



UNIFIED COUNCIL

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NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION (UPDATED)

CLASS - 5

Question Paper Code : UN465

KEY

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

SOLUTIONS

MATHEMATICS

1. (D) Chord MN and QR pass through the centre O of the circle. So, they are diameters.
- 2: (C) Volume of tank = $40 \times 20 \times 21 = 16800 \text{ cm}^3$
Volume of water in tank = $16800 \times \frac{3}{4} = 12600 \text{ cm}^3 = 12.6 \text{ l}$
- 3: (C) Area of the rectangle = $8 \times 5 = 40 \text{ cm}^2$
The area of the shaded portion is half the area of the the rectangle.
Hence, area of the shaded portion = $40 \div 2 = 20 \text{ cm}^2$

- 4: (B) 19:30 to 20:45 is 1 h 15 min.
 $5 \times (1 \text{ h } 15 \text{ min}) = 5 \text{ h } 75 \text{ min} = 6 \text{ h } 15 \text{ min}$
13:30 to 16:05 is 2 h 35 min
 $6 \text{ h } 15 \text{ min} + 2 \text{ h } 35 \text{ min} = 8 \text{ h } 50 \text{ min}$
 $11 \text{ h } 5 \text{ min} - 8 \text{ h } 50 \text{ min}$
 $= 10 \text{ h } 65 \text{ min} - 8 \text{ h } 50 \text{ min}$
 $= 2 \text{ h } 15 \text{ min}$
He watches television for 2 h 15 min on Sunday

5: (B) 7 h 30 min = 450 min
 $450 \text{ min} \div 5 = 90 \text{ min}$
 = 1 h 30 min

6: (C) Any number between 15.79 and 15.84 is 15.8 when rounded off to 1 decimal place. The largest possible number is 15.84

7: (A) Cost of 1 bag of rice ₹ $1539 \div 12$
 = ₹ 128.25
 Cost of 1 kg of rice = ₹ $128.25 \div 5$
 = ₹ 25.65

8: (D) The LCM of 6 & 9 is 18. The 2-digit whole numbers which are multiple of both 6 & 9 = 18, 36, 54, 72, & 90

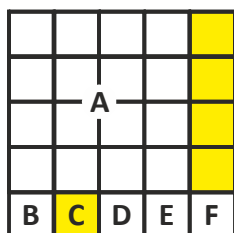
9: (C) 1 h (60 minutes) → 40 km
 24 minutes → ?

$$\frac{\cancel{24}^4 \times \cancel{4}^0}{\cancel{6}_1 \cancel{0}} = 16 \text{ km}$$

10: (D) $\frac{3}{8} + \frac{1}{4} = \frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

$$1 - \frac{5}{8} = \frac{8}{8} - \frac{5}{8} = \frac{3}{8}$$

11: (A) Total number of squares = 25



Shaded squares = 5

$$\text{Fraction of shaded figure} = \frac{5}{25} = \frac{1}{5}$$

12: (A) $973 + 10 \times \underbrace{(32 - 12)} \div 2$
 = $973 + \underbrace{(10 \times 20)} \div 2$
 = $973 + \underbrace{(200 \div 2)}$
 = $973 + 100 = 1073$

$$\begin{array}{r} 11.8 \text{ m} \\ + 4.7 \text{ m} \\ \hline 16.5 \text{ m} \end{array}$$

13: (A)

Simran bought 16.5 m of wire

14: (D) $32.46 + 10.23 = 42.69$

$$87 - 42.69 = 44.31$$

15: (A) Product of two no's = HCF × LCM

Given HCF = 16, LCM = 672

One number = 112, find the 2nd number = ?

$$1^{\text{st}} \text{ no.} \times 2^{\text{nd}} \text{ no.} = \text{HCF} \times \text{LCM}$$

$$2^{\text{nd}} \text{ no.} = \frac{16 \times \cancel{672}^6}{\cancel{112}_1}$$

$$2^{\text{nd}} \text{ no.} = 96$$

16: (B) Distance covered by Riya = 60% of 370 km

$$= \frac{60}{100} \times 370 = 222 \text{ km}$$

Distance from Town B

$$= 370 - 222 = 148 \text{ km}$$

17: (A) $560 \text{ g} = 56 \div 1000 = 0.56 \text{ kg}$

18: (D) Given 4-digit number = 2020

Greatest 3-digit number is 999, and the greatest 4-digit number is 9999.

$$\text{Their sum is } 999 + 9999 + 2020 = 10998 + 2020 = 13018$$

19: (B) No. of glasses needed to fill $\frac{4}{5}$ of a jar = 48

No. of glasses needed to fill $\frac{1}{2}$ of jar = ?

$$\frac{1}{2} \times 48 = \frac{1}{2} \times \cancel{48}^{\cancel{12}^6} \times \frac{5}{\cancel{4}_1}$$

$$= 1 \times 6 \times 5 = 30 \text{ glasses}$$

- 20: (B) Average height of children = 84 cm
 \therefore Their total height
 $= 3 \times 84 \text{ cm} = 252 \text{ cm}$
 Height of Bhaskar
 $= [252 - (78 + 90)] \text{ cm}$
 $= (252 - 168) \text{ cm} = 84 \text{ cm}$

21: (C)

	Fig A	Fig B	Fig C	Fig D
Area	4	5	5	4
Perimeter	8	10	12	10

- 22: (B) Multiples of 6: 6, 12, 18, 24, 30, 36, 42, 48...

