



Unified International
Mathematics Olympiad

UNIFIED INTERNATIONAL MATHEMATICS OLYMPIAD (UPDATED)

CLASS - 4

Question Paper Code : 4P114

KEY

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

EXPLANATIONS

MATHEMATICS

01. (D) $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$
02. (C) Multiply number of balls per bag by total bags. Total = $7 \times (3 + 5)$.
03. (D) Charan's current age is a multiple of 6 between 30 and 70: 36, 42, 48, 54, 60, 66. Next year's age (A + 1) must be a multiple of 5. Adding 1 to each gives 37, 43, 49, 55, 61, 67. Only 55 is a multiple of 5, so her current age is 54. In 4 years, her age will be $54 + 4 = 58$.

04. (C) Let Harry have x marbles
- He gave $\frac{1}{3}$ on the bus and 20 to classmates, leaving $\frac{1}{4}$
- $$x = \frac{1}{3}x + 20 + \frac{1}{4}x$$
- $$x - \frac{7}{12}x = 20 \Rightarrow \frac{5}{12}x = 20 \Rightarrow x = 48$$

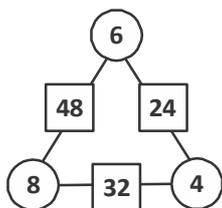
05. (C) $1200 + 800 + 500 = 2500$
06. (B) The sum of all faces on two dice is $2 \times (1 + 2 + 3 + 4 + 5 + 6) = 42$. The sum of the visible faces is given as 31, so the sum of the two hidden faces (the bottom faces) is $42 - 31 = 11$. The only pair of numbers from 1 to 6 that sums to 11 is (5, 6). The difference between these numbers is $6 - 5 = 1$

07. (B) The maximum weight allowed is 8 kg, which is 8000 g. Each book weighs 200 g, so the maximum number of books is $8000 \div 200 = 40$.

08. (B) $\frac{2}{4}, \frac{2}{8} = \frac{1}{4}, \frac{3}{4}, \frac{4}{6} = \frac{2}{3}$
 $2 + 4 + 4 + 2 = 12$

09. (A) Total numbers from 50 to 100 = 51
 Multiples of 2 = 26
 Multiples of 3 = 17
 Multiples of both (6) = 8
 Numbers removed = $26 + 17 - 8 = 35$
 Numbers remaining = $51 - 35 = 16$

10. (A) The length of the field is $(10 - 1) \times 2 = 18$ m, and the width is $(5 - 1) \times 2 = 8$ m, so the perimeter is $2 \times (18 + 8) = 52$ m



11. (C)
12. (A) 48
 Explanation : LCM of 6, 8, and 12 = 24

13. (B) 1 litre bottle half full = $\frac{1}{2}$ litre
 2 litre bottle one-fourth full
 $= \frac{1}{4} \times 2 = \frac{1}{2}$ litre
 Total water = $\frac{1}{2} + \frac{1}{2} = 1$ litre

14. (D) $A \times B = 32 \rightarrow$ the digits that make 32 are 4 and 8
 Try $A = 4, B = 8$
 $B + C = 11 \rightarrow 8 + C = 11 \rightarrow C = 3$
 Check $A + C = 7 \rightarrow 4 + 3 = 7$
 So, $A = 4, B = 8, C = 3$

- Now multiply $A \times B \times C = 4 \times 8 \times 3 = 96$
15. (C) The marshals are in a straight line in this order: P – Q – R – S
 Distance from P to S = 1200 m
 Distance from P to R = 800 m
 So, distance from R to S
 $1200 - 800 = 400$ m

16. (B) $\underbrace{888\dots\dots888}_{12 \text{ digits}} \div 111$
 $= 8008008008$
 $= 8 + 8 + 8 + 8 = 32$

17. (C) Square \rightarrow has 2 pairs of parallel sides
 Rhombus \rightarrow has 2 pairs of parallel sides
 Parallelogram \rightarrow has 2 pairs of parallel sides
 Trapezoid \rightarrow has only 1 pair of parallel sides

18. (C) $\frac{4}{5} \times 100 \text{ m} = 4 \times 20 = 80 \text{ m}$

19. (C) $\square = 6 \times 9 \times 2$

20. (D) Contest starts at noon (12 : 00 pm).
 1000 minutes = 16 hours and 40 minutes
 $(1000 \div 60 = 16 \text{ remainder } 40)$.
 Noon + 16 hours = 4:00 am next day.
 4 : 00 am + 40 minutes = 4 : 40 am.

