



**NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION (UPDATED)**

**CLASS - 5**  
**Question Paper Code : UN487**

**KEY**

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

**SOLUTIONS**

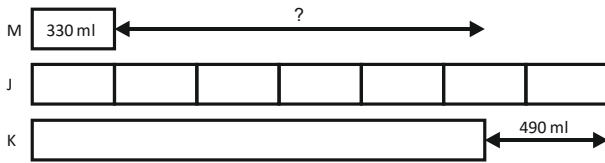
**MATHEMATICS**

01. (C) (A)  $3.985 = 3.99$   
 (B)  $4.094 = 4.09$   
 (C)  $4.099 = 4.10$   
 (D)  $4.105 = 4.11$
02. (D)  $\square \div 8 = 497.25$   
 $\square = 497.25 \times 8 = 3978.00 = 3978$
03. (D) Time taken by Sara to finish reading one page = 3 min 20 sec  
 $= 60 \times 3 \text{ min} + 20 \text{ sec} = 180 + 20 = 200 \text{ sec}$

- Time taken to finish reading 42 pages =  $200 \times 42$   
 $= 8400 \text{ sec}$   
 $= 3600 + 3600 + 1200$   
 $= 2 \text{ h } 20 \text{ min}$
04. (D) No. of boxes = 9  
 No. of packets in 1 box = 50  
 No. of packets in 9 boxes =  $50 \times 9 = 450$   
 He repacked into container of 6 packets each =  $450 \div 6$   
 $= 75 \text{ containers.}$

05. (D) Length of rectangle =  $6 \times 4 = 24$  cm  
 Perimeter of the rectangle =  $24 + 24 + 6 + 6 = 60$  cm

06. (C)



$$1 \text{ unit} \rightarrow 330 \text{ ml}$$

$$7 \text{ units} \rightarrow 330 \text{ ml} \times 7$$

$$= 2310 \text{ ml (jug)}$$

$$2310 \text{ ml} - 490 \text{ ml} = 1820 \text{ ml (kettle)}$$

$$1820 \text{ ml} - 330 \text{ ml} = 1490 \text{ ml}$$

07. (A)  $45 \times 3 = 135$  (Tue)  
 $44 \times 5 = 220$  (Wed)  
 $220 + 135 = 355$

08. (B) Perimeter of the given figure = 102 m  
 $AB + BC + CD + DE + EF + AF = 102$  m  
 $22 \text{ m} + 14 \text{ m} + 15 \text{ m} + 22 \text{ m} + EF + 20 \text{ m}$   
 $= 102$  m  
 $93 \text{ m} + EF = 102$  m  
 $EF = 102 \text{ m} - 93 \text{ m} = 9$  m

09. (D) 4 times table: ..., 56,  $\boxed{60}$ , 64, 68,  $\boxed{60}$ ,  
 76, 80,  $\boxed{84}$ , 88,....  
 6 times table: ...,  $\boxed{60}$ , 66,  $\boxed{60}$ , 78,  
 $\boxed{84}$ , ...  
 $8 = 4 \times 2$   
 The number Pamela is thinking of is **84**.

10. (D) Factors of 24 = 1, 2, 3, 4, 6, 8, 12, & 24  
 Sum =  $1 + 2 + 3 + 4 + 6 + 8 + 12 + 24 = 60$   
 Subtract 15 from 60 =  $60 - 15 = 45$

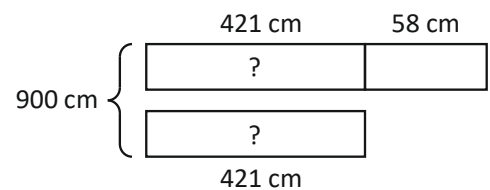
11. (C)  $\frac{7}{20} = \frac{7}{20} \times 100\% = 35\%$

