



UNIFIED COUNCIL

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NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION (UPDATED)

CLASS - 6

Question Paper Code : UN464

KEY

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

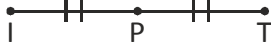
EXPLANATIONS

MATHEMATICS

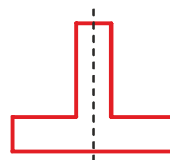
01. (D) LCM of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 = 2520

2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
2	1, 1, 3, 2, 5, 3, 7, 4, 9, 5
3	1, 1, 3, 1, 5, 3, 7, 2, 9, 5
5	1, 1, 1, 1, 5, 1, 7, 2, 3, 5
	1, 1, 1, 1, 1, 1, 7, 2, 3, 1

2. (B) This is multiplication distributes over addition

3. (B) 
IP = PT

4. (B) Option (B) has only one line symmetry



5. (A) Let the fraction be $\frac{5x}{8x}$

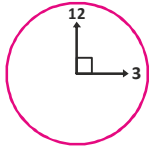
$$\text{Given } 8x + 5x = 91$$

$$13x = 91$$

$$x = \frac{91}{13} = 7$$

$$\therefore 8x - 5x = 3x = 3 \times 7 = 21$$

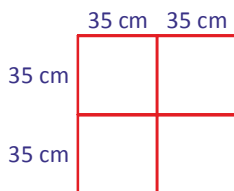
6. (C) From options 12045 is divisible by 11
(OR)
Given 120C5 is divisible by 11
(5 + 0 + 1) - (2 + c) is divisible by 11
 $6 - 2 - c = 11$
 $4 - c = 11 \times 0$
 $4 - c = 0$
 $c = 4$



7. (C)

8. (B) Number of boys = $3200 - 1800 = 1400$
The ratio of girls to boys = $1800 : 1400 = 9 : 7$
09. (D) Nissi marks = $92 - 4 = 88$
Rishi marks = $88 + 10 = 98$
Marks difference between Rishi and Jessy = $98 - 92 = 6$

10. (A) Two acute angles and one obtuse angle will be in an obtuse angled triangle
11. (C) W score = $10 + 6 = 16$
12. (D) $12.9 + P + Q = 9 - 1.8 - 1.32$
 $12.9 + P + Q = 5.88$
 $P + Q = 5.88 - 12.9$
 $= -7.02$
13. (D) Sum of the digits is divisible by 9 then whole number is divisible by 9



14. (C)

Side of the new square = $35 \text{ cm} + 35 \text{ cm} = 70 \text{ cm}$
Area of new square = $S^2 = 70 \text{ cm} \times 70 \text{ cm} = 4900 \text{ cm}^2$

15. (B) Distance travelled = $1614.3 \text{ km} - 198.6 \text{ km} = 1415.7 \text{ km}$

16. (D) Total students come by bus and car = $50 \times \frac{3}{5} + 12 = 30 + 12 = 42$
Number of students walk = $50 - 42 = 8$
Fraction of students walk = $\frac{8}{50} = \frac{4}{25}$

17. (B) $-18 < 16$
18. (A) A scalene triangle has no line of symmetry.
19. (C) ₹ 15 : 50 paise = 1500 paise : 50 paise = 30 : 1

20. (B) Cost of each book = $\frac{x}{8}$
Number of books can buy for ₹ 60 = $\frac{60}{\left(\frac{x}{8}\right)} = 60 \times \frac{8}{x} = \frac{480}{x}$

21. (D) odd number \times odd number \times odd number = odd number

22. (C) $d = \frac{2\pi r}{\pi} = 2r$

23. (B) $\frac{3}{4} + \frac{1}{3} + \frac{2}{5} = \frac{45 + 20 + 24}{60} = \frac{89}{60}$

$$\therefore \text{Difference} = \frac{89}{60} - \frac{59}{60} = \frac{30}{60} = \frac{1}{2}$$

24. (A) Let the four consecutive odd numbers be

$$x, x + 2, x + 4, x + 6$$

$$\text{Given } x + x + 2 + x + 4 + x + 6 = 40$$

$$4x + 12 = 40$$

$$4x = 40 - 12$$

$$4x = 28$$

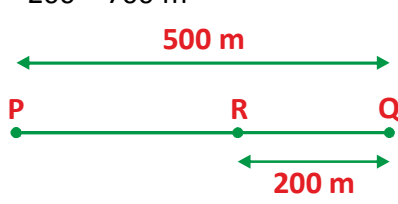
$$\therefore x = \frac{28}{4} = 7$$

\therefore Four consecutive odd numbers are 7, 9, 11, 13

Smallest number = 7

25. (B) Distance covered in one revolution =
 $\frac{660}{500}m = \frac{66}{50}m$
 $\therefore 2\pi r = \frac{66}{50}$ metres
 $2 \times \frac{22}{7} \times r = \frac{66}{50}$ metres
 $2r = \frac{66}{50} \times \frac{7}{22}$ metres
 $= \frac{21}{50}$ metres = $\frac{21}{50} \times 100$ cm = 42 cm

