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UNIFIED COUNCIL OLYMPIADS

UIMO
Unified International Mathematics Olympiad

UNIFIED INTERNATIONAL MATHEMATICS OLYMPIAD

CLASS - 4

Question Paper Code : 4O119

KEY

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

EXPLANATIONS

MATHEMATICS

01. (A) A 5-digit number whose reverse is 4 times itself is 21978, because $21978 \times 4 = 87912$, which is the reverse of 21978.

02. (B) All numbers from 4450 to 4549 is 4500 when rounded off to the nearest hundred 4549 is the greatest among the numbers.

03. (D) $\frac{657}{1000} = 0.657$

04. (C) $\frac{5}{4} = 1\frac{1}{4} > 1$

Others are all less than 1.

05. (A) April has 30 days.

Pages = 35 × 30 = 1,050

06. (B) Place 9 (the greatest digit) in the tens place and use the smallest other digits to keep the number minimal.

07. (A) 29 – 5 – 15 – 3 = 6

08. (C) Anil is 9 kg heavier than Ramu and 16 kg heavier than Chandu.

Difference between Ramu and Chandu

= 16 – 9 = 7 kg

Total extra weight over the lightest person

= 16 + 7 + 0 = 23 kg

Subtract 23 from total mass

146 – 23 = 123 kg

Divide by 3 to get Chandu's mass

123 ÷ 3 = 41 kg

Anil = 41 + 16 = 57 kg

09. (B) Quantity of water in the pail

= 5 l = 5000 ml

water used for plants = 1 l 385 ml

= 1385 ml

water used to wash dishes = 2 l 48 ml

= 2048 ml

Quantity of water left

= 5000 – (1385 + 2048) ml

= 1567 ml

= 1 l 567 ml

10. (C) Factors of 48 : 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

Only 7 does not divide 48

11. (B) Dividend = (Divisor × Quotient) + Remainder

= (7 × 134) + 2 = 938 + 2 = 940

12. (D) Divisible by 11 : 187, 253, 495, 132 → 4 numbers

13. (A) $\frac{1}{3}$ of 12 = 4 pieces

$\frac{1}{4}$ of 12 = 3 pieces

So, Amy ate 1 more piece.

14. (C) 4:45 → 6:10 = 1 hr 25 min

15. (D) Option (D) Rs. 85 × 2 + Rs. 20 = Rs. 190

Option (A) = Rs. 180

Option (B) = Rs. 90 + Rs. 80 = Rs. 170

Option (C) = Rs. 120 + Rs. 20 = Rs. 140

Max = Rs. 190, so (D) is best

16. (B) 3982 + 6853 = 10835, 35000 – 10835 = 24165

17. (D) Expanded form of 45010 is 40000 + 5000 + 0 + 10 + 0

18. (A) Consider the given model

There are two full grids. So, the whole number part is 2.

In the last grid, there are 10 parts out of which 8 are colored. So, the decimal part is eight tenths.

So, the part shaded in the model is two and eight tenths.

Now, let's write two and eight tenths as a decimal.

Ones	-	Tenths
2	-	8

Two and eight tenths is written as the decimal 2.8.

So, the decimal number illustrated by the given model is 2.8.

19. (B) Multiply

$$\frac{1}{2}\times\frac{3}{4}=\frac{(1\times3)}{(2\times4)}=\frac{3}{8}$$

20. (A) Total toys = 135 × 5 = 675

Good toys = 675 - 84 = 591

21. (A) Sum of story + science

= 1,285 + 896 = 2,181

Maths books = 3,245 – 2,181 = 1,064

22. (D) 60 × 60 × 24 × 7 = seconds in 7 days (1 week)

23. (B) Price per pen = Rs 2

Offer : Buy 4, get 1 free

Sarah bought 15 pens → How many she pays for ?