12. (A) D and F

13. (B)  $4 \times 10000 + 3 \times 1000 + 2 \times 10 + 4 \times 1$   
 $= 40000 + 3000 + 20 + 4$   
 $= 43000 + 24 = 43024$

14. (B) Total no of trees = 40  
 One gum tree for every 4 mango trees  
 $= 40 \div 5 = 8$   
 Mango =  $8 \times 4 = 32$ ,  
 Gum trees =  $8 \times 1 = 8 = 32 + 8 = 40$

15. (A) Length of a rope = 900 cm  
 $= 900 \text{ cm} - 58 \text{ cm} = 842$  cm  
 $= 842 \div 2 = 421$  cm



- Length of the shorter piece = 421 cm  
 Length of the longer piece =  $421 \text{ cm} + 58 \text{ cm} = 479$  cm  
 Length of the piece cut off from longer piece = 227 cm  
 Remaining length of the longer piece =  $479 \text{ cm} - 227 \text{ cm} = 252$  cm

16. (C) Option (A) :  $\frac{18}{25} = 0.72$

Option (B) : 0.357

Option (C) : 0.864

Option (D) :  $\frac{13}{20} = 0.65$

17. (C) Cost of brand A T.V = ₹3109  
 Cost of brand B T.V = ₹3109 - ₹1225  
 $= ₹1884$   
 Cost of brand C T.V = ₹2764 + ₹1884  
 $= ₹4648$

18. (D) Mass of 6 chairs and 2 tables = 28 kg 550 g  
 Mass of a table = 4 kg 575 g heavier than a chair  
 $= 4 \text{ kg } 575 \text{ g} + 4 \text{ kg } 575 \text{ g} = 9150$   
 $= 28550 \text{ g} - 9150 \text{ g} = 19,400 \text{ g}$   
 $= 19400 \div 8 = 2425 \text{ g}$   
 Mass of a chair = 2425 g = 2 kg 425 g  
 Mass of a table = 2425 g + 4575 g = 7000 g = 7 kg
19. (A) Multiples of 7 = 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91  
 84 is the number divided by 6 and leave no remainder.
20. (A) Length of a wire bent to form a square = 48 cm  
 Side of a square =  $48 \div 4 = 12 \text{ cm}$   
 Area of the square =  $12 \times 12 = 144 \text{ cm}^2$
21. (C) Required ratio = 55 : 70 : 45  
 $= 11 : 14 : 9$
22. (C)  $\frac{3}{4} \times \frac{140}{560} + \frac{1}{3} \times \frac{200}{600}$   
 $3 \times 140 + 1 \times 200 = 420 + 200 = 620$
23. (B)  $60 \times \frac{2}{5} = ₹24$   
 $60 \times \frac{3}{5} = ₹36$   
 Difference = ₹(36 - 24) = ₹12
24. (A) Time at noon = 12  
 1 h 25 min before noon  
 $= 12 - 1 \text{ h } 25 \text{ min}$   
 $= 10 \text{ h } 35 \text{ min}$   
 $\therefore$  Rajesh left the office at 10:35 a.m.

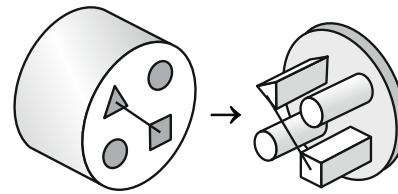
25. (A) Fraction of the day spent on household works =  $\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$   
 $1 - \frac{3}{4} = \frac{1}{4}$   
 She had  $\frac{1}{4}$  of the day left for herself.

