



UNIFIED COUNCIL

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UNIFIED CYBER OLYMPIAD - UC 329

Solutions for class : 5

Mental Ability

1. (C) The smallest 4-digit = 1000
Now L.C.M. of 12, 15, 20 and 35

2	12, 15, 20, 35
2	6, 15, 20, 35
3	3, 15, 5, 35
5	1, 5, 5, 35
7	1, 1, 1, 1
	1, 1, 1, 1

$$\text{L.C.M} = 2 \times 2 \times 3 \times 5 \times 7 = 420$$

We divide 1000 by 420

$$420 \overline{) 1000} \begin{matrix} 2 \\ - 840 \\ \hline 160 \end{matrix}$$

160 – Remainder

∴ The least 4-digit number that is exactly divisible by 12, 15, 20 and 35

$$= 1000 + (420 - 160)$$

$$= 1000 + 260 = 1,260$$

2. (B) $\frac{1}{8} < \frac{1}{4}$. So, it should lie between 0 and $\frac{1}{4}$.
3. (B) Temperature shown in thermometer = 41°F

$$\text{So, temperature (in } ^\circ\text{C)} = (41 - 32) \times \frac{5}{9}$$

$$\left[^\circ\text{C} = (^\circ\text{F} - 32) \times \frac{5}{9} \right]$$

$$= 9 \times \frac{5}{9} = 5^\circ\text{C}$$

4. (B) Share of each person = $3.5 \div 40$
= 0.0875 kg.

5. (D) Common factors of 36 and 24 are 1, 2, 3, 4, 6, 12.
P is the 2-digit common factor of 36 and 24.
∴ P = 12

Q is a factor and multiple of 28, which is 28.

$$\therefore P + Q = 12 + 28 = 40$$

6. (B) The product of a fraction and its reciprocal is 1.
7. (B) $\angle\text{AOB} = \angle\text{DOC}$

$$\Rightarrow \angle\text{AOB} = \frac{180^\circ - 88^\circ}{2} = 46^\circ$$

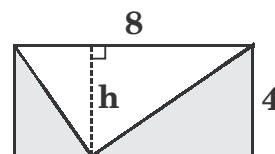
$$\angle p = \angle\text{AOB} = 46^\circ$$

8. (D) Volume of 4 similar cubes of side
 $5 \text{ cm} = 4 \times 5 \times 5 \times 5 \text{ cm}^3 = 500 \text{ cm}^3$
9. (B) February 2013 has 28 days as 2013 is a non leapyear.

Wednesdays in the next weeks are 6th March (27 + 7), 13th March, 20th March and 27th March.
So, 27th March 2013 was a Wednesday.

10. (C) Time taken by Deva = 59 sec
Time taken by Harish = 68 sec
Difference = (68 - 59) sec
= 9 sec

11. (B) The area of the rectangle is 8×4 , or 32.



The unshaded portion of the rectangle is a triangle with base of length 8 and height h, as shown.

Since the dotted line (the height) with length h is parallel to the vertical side of the rectangle, then $h = 4$.

Thus, the area of the unshaded triangle is $\frac{1}{2} \times 8 \times 4 = 4 \times 4 = 16 \text{ sq. units}$.

The area of the shaded region is the area of the rectangle minus the area of the unshaded triangle.

Thus, the area of the shaded region is $32 - 16 = 16$ sq. units.

12. (A) Since each of five friends paid an extra ₹ 3 to cover Luxmi's portion of the bill, then Luxmi's share was $5 \times ₹ 3 = ₹ 15$.

Since each of the six friends had an equal share, then the total bill is $6 \times ₹ 15 = ₹ 90$.

13. (D) Increased salary of the man
= 120% of his salary before increase
∴ His salary before increase

$$= \text{Increased salary} \times \frac{100}{120}$$

$$= ₹ 3000 \times \frac{100}{120} = ₹ 2500$$

14. (D) As each slice is $\frac{1}{6}$ th of the pizza.

So number of pizza slice in one pizza = 6

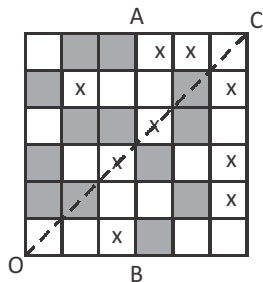
Total pizzas = 4

So, total number of pizza slices = $6 \times 4 = 24$

Number of slice each one of 8 people gets

$$= \frac{24}{8} = 3$$

15. (B)



The number of squares having a cross sign should be shaded to make the given figure symmetrical about the line AB, which is obtained by folding the given figure along the line AB.

∴ Number of squares with cross sign = 9

Reasoning

16. (D) The option (D) is hidden in the given figure (X) as shown in adjoining figure.



