



Unified International
Mathematics Olympiad

UNIFIED INTERNATIONAL MATHEMATICS OLYMPIAD (UPDATED)

CLASS - 5

Question Paper Code : 40119

KEY

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

EXPLANATIONS

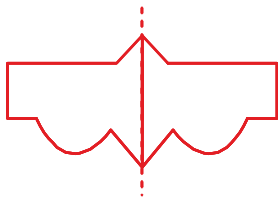
MATHEMATICS

01. (D) Five crore
02. (B) 2 kg 150 g = 2150 g
2.2 kg = 2200 g → So: 2150 g < 2200 g = 2.2 kg
03. (D) Total ribbon used for cards = Total ribbon – ribbon used for present – ribbon left
Ribbon for cards = 5 – 1.4 – 2.6 = 1 m
04. (B) Convert ml to mℓ first (both in mℓ) : 280 + 880 = 1160 mℓ
Convert to liters : 1160 mℓ = 1.16 ℓ

05. (C) $\frac{6-5+4-3+2-1}{12} = \frac{12-9}{12} = \frac{3}{12} = \frac{1}{4}$
06. (B) The digits which are non-prime are 0, 1, 4, 6, 8, 9. However, the units digit of a prime cannot be 0, 4, 6 or 8. Therefore any two-digit primes which have both their digits non-prime have a units digit of 1 or 9. The only such primes are 11, 19, 41, 61 and 89. Hence there five such primes.

07. (A) Compute $123456789 \times 8 = 987654312$. Compare with 987654321 : digits 1 and 2 are swapped (last two positions). Sum : $1 + 2 = 3$.
"The units digit of 123456789×8 is 2 , since $9 \times 8 = 72$. So, the two digits which are in a different order are 1 and 2, whose sum is 3. $123456789 \times 8 = 987654312$.
08. (A) $\frac{1}{25} + 0.25 = 0.04 + 0.25 = 0.29$
09. (A) $28.5 \times 7 - 27 \times 3 - 29 \times 3 = 31.5^\circ\text{C}$
10. (B) $\frac{1}{8}$ is smaller than $\frac{1}{4}$, so it should be closer to 0. But on the number line $\frac{1}{8}$ is shown after $\frac{1}{4}$, which is incorrect.
11. (A) Total cost = Rs. 96
Cost per pencil = Rs. 8
Number of pencils
= Rs. 96 \div Rs. 8 = 12 pencils
12. (A) Original per box = $120 \div 8 = 15$
After adding 3 more to each $\rightarrow 15 + 3 = 18$ per box
Total = $8 \times 18 = 144$
But this says 144. Wait...
Actually, new apples added = $3 \times 8 = 24$
So total = $120 + 24 = 144$ apples
13. (C) $6:45 - 3 \text{ hr} = 3:45$
 $3:45 - 25 \text{ min} = 3:20 \text{ PM}$
14. (D) Actual product $456 \times 18 = 8208$, not 8108
15. (B) $4.5 \div 1.5 = 3$
16. (B) Days David took to save Rs. 63
Days = $63 \div 1.40 = 45$ days
Days David's brother has saved
David started 20 days earlier
Brother saved = $45 - 20 = 25$ days
Amount saved by brother
 $25 \times 2.20 = 55$
17. Delete
18. (B) 2.5 kg = 2500 g \rightarrow Equal weights
19. (C) 2 pens = Rs. 40, 3 notebooks = Rs.105
Total = Rs.145
Rs. 200 – Rs. 145 = Rs. 55
20. (A) $\frac{1}{2} \times \frac{1}{3} \times \frac{1}{4} \times \frac{1}{5} \times x = 2$
 $x = 240$
21. (D) $123123123123 \div 123 = 1001001001$
10 digits
22. (C) SI = $600 \times 5 \times 2100 = 60$
SI = $100600 \times 5 \times 2 = \text{Rs. } 60$
23. (D) Since there are 12 squares initially, then the number of squares to be removed is
 $\frac{1}{2} \times \frac{2}{3} \times 12 = \frac{1}{3} \times 12 = 4$
Therefore, there will be 8 squares remaining.
24. (C) 1 dozen = 12 \rightarrow 3 dozen = 36 mangoes
Total = $36 \times 7 = 252$
25. (B) 1 hr 20 min + 45 min = 2 hr 5 min
 $5:15 \text{ PM} + 2 \text{ hr } 5 \text{ min} = 7:20 \text{ PM}$
26. (B) Cost per pen = $50 \div 5 = 10$
Selling price = $60 \div 5 = 12$
Profit = $12 - 10 = \text{Rs. } 2$
27. (D) $0.19 = \frac{19}{100}$
28. (B) HCF (10, 30) = 10
LCM (15, 25) = 75 (lagent)
First common multiple of 9 & 12 = 36
Greatest prime factor of 35 = 7
29. (B) $95310 - 10359 = 84951$
30. (D) $50 \times 60 = 3000$ seconds
31. (A) Spending per day
= Rs. 15 + Rs. 20 = Rs. 35
Saving per day = Rs. 60 – Rs. 35 = Rs. 25
In 9 days = Rs. 25 \times 9 = Rs. 225

