## NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION - 2015  (UPDATED)

### Paper Code: UN412

### Solutions for Class : 3

### Mathematics

1. **(D)** 1500, 1502, 1504, 1506, 1508, 1510

   $\underbrace{\qquad\qquad\qquad\qquad}_{4}$

   ∴ There are **4 even numbers** between 1500 and 1510.

2. **(C)** $9 \times 9 = 81$ ; $8 \times 8 = 64$; $9 \times 8 = \mathbf{72}$

   🐷 → 9,  🐘 → 8
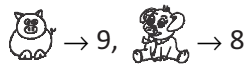
3. **(D)** The product of the digits in the year

   $= 2 \times 0 \times 1 \times 5$

   $= \mathbf{0}$

4. **(C)**
   $$\begin{array}{r} 5468 \\ -2113 \\ \hline 3\,\textcircled{3}55 \\ \hline \end{array}$$

5. **(C)** Option (A): $56 \div 7 = 8$;

   Option (B): $36 \div 6 = 6$

   Option (C): $81 \div 9 = 9$

   Option (D): $35 \div 5 = 7$

6. **(B)** $652 \div 2 = 326$

7. **(A)** $10 \times 50 = ₹\,5$

   $10 \times 20 = ₹\,2$

   $₹\,5 + ₹\,2 = ₹\,7 = \mathbf{7\ one\ rupee\ coins}$

8. **(D)**

   🐦 + 🐦 + 🪺 + 🪺 = ☁

   = 🐦 + 🪺 + ☁

9. **(B)**  $\dfrac{2}{3} = \dfrac{6}{9}$ ; $6 - 2 = \mathbf{4\ parts}$

10. **(B)** The greatest even number formed by the digits 5, 3, 2 and 1 is **5312**.

11. **(A)** $A + B + B + 4\,g = 24\,g$

    $A + B + B = 24 - 4 = 20\,g$

    $A = B + B$

    $B + B = 20 \div 2 = 10\,g$

    ∴ The mass of B is **10 g** $\div$ 2 = **5 g**

12. **(B)** $\dfrac{3}{4} = \dfrac{6}{8} = \dfrac{9}{12} = \dfrac{12}{16}$

13. **(B)**
    $$\begin{array}{r} {}^{1}5\,{}^{1}9\,{}^{1}8\,4 \\ +1\,2\,5\,0 \\ \hline 7\,2\,3\,4 \\ \hline \end{array} \qquad \begin{array}{r} {}^{6}\!\!\not7\,{}^{11}\!\!\not2\,{}^{12}\!\!\not3\,{}^{1}4 \\ -2\,6\,3\,5 \\ \hline 4\,5\,9\,9 \\ \hline \end{array}$$

14. **(D)** Given 4-digit number is A578.

    $5 + 7 + 8 = 20$ and

    $A + 5 + 7 = 20$

    $\Rightarrow A = 20 - 12 = 8$

    ∴ The value of A is **8.**

15. **(D)** $3 \times 28 = 84$ ; $100 - 84 = \mathbf{16\ books}$

16. **(C)** $₹\,1.60 - 4 \times 10 = ₹\,1.20$

    $120 \div 20 = 6$

    ∴ There are **6 twenty paise coins**.

17. **(A)** 20 tens = 200

    Second smallest 4-digit even number

= 1002

1002 + 200 = 1202

The number is 1202.

**18. (A)** The given clock shows **1: 45** (i.e.,) **15 minutes to 2**.

**19. (D)** 32 ÷ 4 = **8**

**20. (C)** Option (A): $\dfrac{1}{4} = \dfrac{2}{8}$, Option (B): $\dfrac{1}{8}$

Option (C): $\dfrac{3}{4} = \dfrac{6}{8}$, Option (D): $\dfrac{1}{2} = \dfrac{4}{8}$

∴ $\dfrac{3}{4}$ is greater than $\dfrac{5}{8}$.

**21. (B)** ₹ 100 − ₹ 20 = ₹ 80

₹ 80 ÷ ₹ 20 = 4

3 × 4 = **12**

**22. (A)** 200 cm − 105 cm = **95 cm**

**23. (A)** Smallest 4-digit even number → 1000

Sum of digits = 1 + 0 + 0 + 0 = **1**

**24. (C)** Madan → $\dfrac{1}{2}$

Arun → $\dfrac{1}{2} ÷ 2 = \dfrac{2}{4} ÷ 2 = \dfrac{1}{4}$

Hari → $\dfrac{1}{4} ÷ 2 = \dfrac{2}{8} ÷ 2 = \dfrac{1}{8}$

$1 - \dfrac{1}{2} - \dfrac{1}{4} - \dfrac{1}{8} = \dfrac{8}{8} - \dfrac{4}{8} - \dfrac{2}{8} - \dfrac{1}{8} = \dfrac{1}{8}$
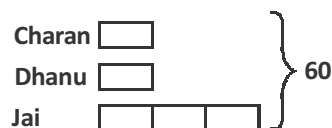
$\dfrac{1}{8}$ of the pizza was left.