### GENERAL SCIENCE

26. (A) Blood vessels 'X' are arteries.
27. (B) Plants with two years to complete their life cycle are called biennials.
28. (C) The layer that surrounds the earth is called atmosphere.
29. (B) Lubricants reduce friction. Changing the sliding movement to rolling movement reduces friction.
30. (A) Heart beat is known by using stethoscope.
31. (A) During photosynthesis glucose and oxygen is produced by a green plant.
32. (B) Bryophyllum reproduces from leaf buds. Produced from the notches of a leaf.
33. (D) Factors determining weather are temperature, moisture and wind.
34. (B) Fish - gills, Earthworm - skin, Dolphin - lungs, Mosquito - trachea.
35. (C) A seed need air, warmth and water to germinate.
36. (D) Measles, Chicken pox and Cold are called communicable diseases.
37. (B) a - ii; b - iii; c - iv; d - i
38. (B) Astronauts float in space due to the absence of gravitational force.
39. (B) P - Milk, Q - Oxygen, R - Pencil
40. (D) After Full Moon waning phase of lunar cycle, starts. Hence, little part of the Moon will decrease from Full Moon to New Moon. If Full Moon is observed on December 19 then after three days, i.e., on December 22 waning Gibbous Moon will be observed.

41. (B) Rock X could be slate which is a metamorphic rock formed from shale. It breaks into flat and thin layers. Its colour varies from grey to black and it is used to make slates and blackboards.
42. (A) Oxygen gas supports burning.
43. (C) Bryophyllum and Begonia reproduce vegetatively from their leaves while sugarcane reproduces vegetatively through its stem.
44. (A) By filtration and evaporation.
45. (A) X - Hinge joint ; Z - Pivot joint
46. (A) Enzymes in saliva acts on starch food.
47. (B) P - iv; Q - iii; R - ii; S - i
48. (D) Carbondioxide constitutes 0.03% of atmospheric air.
49. (B) Scurvy occurs due to the deficiency of vitamin C and the deficiency of vitamin A results into night blindness. Goitre occurs due to the deficiency of iodine.
50. (C) The fruit shown in the picture is guava and is rich in vitamin C.
51. (D) 'X' is Gliding joint.
52. (C) Vulture and Hyena are called scavengers.
53. (C) Rani is suffering from scurvy that occurs due to deficiency of vitamin C, so she should take citrus fruits that are rich in vitamin C. Mary is suffering from night blindness which occurs due to deficiency of vitamin A, so she should take fruits like papaya, mango etc. that are rich in vitamin A.
54. (D) The animal described here could only be a bird. Krait is a reptile and bat is a mammal. Penguin is a bird but its forelimbs are modified as flippers making it a good swimmer. It is a flightless bird. Pigeon is the right answer as it a flying bird and has all the characteristics listed in the question.
55. (B) The cart held by woman X has to overcome frictional force, which opposes motion. Woman Y carrying bags on both hands has to overcome gravitational force which pulls everything towards the Earth.

### CRITICAL THINKING



56. (A)
57. (D) Position of '+' will vary, but the least would be 2.  
For Ex:  $2-0-1+5-2-0-1+5-2-0-1-5 = 0$
58. (D) From none of the options can we be sure of the percentage of rotten oranges with Manu. Hence option (D) is the right answer.
59. (D) Statement 1 :  
If Ankit fills =  $x$  bottles  
Mouli fills =  $\frac{x}{2}$  bottles  
Total bottles =  $x + \frac{x}{2} = 900$   
 $2x + x = 900 \times 2$   
 $3x = 300 \times 2$   
Ankit fills  $x = 600$  bottles in 30 minutes  
Mouli fills  $\frac{x}{2} = 300$  bottles in 30 minutes  
Statement 2 :  
Ankit would take 45 minutes to fill bottles  
Total 900 bottles  
If both working take 30 minutes  
 $45 \rightarrow 900$   
 $30 \rightarrow ?$   
 $\frac{900}{45} \times 30 = 600$   
 $\therefore$  Ankit take 45 minutes to fill 600 bottles.  
Mouli takes 30 minutes to fill 300 bottles independently.  
Each statement alone to answer the question.
60. (D) JOL 1714  
Go 5 forward and 3 back in the alphabet. The numbers continue from the alphabetic position of the letter.