



NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION

CLASS - 5
Question Paper Code : 1B107

KEY

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

SOLUTIONS

MATHEMATICS

01. (B) VC is not a valid roman numeral because smaller numeral (V) cannot be subtracted from larger non-standard bases like C (100).
02. (D) In 7653231, 5 is in the ten thousands place and hence has the greatest value

TL	L	T.Th	Th	H	T	O
		8	0	5	0	3
			5	0	9	8
	1	4	6	8	5	7
7	6	5	3	2	3	1

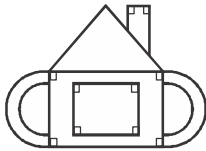
03. (A) The least result is from (A) $543217 \div 181072$, which is 3.
04. (B) The product of the digit is 0 because the number must have atleast one zero for the sum to be 4 in a 5 digit number.
05. (B) The required difference =

$$\begin{array}{r}
 9999999 \\
 - 10000 \\
 \hline
 9989999
 \end{array}$$

06. (D)
- (A) Prime numbers have exactly two factors, which are 1 and the number itself. This is true.
- (B) 1 is a factor of every prime number. This is true because every prime number is divisible by 1 and itself.
- (C) No prime numbers end in zero. This is true because any number ending in 0 is divisible by 2 and 5 (and possibly others), hence cannot be prime unless it is 2.
- (D) All prime numbers are odd numbers. This is false because the only even prime number is 2. All other prime numbers greater than 2 are odd.
07. (C) The HCF of 15 and 25 is determined by finding their common factors: Factors of 15: 1, 3, 5, 15 Factors of 25: 1, 5, 25 The only common factor is 5, so the HCF of 15 and 25 is 5.
- Among the given options, Option C) 35 and 45 is the pair where the HCF is also 5, which matches the HCF of 15 and 25.
08. (C) Simplest form of $\frac{9}{12} = \frac{3}{4}$
09. (D) $0.6 \times 0.006 \times 9 = 0.0324$
10. (C) Convert all lengths to the same unit for comparison.
- 420 cm = 4.2 meters
 - 0.4 kilometers = 400 meters
 - 4,000 millimeters = 4 meters
- Arranging in meters:
- 4.2 meters
 - 4 meters
 - 400 meters
 - 4.2 meters
- The longest length is 0.4 kilometers (400 meters)
11. (A) Length of line segment drawn by Manish = 51 cm = 510 mm
- Length of line segment erased = $\frac{3}{5} = 306$ mm
- ∴ Length of remaining line segment = (510 – 306) mm = 204 mm
12. (B) Original Total Sum = 72 (from Question 1)
- New Total Sum after increasing one number by 6 = $72 + 6 = 78$
- New Average = New Total Sum / Number of Values = $\frac{78}{6} = 13$
13. (A) $7 \times 3 \times 4 = 84$ cubic units
14. (A) Temperature before decrease = 34°C
- Decrease = 5°C
 - Temperature after 3 hours = 34°C – 5°C = 29°C
15. (C) Only statement (C) is correct
- Since figure X is smaller than figure Y
16. (B) 1 day = 24 hours
- 15 days = $15 \times 24 = 360$ hours
- 1 hour = 60 minutes, so 360 hours = $360 \times 60 = 21,600$ minutes
17. (C) L = 8 m
- (L × b) = 16 m²
- $b = \frac{16 \text{ m}^2}{8 \text{ m}} = 2 \text{ m}$
18. (C) Since the total cost of 12 pens equals the total selling price of 8 pens, the selling price per pen must be higher than the cost price per pen, leading to a profit.
19. (C) $90\% = \frac{90}{100} = \frac{9}{10}$
20. (B) Rs. 100 = Rs. 60 + Rs. 40 = Rs. 5 × 12 + Rs. 10 × 4
- 12 + 4 = 16 notes
- Hence, the number of Rs. 10 notes is 4
21. (A) $5\frac{5}{6} + 7\frac{5}{12} = \frac{159}{12} + \frac{8}{1} = 106$
22. (C) $5.2 = 4 + 0.4 + 0.4 + 0.4$

23. (C) First, calculate the speed
- $$\text{Speed} = \frac{300 \text{ km}}{4 \text{ h}} = 75 \text{ km/h}$$
- Now, calculate the distance for 6 hours
- $$\text{Distance} = \text{Speed} \times \text{Time}$$
- $$= 75 \text{ km/h} \times 6 \text{ h} = 450 \text{ km}$$

24. (B)



Hence, there are 10 right angles in the given figure.