Hence, option (D) is correct.

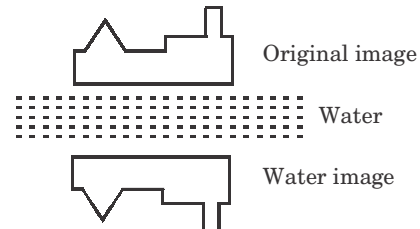
17. (D) The small shaded circle gets unshaded and the small unshaded circle gets shaded. On following this pattern, option (D) will complete the second pair.

18. (D) Each time the line with the circle is shifting $\frac{1}{2}$.

19. (B) The pattern can be completed as

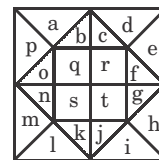


20. (A) The correct water image is



Hence, option (A) is correct.

21. (B) The straight lines are



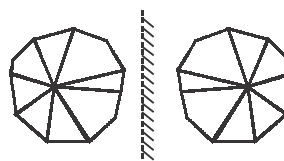
No. of individual triangles = 16

Triangles formed by combinations =

$p + a, d + e, h + i, l + m, b + c, f + g, k + j,$
 $o + n, b + q + o, c + r + f, g + t + s, s + n + k,$
 $b + c + o + q + r + f, n + s + t + g + k + j,$
 $b + q + s + k + n + o, c + r + t + j + f + g$

∴ The number of triangles = $16 + 16 = 32$

22. (C)



23. (A) The pattern is as follows

As, $4 + 4 = 8$, positional value of H in English alphabetical order.

$7 + 3 = 10$, Positional value of J in English alphabetical order.

Similarly,

$5 + 2 = 7$, positional value of G in English alphabetical order.

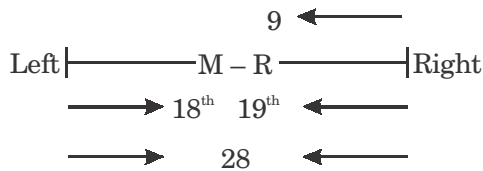
So, G will replace the question mark.

24. (B) The option (B) is hidden in the given figure (X) as shown in adjoining figure.



Hence, option (B) is correct.

25. (B) In a row of 28 books the rank of Maths book from the left is 18. So, there are $28 - 18 = 10$ books to the right of Maths book.



And the rank of Reasoning book is 19^{th} from the left. So, there are $28 - 19 = 9$ books to the right of Reasoning book.

So, the rank of Maths book from the right end is $10 + 1 = 11^{\text{th}}$. The rank of Reasoning book from the right end = $9 + 1 = 10^{\text{th}}$.

Another method

Rank of Maths book from the right end
 $= 28 - 18 + 1 = 10 + 1 = 11^{\text{th}}$

Rank of Reasoning book from the right end
 $= 28 - 19 + 1 = 9 + 1 = 10^{\text{th}}$

26. (C) The given codes can be represented as

Letters	B	R	I	N	G	O	U	D
Symbol codes	\$!	©	@	#	%	?	+

Here, $B \rightarrow \$$, $R \rightarrow !$, $O \rightarrow \%$, $D \rightarrow +$

So, the code for BROOD is \$! % % +

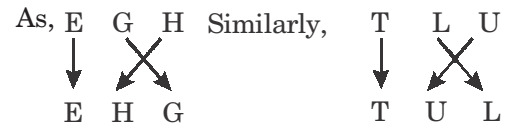
27. (B) Let ☺ = X

and ☹ = Y



28. (C) In all the figures except option (C), the two arrows are pointing in one direction and other two arrows are pointing in opposite direction. But in option (C), the three arrows are pointing in one direction and one arrow in pointing in opposite direction. So, option (C), is odd one out.

29. (B) The pattern is as follows:



30. (B) Here, the sum of each square is 30.

$$\text{As, } 6 + 4 + 8 + 12 = 30$$

$$\Rightarrow 3 + 7 + 2 + 18 = 30$$

$$\Rightarrow 9 + x + 19 + 1 = 30$$

$$\Rightarrow 29 + x = 30$$

$$x = 30 - 29 = 1$$

$$\text{and } 4 + 1 + 10 + y = 30$$

$$\Rightarrow 15 + y = 30 \Rightarrow y = 30 - 15 = 15$$

$$\text{So, } x = 1 \text{ and } y = 15$$

Computers

31. (C)
 32. (C)
 33. (C)
 34. (A)
 35. (C)
 36. (A)
 37. (B)
 38. (A)
 39. (A)
 40. (D)
 41. (A)
 42. (A)
 43. (A)
 44. (B)
 45. (B)

English

46. (C)
 47. (D)
 48. (C)
 49. (A)
 50. (A)