



## NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION

**CLASS - 5**

**Question Paper Code : UN494**

### KEY

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

### SOLUTIONS

#### MATHEMATICS

01. (B) All of the numbers start with 0.1, but after that option (B) has the biggest number 9. So 0.19 is the largest choices given.

02. (C) Height of A =  $\frac{4}{3} \times 1.2 \text{ m} = 1.6 \text{ m}$

03. (A) At 5:20 pm the two clock hands are close to each other, forming an acute angle, while at the other times they are either far a part or opposite to each other.

04. (B)  $1.25 \text{ l} = 1250 \text{ cm}^3$  which is the greatest

05. (D)  $90\% = \frac{90}{100} = \frac{9}{10}$

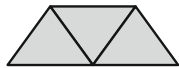
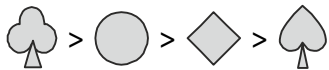
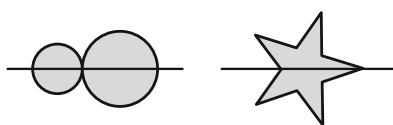
06. (C) Prime numbers from 23 to 43 are,  
23, 29, 31, 37, 41, 43

J K L M

∴ L is equivalent to 37.

07. (B)  $X = 5$  and  $Y = 7$

$$\begin{array}{r}
 5 \ 6 \ 8 \ 0 \ 9 \\
 - \ 4 \ 3 \ 5 \ 4 \ 5 \\
 \hline
 1 \ 3 \ 2 \ 6 \ 4 \\
 - \quad 8 \ 9 \ 7 \ 8 \\
 \hline
 4 \ 2 \ 8 \ 6
 \end{array}$$

08. (D) Perimeter of  $P = 2(6 + 4) = 20$  m  
 Perimeter of  $Q = 2(8 + 6) = 28$  m  
 Perimeter of  $R = 4(7) = 28$  m  
 Perimeter of  $S = 4(6) = 24$  m  
 $\therefore$  Q and R have the largest perimeter
09. (D) Parallel lines run alongside each other with out ever meeting. This means they are always the same distance a part from start to end.
10. (A) Flower part = 10  
 $L \times b = 10$   
 Length of flower part = 5  
 Area of flower part = 10 m  
 $LB = 10$  m  
 $L \times 2 = 10$  m  
 $L = 5$  m = AF  
 $BC = AF - DC = 5 - 3 = 2$  cm  
 Area of ABDF = 30 m  
 $L \times B = 30$  m  
 $5 \times (2 \times BG) = 30$  m  
 $(2^m + BG) = 6$  m  
 $BG = 4$  m  
 Area of Vegetables =  $4 \times 2 = 8$  m<sup>2</sup>
11. (B) Distance for the first hour =  $60 \text{ km/h} \times 1 \text{ hour} = 60$  km. Distance for the next 2 hours =  $80 \text{ km/h} \times 2 \text{ hours} = 160$  km. Total distance =  $60 \text{ km} + 160 \text{ km} = 220$  km.
12. (A) From noon to 5 p.m. is 5 hours. Temperature drop in 5 hours =  $3^\circ\text{C} \times 5 = 15^\circ\text{C}$ . So, the temperature at 5 p.m. =  $25^\circ\text{C} - 15^\circ\text{C} = 10^\circ\text{C}$
13. (A) From 1 to 2 on the clock is one hour, which is represented by 15 minutes for the hour hand. Therefore, from 10 to 12 is two hours, so for the hour hand it would be  $2 \times 15$  minutes = 30 minutes.
14. (D) Loss from first book = ₹ 5. To get an overall profit of ₹ 10 after accounting for the ₹ 5 loss, she needs to make a profit of ₹ 15 on the second book. Therefore, she should sell the second book for ₹ 15 (cost price) + ₹ 15 (profit) = ₹ 30.
15. (C) Simple Interest =  $(\text{Principal} \times \text{Rate} \times \text{Time}) / 100 = (\text{₹ } 200 \times 6\% \times 2 \text{ years}) / 100 = \text{₹ } 24$ .
16. (A) Bottle A =  $2 \times$  Bottle B =  $2 \times 500$  milliliters = 1,000 milliliters. Bottle C =  $3 \times$  Bottle A =  $3 \times 1,000$  milliliters = 3,000 milliliters. Total capacity = Bottle A + Bottle B + Bottle C =  $1,000 + 500 + 3,000 = 4,500$  milliliters.
17. (C) A number has exactly 3 factors if it's a square of a prime number. Among the given options, 9 (which is  $3^2$ ) has exactly 3 factors: 1, 3, and 9.
18. (B) Option (A) :  $100 \text{ g} < 2000 \text{ g}$  (✗)  
 Option (B) : 9000 milligrams = 9 gms (✓)  
 Option (C) :  $900 \text{ gms} < 1 \text{ kilogram}$  (✗)  
 Option (D) : 9 milligrams < 9 grams (✗)
19. (C) 540 is a multiple of 60, is between 400 and 600 and is 40 away from a multiple of 100 (as its 40 away from 500).
20. (D) 
21. (A) Option (A) is wrong  