25. (A) $200 \text{ ml} - 500 \text{ ml} = 1500 \text{ ml}$
 $= 1.5 \text{ litres}$

GENERAL SCIENCE

26. (C) In the given food chain caterpillar is a herbivore, it feeds on leaves. So, 'X' is a leaf.
27. (D) Wooden chopsticks and paper plates and paper cups are biodegradable.
28. (D) A shark, tadpole and a stingray (fish) breathe in dissolved oxygen in water with their gills. Dolphin takes in from air, oxygen through to low holes
29. (B) Pumice is igneous rock that forms during explosive volcanic eruptions.
30. (B) The given figure shows ball and socket joint.
31. (C) All living things need air, water and food to stay alive and grow healthy. Garden soil is fertile. It contains a lot of minerals for healthy growth of plants, it is well aerated (has quite a lot of air). Fertilizers are required only when the soil does not contain enough minerals for healthy growth of plants.
32. (D) An ocean is composed of salt water. By evaporating salt water, salt is obtained.
33. (D) The tree blocks sunlight, absorbs water and minerals from the soil and makes it less available to the plants growing under it. This limits the growth of the small plant.
34. (D) A salmon has gills in a chamber filled with water.
 A whale (sea mammal) has a blowhole (nostril) on top of its head.
 A tadpole has gills to breathe without a gill chamber.
35. (C) Seeds need air (Oxygen), water and warmth (right temperature) for germination.
 Sunlight is needed only after leaves have developed.
36. (D) Earthworms do not feed on the green leaves of crops. They speed up the decomposition of fallen leaves. When the leaves decompose in the soil, the soil becomes fertile. Their castings also make the soil fertile. They help to loosen and aerate the soil too.
37. (A) A skull is made up of bones which are fused firmly to protect the brain.
38. (C) Saprophytes feed on dead and decaying matter.
39. (D) The symbol shown in option D is related to a hospital.
40. (C) Shortage of water and food leads to famine.
41. (C) Water plants provide oxygen, food and shelter.
42. (A) The skeletal system gives support and allows body movement.
43. (C) The picture of insects at option C shows the correct outline of an insect.
44. (A) Incisors are cutting or biting teeth.
45. (B) A seesaw is a class 1 lever.
46. (B) Seeds of beans are dispersed by explosion.

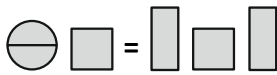
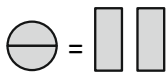
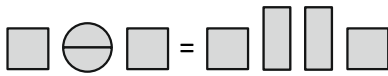
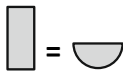
47. (D) The spoon gains heat when it is placed in boiling water.
48. (A) The lever, inclined plane pulley screw, wheel and axle are simple machines.
49. (C) Camel stores fat in its hump.
50. (D) Heart pumps blood to all parts of the body. It works all the time and is protected by ribcage.
51. (B) Cockroach pass through three stage life cycle egg → nymph → adult
52. (A) During burning and respiration carbondioxide is released.
53. (C) Green plants can make their food, hence they are called autotrophs.
54. (C) Potato is a stem tuber.
55. (A) The sand get heated up quickly. This causes the rise of temperature.

CRITICAL THINKING

56. (C) 15 un-promoted females & none are above 30 years of age.

Simply putting all given information into the table structure, we get the answer.

	Promotion		No promotion	
	Below 30	Above 30	Below 30	Above 30
Female	3	12	15	0
Male	8	7	20	5

57. (B)  $\text{Circle with line} = \text{Square} = \text{Tall Rect} + \text{Med Rect} + \text{Short Rect}$
-  $\text{Circle with line} = \text{Tall Rect} + \text{Med Rect}$ (c)
-  $\text{Square} + \text{Circle with line} + \text{Square} = \text{Square} + \text{Tall Rect} + \text{Med Rect} + \text{Square}$ (d)
-  $\text{Tall Rect} = \text{Semi Circle}$ (e)

58. (D) From the given data,
1 rabbit is going towards river not the six elephants. And these 6 elephants saw 2 monkeys are going towards river. Each monkey is holding 1 tortoise.

Hence, number of animals going towards river are 1 rabbit, 2 monkeys and 2 tortoise
 $= 1 + 2 + 2$
 $= 5$

59. (C) There are 3 numbers between 1 and 5. The conditions satisfies on option (C) only.

60. (D) There are 5 such expressions:

$$99 + (9 / 9) = 100$$

$$(99 / 0.99) = 100$$

$$(9 / 0.9) \times (9 / 0.9) = 100$$

$$((9 \times 9) + 9) / 0.9 = 100$$

$$(99 - 9) / 0.9 = 100$$

The End