Multiples of 7: 7, 14, 21, 28, 35, 42, 49,....

There are 42 pieces of chocolate in the box

- 23: (B) $7 \times 3 = 21$; $12 \times 5 = 60$; $91 \div 7 = 13$

- 24: (B) $2309 + 1453 = 3762$

$$3762 \div 6 = 627$$

$$627 \approx 600$$

- 25: (A) $\frac{1}{5} = \frac{2}{10}$, $\frac{1}{2} = \frac{5}{10}$

Rearranging : $\frac{9}{10}$, $\frac{6}{10}$, $\frac{1}{2}$, $\frac{1}{5}$

GENERAL SCIENCE

26. (D) Lotus fruit and coconut fruits are dispersed by water.

Fruits that are dispersed by water are able to float on water.

27. (C) Fish is a vertebrate. Vertebrates have backbone.

28. (D) Tongs in option (D) is a 3rd order level. The effort is in the centre and load is at the extreme.

29. (D) If there is fire in the building, one should vacate the building immediately, go down the stair and never use the lift.

30. (A) Fossil fuels like petroleum, diesel and car will disappear if we do not use it wisely.

31. (D) Snake is a prey and predator in the given food chain.

32. (D) A deer get food, shelter and air to breathe from the plants to survive.

33. (B) Mushroom, toadstool and fern reproduce by spores.

34. (D) The animal shown below is a Hedgehog. It is a mammal, it is warm-blooded, it has an outer covering of hair, it gives birth to its young alive, it suckles its young.

35. (D) Whale, Snake and fish are vertebrates.

36. (B) The rat uses them to gnaw (nibble) nuts, grains, meat, and vegetable matter. The rat uses its incisors for biting hard stuff.

37. (A) Things that cover animal bodies are scales, fur, hair, skin and feathers.

38. (B) Sedimentary rocks are formed from shells of tiny sea creatures and dissolved minerals that settle by the side of oceans.

39. (C) Solar energy from the sun. Coal contains chemical energy. During the combustion of coal, the chemical bonds of carbon and oxygen break apart to release energy.

40. (A) Nervous systems controls the sense organs and all the other systems of our body.

41. (C) When a lightbulb is lit, electrical energy is changed into light energy and heat energy

42. (D) P - III, Q - II, R - I

43. (B) Heat transfers from a hot body to a cold body or medium.

44. (D) Frogs' feed on grasshoppers. If the frog population is decreased the grasshopper population would increase.

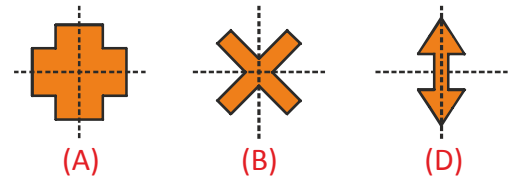
45. (D) The volume of the marbles causes the water level to rise when they are put in the graduated cylinder.

46. (B) The arm of human body functions as a lever.

47. (A) Plants need to ensure that their seeds are scattered or dispersed as far away as possible. Dispersal prevents overcrowding and reduces the competition of young plants among themselves and with the parent plant. Plants that grow too closely together have to compete for sunlight, water and minerals.
48. (D) Animals like deers, elephants, goats and cattle live in a herd to protect themselves from the predators.
49. (B) Turtle, Lizard and Crocodile are reptiles.
50. (C) Outer hardshell of crab protects the crab from predators.
51. (C) The box is being lifted with the help of a pulley.
52. (C) Germination is the process in which a plant emerges from a seed and begins growth. A seed needs air, water and a suitable temperature to germinate. Mature seeds are often dry and need to absorb a significant amount of water before cellular metabolism and growth can resume. Temperature affects the cellular metabolism and growth rates. Most seeds are not affected by light or darkness and will germinate whether it is placed in a cupboard or near the window of a room.
53. (B) Buoyant force make the wood float on water.
54. (A) A student rubs his hands together to warm them. His hands get warm due to friction.
55. (B) Animals move from one place to other to get water, food, shelter and protection.

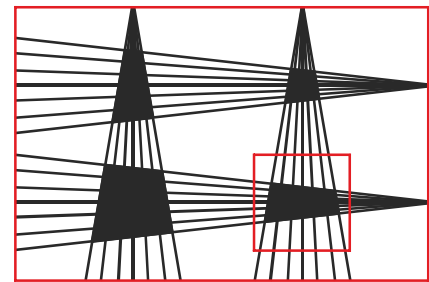
CRITICAL THINKING

- 56: (D) I would call a plumber to repair the tap.
- 57: (D) Sum of the number on opposite faces are
 $11 + 9 = 20$
 $14 + 6 = 20$
 $15 + 5 = 20$
 6th face is 15



58: (C)

- 59: (A) On adding and interchanging the positions we get Revanth's position as 17th from left. Hence option A is the correct answer.



60: (B)

THE END