21. (A)
 $4 \times 3 \text{ cm} = 12 \text{ cm}$

22. (B) Arun earns twice Bittu and four times Candy
So, their earnings are in the ratio
Arun : Bittu : Candy = 4 : 2 : 1
Total parts = 4 + 2 + 1 = 7
Total money = Rs. 2800
Value of 1 part = $2800 \div 7 = 400$
Candy earns 1 part = Rs. 400
23. (D) Given $S - 100 = T - 100$
 $S - 100 = T - 100$
Add 100 to both sides.
 $S = T$
24. (C) $35 \times 37 = 1295$
To get 10360, we need $1295 \times ? = 10360$
 $\Rightarrow ? = 8$
Also, the product ends in 0, so a factor 2 is needed
Since 35 and 37 are odd, ? must be even
25. (C) Amount of milk in 7 packets
 $= 7 \times 250 \text{ ml}$
 $= 1750 \text{ ml} = 1.75 \text{ l}$
26. (C) Apple = 150 g → Mango = 450 g → Papaya = 900 g → C.
27. (C) IC = 99 is Incorrect because I cannot be placed before C.
The correct Roman numeral for 99 is XCIX
28. (D) Increase = $\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$
 $\frac{2}{5} = 12\text{L}$
Full = $12 \times \left(\frac{5}{2}\right) = 30\text{L}$
29. (A) $36 \rightarrow$ product digits = 18;
 $36 \div 18 = 2$
- 30 (D) Initial length = 9 cm
Three lies: $3 \times 6 = 18$ cm increase
Two truths: $2 \times 2 = 4$ cm decrease
Final length = $9 + 18 - 4 = 23$ cm

31. (B) Sum of 1st group (1, 4, 6) = 11
Each next group's sum increases by 7
From 1st to 12th group, there are 11 increases
So,
 $11 + (11 \times 7) = 11 + 77 = 88$

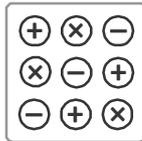
32. (A) No. of ways = 6

Plate 1	Plate 2	Plate 3
2	2	1
2	1	2
3	1	1
1	3	1
1	2	2
1	1	3

33. (B) 1 million = 1,000,000
900 tens = 9000
 $\therefore 1 \text{ million} - 900 \text{ tens} = \frac{1000000}{9000} = 991000$
34. (B) No. of flat faces = 4
35. (B) $\frac{3}{4} \times \frac{8}{9} = \frac{2}{3} \text{ l}$
 $\frac{2}{3} - \frac{1}{6} = \frac{4-1}{6} = \frac{3}{6} = \frac{1}{2} \text{ l}$

REASONING

36. (B) 
37. (B) C = \$, A = @, B = # → CAB = \$@#
38. (D) Alphabetical order:
Rabbit → Rain → River → Rope
The word that comes last is Rope

39. (A) 

40. (C) 

41. (C)



42. (A) There will be 5 Saturdays and 5 Sundays.
Number of holidays = $5 + 5 = 10$ days.

The number of working days
= $30 - 10 = 20$.

43. (D) (A) $I = 9, L = 12$

= $9 + 12 = 21$

(B) $S = 19, V = 22$

= $19 + 22 = 41$

(C) $D = 4, G = 7$

= $4 + 7 = 11$

(D) $N = 14, Q = 17$

= $14 + 17 = 31$

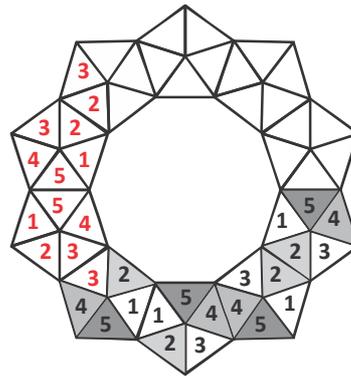
44. (C) No. of triangles = 7

No. of squares = 7

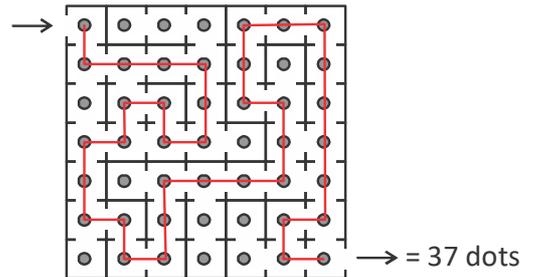
45. (D) Every box contains 3 lines, difference between above horizontal line objects below horizontal line objects is equal to 2.

CRITICAL THINKING

46. (C)



47. (C)



48. (A) 18

First day : (4 guavas)

Second day : (6 guavas)

Third day : (8 guavas)

49. (C) Total weight = 24 kg, so each side = 12 kg.

Left side shows 3 diamonds = 3 clovers, so 1 diamond = 1 clover.

On the right side, after matching equal shapes, the moon equals one shape.

Each shape weighs 2 kg.

Value of the moon = 2

50. Delete

THE END