Step 1 : Count free pens

For every 4 bought, 1 is free → So, sets of 5 pens = 4 paid + 1 free

15 pens = 3 sets of 5 pens → each set pays for 4 pens → total paid pens = 3 × 4 = 12

Step 2 : Total cost = 12 × 2 = Rs 24

24. (B) Total time = 3 hours 10 minutes = 190 minutes

English = 50 min, Science = 1 hour 25 min = 85 min

Time for Maths = 190 – (50 + 85) = 190 – 135 = 55 min

25. (D) Factors of 12 : 1, 2, 3, 4, 6, 12

Factors of 18 : 1, 2, 3, 6, 9, 18

Common factors : 1, 2, 3, 6

Option not a common factor = 4

26. (A) 1296 ÷ 36 = 36

Each row has 36 plants.

27. (B) 3 l 600 ml = 3600 ml

3600 ÷ 300 = 12 cups

28. (D) Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 90

Multiples of 9 which are odd numbers

less than 72 = 9, 27, 45 & 63 are 4 odd numbers

29. (D) All shapes in the box have at least one right angle.

30. (B) Numbers not factors of 18 are 4, 12

31. (B) All are 10,000 except 10 hundreds (1,000)

32. (A) Hundred thousand place = 6 (in 620,000)

Next digit (ten thousand place) = 2 → less than 5 → round down

Rounded number = 7,600,000

33. (D) Length of a blue ribbon = 125 cm

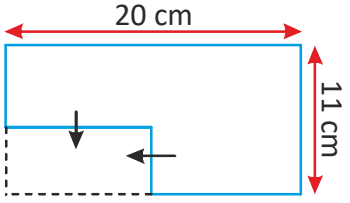
Length of red ribbon = 125 cm + 380 cm = 505 cm

Length of the pink ribbon = 505 cm + 98 cm = 603 cm

34. (A) Total cost = 225 × 2 = 450;

Return = 500 – 450 = Rs. 50

35. (C) 20 cm + 20 cm + 11 cm + 11 cm = 62 cm.

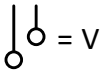


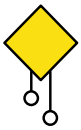
REASONING

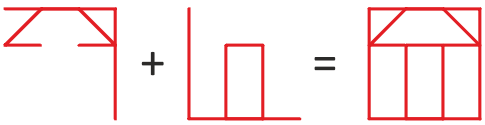
36. (B) 

37. (A) ACE → BDF (+1 each letter) → MOQ → NPR

38. (A) First letter represent shape

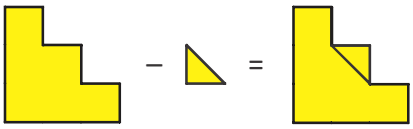
 = W ;  = V ;

 = YW

39. (C) 

40. (B) Given figures have vertical an horizontal symmetry (they can be bisected across, and up and down to make mirror images). In boxes A and C the shape is symmetrical in neither direction. In D it is symmetrical vertically. Only B works.

41. (A) The number arrows are decreasing by 1 and the dots in side the circle are increasing by, after each successive step.

42. (C) 

43. (B) Except option (B) remaining has similar figures.

44. (B) There are 24 rectangles in the given figure.

45. (A) Arrange the words in alphabetical order as in dictionary, we get sausage, savage, **save**, saviour, savour.

CRITICAL THINKING

46. (D) Children in Robert's row: 2 left + 1 (him) + 3 right = 6

Total rows : 2 front + 1 (his) + 1 behind = 4

Total children : 6 × 4 = 24

47. (C) Books may be white

Explanation (student-friendly):

- Since all books are paper, and
- only some papers are white,
- we cannot be sure that books are white, but it is possible.

So the safest and logically correct conclusion is "Books may be white."

Why the others are incorrect:

- A × Too strong — not all papers are white.
- B × Not guaranteed — books might or might not be among the white papers.
- D × No information says books are not white.

48. (B) Each friend's birthday satisfies Day + Month = 35.

List possible pairs : Month 4 → 31, 5 → 30, 6 → 29, … , 12 → 23.

April has only 30 days, so Month 4 → Day 31 is invalid.

Remaining 8 valid birthdays → maximum friends = 8

49. (D) Total 32 triangles are there in the given figure.

50. (C) 1 ; so that the total of each vertical line of numbers increases by one every time.

The End