22. (D) 0 to 1 is 6 units, so  $\frac{1}{6}$  is between Z & W  

23. (A) (ii) (iv)
24. (B)  $75.5 \times 2 = 151$   
 Sowmya can make 2 shelves per piece of wood with some wastage.  $6 \div 2 = 3$

25. (D) Number of 1 cm cubes needed along the length of the 2 cm cube  
 $= 2 \div 1 = 2$   
 Number of 1 cm cubes needed along the breadth of the 2 cm cube  $= 2 \div 1 = 2$   
 Number of 1 cm cubes needed along the height of the 2 cm cube  $= 2 \div 1 = 2$   
 Number of 1 cm cubes needed  $= 2 \times 2 \times 2 = 8$

### GENERAL SCIENCE

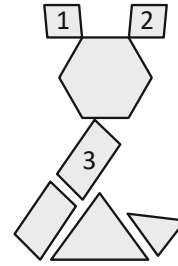
26. (C) Bryophyllum and Begonia reproduce vegetatively from their leaves while sugarcane reproduces vegetatively through its stem. Potato, ginger and onion reproduce from stems. The roots of sweet potato, Dahila and carrot give rise to new plants. Hibiscus, Bougainvillea and rose reproduce from stem.
27. (D) The given animal is butterfly whose body is covered with cuticle.
28. (A) A crack or a break in a bone is called a fracture. The cloth tied around the neck gives support to the arm.
29. (D) All the organisms are grouped correctly.
30. (C) Pivot joint is found between the first two vertebrae of the backbone.
31. (C) Rickets is caused due to deficiency of vitamin D.
32. (B) The man in the given figure is harvesting the crops using a sickle.
33. (A) Air exerts pressure. It helps in suckly juice.
34. (C) A grasshopper can camouflage itself in the grass to protect itself from the predator.
35. (B) Rock X could be slate which is a metamorphic rock formed shale. It breaks into flat and thin layers. Its colour varies from grey to black and it is used to make slates and blackboards.
36. (C) Venus shines brightly in the sky. It is known as the morning and evening star. It takes around 224 days to revolve around the Sun and it does not have any natural satellite.
37. (A) Drying of wet floor involves evaporation of water from the floor.
38. (B) Tweezers is an example of III class lever.
39. (C) Rickets is the softening of bones.
40. (C) Mesosphere prevents meteorites falling on earth.
41. (B) Pliers is an example of I class lever.
42. (D) P-iii ; Q-i ; R-iv ; S-ii
- Uranus is clodest planet
  - Mars is red planet
  - Mercury is smallest planet
  - Saturn is second largest planet
43. (B)  $P \rightarrow S \rightarrow R \rightarrow Q$
44. (B) In case of heat stroke, one should immediately rehydrate the person with a solution of salt, sugar and lime juice or juice of an unripe mango. This will replenish salt and water that the person has lost through sweating.
45. (B) Spinal cord is connected to Medulla.
46. (A) Thick leathery pads of camel help it walk on the hot sand.
47. (A) Pumice is a light weight igneous rock.
48. (A) A waterwheel is a machine that converts the energy of free-flowing water into useful forms of power.
49. (C) Water can dissolve many substances, hence it is known as a universal solvent.
50. (A) Inclined plane uses a slanted surface that connects a lower level to a higher level.
51. (C) Milk changing into curd is a chemical change.
52. (B) In case of dog bite, clean the injured part thoroughly first with soapy water. In case of wound we use antiseptic solution to clean In case of insect bite we remove the sting first In case of sprain it is not at all needed to wash the injured part.
53. (B) The umbra (Latin for "shadow") is the innermost and darkest part of a shadow, where the light source is completely blocked by the occluding body. An observer in the umbra experiences a total eclipse.

54. (D) All the statements are true regarding human skeleton.
55. (B) Gneiss is a metamorphic rock formed from granite. It is used as a building material.

**CRITICAL THINKING**

56. (C) Bucket Y will get filled first.
57. (C) From the statements "S is more fat than T" and "S is thinner than Q".
58. (A) Cause : Charan's bicycle had a flat tire.  
Effect : Charan couldn't go to his friend's house.

59. (A)



60. (B)

	1	2	3	
	4	5	6	
	7	8	9	
	10	11	12	

=====*The End*=====