32. (A) Temperature of bat = 28°C
 $\approx 30^{\circ}\text{C}$ (Rounded to the nearest ten)
33. (A) Each piece = $2.5 \div 5 = 0.5\text{ m} = 50\text{ cm}$; gave 40 cm
 10 cm left + 4 pieces ($4 \times 50 = 200\text{ cm}$)
 Total left = $210\text{ cm} = 2.1\text{ m}$
34. (A) $12 \times 9 = 108\text{ cm}^2$
 $10 \times 7 = 70\text{ cm}^2$
 $108 - 70 = 38\text{ cm}^2$



35. (B)

REASONING

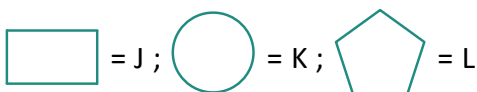
36. (B)



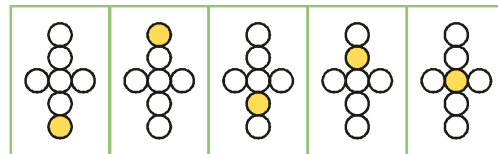
37. (C)



38. (C) Bobby ran \rightarrow slower than car
 Irving rode bike \rightarrow slower than car
 Dog \rightarrow slower than Bobby
39. (C) The sequence of words in a dictionary is pale, pie, pile, pillar, ply alphabetically. PLY comes last in the dictionary.
40. (B) After interchanging the digits,
 New number = 3867451092
 Hence, third digit from the right end = 0
41. (C) $7 - 3 = 4$
42. (B) Arrows in same direction (B)
 Arrows in opposite direction (A)

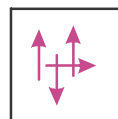


43. (D)



44. (D) Here, the letters given follows a pattern that is:-
 $D + 4 \rightarrow H + 4 \rightarrow L$
 $F + 4 \rightarrow J + 4 \rightarrow N$
 $K + 4 \rightarrow O + 4 \rightarrow S$
 But MPU does not follow this pattern
 (i.e., $M + 3 \rightarrow P + 5 \rightarrow U$)
 Hence, MPU is the answer.

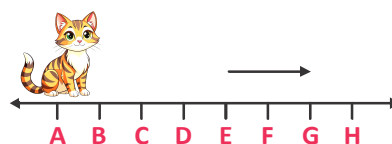
45. (A)



CRITICAL THINKING

46. (B) Bhanu & Priya face each other \rightarrow one sleeps on right ear, one on left ear \rightarrow 1 right ear
- Mary & Karan have backs towards each other \rightarrow one sleeps on right ear, one on left ear \rightarrow 1 right ear
- Total girls with right ear on pillow = $1 + 1 = 2$

47. (B)

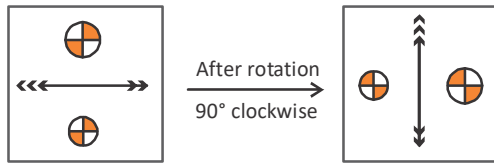


In 3 jumps kitten reaches to F.

48. (D) Arjun has 22 pairs of black gloves \rightarrow 44 black gloves, and 22 pairs of blue gloves \rightarrow 44 blue gloves.
 He wants at least one matching pair (same color).
 In the worst-case scenario, he could pick all 44 black gloves first \rightarrow still no blue gloves paired.
 The next glove he picks (the 45th glove) will guarantee a matching pair, because it must match either black or blue.
 Minimum gloves required = 45

49. (B) Since pencils are blue and some blue things are long, pencils may be long.

50. (D)



==== The End =====