PHYSICS

26. (A) Iron wire, brass screw and salt water are classified as conductors. On the other hand, pure water is not a good conductor of electricity. But when it contains the slightest amount of salt, then it becomes a good electrical conductor. Cotton thread is an insulator and does not conduct electricity through it to light up the bulb.
27. (D) Breadth of a book is not measured with a spring balance.
28. (D) Shadows of objects are formed because light travels in a straight line. Opaque objects cast shadows as light cannot pass through them.
29. (D) A bulb or bulbs in circuits (A) and (B) appear equally bright. Circuit (C) has double the voltage thus the bulb would be twice as bright.
30. (D) Distance travelled by the person = $500 + 200 = 700$ m
- 
31. (D) A brick wall is opaque (does not let light through), spectacle glass is transparent (lets light through completely) and a plastic light shade is translucent (lets light through partially). Only in option (D) the objects are correctly placed.
32. (C) Tungsten has a high melting point. Hence, it is used as a filament in electric bulbs.

33. (A) Among the given relationships only 1 km = 1000 m is correct. $1 \mu\text{m} = 1 \times 10^{-6}$ m, 1 dm = 0.1 m and 1 m = 1000 mm respectively.
34. (C) Metal spoon is a non-luminous body and torch light is a luminous body.
35. (B) In circuit P → The bulb glows as it is a complete circuit.
 In circuit Q → There is no cell and so no current flows to light up the bulb.
 In circuit R → The filament is broken in the bulb. So, the bulb does not light up.

CHEMISTRY

36. (D) Diamond is harder than blackboard and chalk.
 Diamond is the hardest and chalk is the softest. Blackboard is less harder than diamond.
37. (D) On removal of weight, the spring comes back to its original shape. It is man-made and reversible.
38. (A) The ground water of that place becomes lower due to more usage of water through water pumps. Also, the construction of concrete houses and roads has blocked the rain water from seeping into the ground.
39. (A) Liquids do not have a definite shape but have a definite volume. They take the shape of the container in which they are placed. So, oil can be poured from one container to another container.
40. (D) Only heating and cooling will change the physical state of substance. Filtering does not change the physical state of a substance as it is just a physical method of separating an insoluble solid substance from a liquid.
41. (C) The low temperature in a refrigerator prevents food from getting spoiled.
42. (D) Air, limestone and clay are natural raw materials.
43. (D) As per the given figure, statements (A), (B) and (C) are true.

44. (B) The correct order of the separation process is to add water first to dissolve the salt, then filter to obtain the sand and finally evaporate the filtrate to obtain the dissolved salt.

Options (A), (C) and (D) : Are the wrong order of separation of the given mixture.

45. (D) Air is filled in balloons. Rubber being soft and flexible can easily withstand air pressure.

BIOLOGY

46. (B) Leaves require water taken in from the roots to make food. The food is carried out of the leaf to other parts of the plant.

When the leaf respire, it takes in oxygen and gives out carbon dioxide.

47. (C) The snake is the predator of the rat and the prey of the owl.

48. (B) Vitamin C helps to keep skin healthy. It also helps in healing wounds. Eg: Lemon, guava, gooseberry.

49. (B) The sequence followed to make a fabric is Ginning → spinning and weaving.

50. (C) The device is called charkha. It is used for spinning. The process of making yarn from fibres is called spinning.

51. (B) As Animal R feeds on Animal S and Plant Q, we can conclude that it is a plant-and-animal eater or an omnivore.

We cannot conclude where the organisms live, how the animals reproduce and if the plant is woody or non-woody from the information given.

52. (B) The type of joint shown in the given figure is ball and socket.

53. (B) The part labelled 'X' are breathing roots. To obtain sufficient oxygen, the roots arise above the ground contain pores.

54. (C) The statement describes photosynthesis which makes food in the form of sugar and produces oxygen.

55. (D) The functions of the skeleton is to produce red blood cells and to protect certain delicate and vital organs of the body.

CRITICAL THINKING

56. (C) Last digit: $100 \rightarrow 0$ (and carry 10)

Second last digit: $10 + 8$ (carry) = 108, second digit (carry 10)

∴ The last 2 digits are 80.



57. (D)

58. (Deleted)

59. (D) The black square keeps shifting in anticlockwise direction from leftmost square to squares on the right.

60. (A) 21; There are 15 small hexagons and 6 large ones. The last shape in the bottom row is a pentagon.

THE END