**25. (A)** 83 × 9 = 747 ; 747 + 1 = **748**

**26. (B)** 50 + 25 = **75**

**27. (D)** 7 × 8 = 56 ; 4 × 6 = 24 ; **56 + 24 = 80**

**28. (B)** 3666 = 3000 + 600 + 60 + 6

**29. (D)**

Charan ▭
Dhanu ▭▭
Jai ▭▭▭▭  } 60

**30. (A)** 7 × 4 = 28 ; 28 − 12 = 16

**Option (A) : 4 + 4 + 4 + 4 = 16**

Option (B) : 12 − 7 − 4 = 1

Option (C): 12 × 3 = 36

Option (D): 3 × 4 = 12

**31. (A)** 4630 ÷ 2 = 2315

4630 ÷ 5 = 926

∴ The missing digit is **0**.

**32. (B)** 2015 is a non-leap year.

Hence it has **365** days.

**33. (C)**

$$\begin{array}{r} {}^{1}\!2\,{}^{13}\!4\,{}^{1}\!0\ 9 \\ -1\ 7\ 1\ 2 \\ \hline 6\ 9\ 7 \end{array}\qquad \begin{array}{r} {}^{5}\!6\,{}^{1}\!2\ 9\ 8 \\ -\ 6\ 9\ 7 \\ \hline 5\ 6\ 0\ 1 \end{array}$$

**34. (B)** 3539 g + 1563 g = 5102 g = **5 kg 102 g**

**35. (D)** Option (A): 2 fifty paise and 5 ten paise coins = ₹ 1.50

Option (B): 1 one rupee and 25 five paise coins = ₹ 2.25

Option (C): 3 fifty paise and 4 twenty paise coins = ₹ 2.30

Option (D) : 5 twenty paise and 10 ten paise coins = ₹ 2.00

**36. (B)** 8 × 4 = 32

Option (A): 8 + 4 = 12

**Option (B): 8 + 8 + 8 + 8 = 32**

Option (C): 8 − 4 = 4

Option (D): 8 × 8 × 8 × 8 = 4096

**37. (D)** There are 4 quarters in one whole.

∴ No. of quarters in 5 wholes = 5 × 4 = **20**

**38. (B)** There will be **19 pieces** of rope.

**39. (B)** 146 ÷ 6 = 24, Remainder = 2

∴ Number of marbles left is **2**.

**40. (C)** 3000 − 30 = 2970

# General Science

41. **(B)** Dandelion plant labelled as (ii) produces its own food.

42. **(B)** A cow that eats grass is a herbivore.

43. **(C)** Water is in liquid state. Liquids take up space and cannot be compressed.

44. **(D)** The given feet are like webbed feet. Webbed feet are found in aquatic animals used for swimming.

45. **(B)** A mango tree is classified as a plant because it can make food and has roots to absorb water.

46. **(A)** All living organisms need air to live. Air contains oxygen. Oxygen is essential for life for the oxidation of food and to get energy.

47. **(A)** The initial level of water in first beaker is 20 $l$. The level of the water in the second beaker is increased to 35 $l$ when an object is immersed in it. The increase in level of water is 35-20 = 15 $l$.

48. **(A)** The object with greater mass and from greater height when dropped create the deepest depression in the sand.

49. **(A)** The given plant and its shadow shows morning time.

50. **(C)** A paper is a man made material from a natural source.

51. **(B)** Flowers produce fruits and seeds.

52. **(D)** When a glass of hot milk placed in a container of cold water, the temperature of the cold water rises as it gains heat from the hot milk and the temperature of the hot milk is decreased as it loses heat.

53. **(A)** Dustparticles are trapped by the hair and mucus of the nostrils.

54. **(B)** The water in the pot will turn into a gas when it is left over the compfire.

55. **(B)** Air that is breathed is the non-living part in the habitat of a blue bird.

56. **(A)** The teeth of carnivores are pointed to tear the flesh of animal.

57. **(C)** The bird in option C is a water bird. The bird uses its beak to scoop up small fish for food.

58. **(C)** Melting of ice into water is a change in the state of matter.

59. **(C)** The figure in option C shows that the earth revolves around the sun as the moon revolves around the earth.

60. **(D)** All the living organisms like plants, animals need oxygen to live.

61. **(C)** The next phase inthe given sequence is a full moon.

62. **(B)** In the given diagram the gas X is carbon dioxide and Y is oxygen.

63. **(A)** The source of energy for the watercycle is the sunlight 'P'.

64. **(B)** Blood vessels in the circulatory system function as the roads and it helps to transport the energy to all parts of the body.

65. **(A)** A fish breathe by gills.

66. **(A)** Plant (i) is touch me not and (ii) is insectivorous plant sundew are sensitive to touch.

67. **(A)** The sign at option A ensure the safety of pedestrians and children crossing streets at school zone.

68. **(D)** A bat is a mammal. Its body is covered by hairs.

69. **(C)** The sequence of the formation of chick from egg is as follows $C \rightarrow B \rightarrow A$

70. **(A)** Hibiscus plant is a food producer and a frog is a food consumer.

71. **(C)** A system is something that is made out of two parts or more that work together to carry out a certain function. Natural systems are systems that occur naturally and are not created by mankind. Transportation system is not a natural system as it is created by human.

72. **(A)** Gas particles are in random arrangement and far apart. They are able to move freely in a container. Solids particles are closely arranged and tightly packed and liquid particles are loosely arranged.

73. **(C)** Living things need air to live. Human breathe through their lungs.

74. **(B)** Food that is synthesised in green plants is carried to all the tip of stem to the roots and root hairs.

75. **(A)** Tiger has stripes on its body that help it to hide it self from its prey and to protect themselves.

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