore$ The required number of students

= 39 × 5 = **195**

27. **(B)** $2 \times 36 \times 3 = 12 \times 1 \times 18 = 9 \times \boxed{6} \times 4$. So, the missing number is **6**.

28. **(C)** The smallest 3 - digit number is 100 = **1 hundreds + 0 tens + 0 ones**

29. **(A)** $\frac{5 \times 2}{6 \times 2} = \mathbf{\frac{10}{12}}$; $\frac{5 \times 3}{6 \times 3} = \mathbf{\frac{15}{18}}$;

$\frac{5 \times 4}{6 \times 4} = \mathbf{\frac{20}{24}}$ and $\frac{5 \times 5}{6 \times 5} = \mathbf{\frac{25}{30}}$.

30. **(A)** The cost of 3 ice-creams

= ` 30

$\therefore$ The cost of an ice-cream

= ` 30 ÷ 3 = ` 10

The cost of a cherry

= ` (28 – 2 × 10) = ` 8

The cost of a banana

$$\frac{` (18-8)}{2} = \frac{10}{2} = ` \mathbf{5}$$

31. **(B)** AB = CD (Since, opposite sides in a rectangle are equal.)

$\therefore$ CD = 2 m

= 2 × 100 cm [Since 1m = 100 cm.]

= **200 cm**

32. **(A)** The numbers between 1 and 100 having a zero are 10, 20, 30, 40, 50, 60, 70, 80 and 90.

So '0' appears **9 times**.

Note: 0's of the number 100 are not included.

33. **(B)** $P = \frac{4}{12}, Q = \frac{2}{12}, R = \frac{5}{12}, S = \frac{1}{12}$;

$$\mathbf{P + R} = \frac{4}{12} + \frac{5}{12} = \frac{9}{12} = \mathbf{\frac{3}{4}}$$

34. **(A)** Age of Chitra = 15 years 4 months

Age of her sister is 4 years 10 months lesser than that of Chitra

= 15 years 4 months – 4 years 10 months

= 10 years 6 months

35. **(B)** Amount Radhika needs to buy the videogame is ` 205 – ` 147 = ` **58**

36. **(A)** Total no. of parts in the figure = 18

$$\frac{2}{3} \overset{\times 6}{=} \frac{\boxed{12}}{18}$$

3 out of 12 parts are already shaded. So, the number of parts to be shaded

= 12 – 3 = **9.**

37. **(C)** The number of copies of newspaper sold in a week = 938

The number of copies of newspaper sold in a day = 938 ÷ 7 = **134**

38. **(A)** Cost of each adult ticket = ` 10

Cost of each child ticket = ` 4

$\therefore$ Total cost of tickets for 4 adults and 3 children

= ` (4 × 10 + 3 × 4)

= ` (40 + 12)

= ` **52**

39. **(D)**

H	T	O
3	2	4

If he chooses the digit 2, he should occupy the **20th** place.

40. **(A)** 2 → 1

1 → 2

2 and 4 → 2

General Science

41. **(C)** Having an outer covering of soft body is not a characteristic feature of living things. The characteristic features of living things are :

Living thing move, need food, grow, breathe in and out, feel, reproduce, grow old and die.

42. **(A)** On heating, water boils to form steam or water vapour. Steam on cooling condenses to form water. Water on cooling changes to ice. By the absorption of heat ice melts to form water.

43. **(C)** Fern is a green plant that can make its own food but yeast, mould and mushroom are non-green plants that cannot synthesise their food.

44. **(A)** A horse is kept in a stable.

45. **(B)** Snake, Chameleon and frogs swallow their food without chewing.

46. **(D)** The arrows show the path of food.

47. **(D)** The graph shows the increase of plant's height. This shows that living things grow and show increase in height.

48. **(C)** Frog is an amphibian. Amphibians live both on land and in water.

49. **(D)** Potato is a stem tuber and radish is a tuberous root.

50. **(B)** Thermometer is used to measure the temperature. The temperature tells us how hot or cold a body is.

51. **(D)** It is safe to fly kites in an open play ground.

52. **(A)** Birds are the only organisms that are covered with feathers and have beaks.

53. **(B)** The height of the coconut tree is 12 feet as its shadow is double its height i.e., 24 feet.

54. **(C)** The given organ is a kidney. It is a part of the excretory system.

55. **(B)** Water vapour and steam are in the gaseous state of matter.

56. **(C)** Top soil contains humus. Humus is formed from dead and decay of remnants of plants and animals.

57. **(B)** Earthworm is a living part in a forest.

58. **(C)** The chlorophyll pigment of a leaf absorbs sunlight to help in synthesising of food.

59. **(C)** Rat eats its food by cutting it into tiny bits. Such kind of teeth are called gnawing teeth.

60. **(D)** A snake is a carnivore.

61. **(C)** Waste water from kitchen can be used for watering plants.

62. **(D)** 10 + 10 + 5 + 5 + 1 + 1 = 32 grams.

63. **(A)** A ripe mango is an edible fruit. So, it is placed in P.

64. **(B)** Skin and eyes are the sense organs that are used to choose the cloth required.

65. **(D)** Nostril - Respiratory system.

Heart - Circulatory system.

66. **(B)** An ostrich is a fast running flightless bird.

67. **(A)** A ceramic cup is made from clay. Clay is a non-living thing that is never alive.

68. **(C)** Eagles, vulture and owls kill small animals. They have strong, sharp hooked beaks for tearing up the flesh.

69. **(C)** The sun rises first in places in the east.

70. **(D)** A chilli is the fruit of a plant which contains seeds while the turnip is the root of a plant that stores food.

71. **(B)** The moon reflects sunlight at night.

72. **(D)** The tail of a bird helps it to change the direction. It acts like a rudder of the boat.

73. **(C)** Animals that eat both plants and animals are called omnivores. Bear is an omnivore.

74. **(C)** The diagram in the given figure shown is that of a digestive system.

75. **(D)** A bat is a living thing as it needs to eat.