UIM
Unified International Mathematics Olympiad

UNIFIED INTERNATIONAL MATHEMATICS OLYMPIAD (UPDATED)

CLASS - 4
Question Paper Code : UM9269

KEY

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

EXPLANATIONS

MATHEMATICS

01. (C)

Option (C) has 6 lines of symmetry.

02. (C) 225g + 175g + 200 g + 200g + 175g + 175g = 1.15 kg

So, no. of jars Rishi have = 6 jars.

03. (A) No. of boxes = 5

No. of marbles in each box = 19

No. of boxes given to his friends = 2

No. of marbles with Alekhya = 19 × 3 = 57

04. (A) Each division = 200 ml

water in the beaker = 1l 200 ml

If 125 ml is poured out from the beaker

= 1200 ml − 125 ml

= 1075 ml = 1l 75 ml

05. (D) There are no parallel lines in a triangle.

06. (D) Equivalent fraction of $\dfrac{2}{5} = \dfrac{2 \times 2}{5 \times 2} = \dfrac{4}{10}$

07. (B) No. of red pens = 22

No. of blue pens = 22 × 3 = 66

Total = 66 + 22 = 88 pens.

08. (C) 3 : 52

09. (B) No. of books bought by Rahul = 8

Amount paid to shopkeeper

= ₹50 + ₹50 = ₹100

Changed he received = ₹28

= ₹100 − ₹28 = ₹72

Cost of each book = ₹72 ÷ 8 = ₹9

10. (A) 740 cm + 17 cm

= 757 cm = 7 m 57 cm

11. (B) ₹3820 − ₹1132 = ₹2688 (Razak)

₹10473 − ₹3820 − ₹2688 = ₹3965

12. (B) $\dfrac{48}{60} = \dfrac{8}{10} = \dfrac{4}{5}$

13. (C) By 'guess and check' method

```
      5 5 5
  ×       3
  ---------
  1 6 6 5
```

14. (A) $1 - \dfrac{1}{10} - \dfrac{3}{5} = 1 - \dfrac{1}{10} - \dfrac{6}{10} = \dfrac{3}{10}$

15. (C) 2899 + 411 = 3310

3310 ≈ 3300

16. (C) Among $\dfrac{1}{2}, \dfrac{1}{3}, \dfrac{1}{4}$ and $\dfrac{1}{5}, \dfrac{1}{5}$ is the smallest value and $\dfrac{1}{4}$ is the second smallest value. Therefore, the sum of these two fractions will have the smallest value.

17. (D) Multiples of 9: ⑨, 18, ㉗, 36, ㊺, 54, ㊹(63), 72, ...

18. (C) Sum: 7456 + 647 = 8103

8103 + 9 = 900 R 3

Quotient: 900; Remainder: 3

```
          900
    9) 8 1 0 3
     − 8 1
       -----
         0 0
       −   0 0
       -------
           0 3
       −     0
       -------
             3
```

(Note: It is important to add a 'zero' indicated at the arrows, when you cannot divide)

19. (A) Multiples of 6: 6, 12, ⑱, 24, 30, ㊱, 42, 48, ㊴(54), 60, 66, ㊲(72), 78, ...

Multiples of 9: 9, ⑱, 27, ㊱, 45, ㊴(54), 63, ㊲(72), ...

72 = 70

The number is 72

20. (D) 128 × 14 = 1792

21. (C) CD and GH

22. (A) 1 *l* 345 m*l* + 8 *l* 875 m*l* = 9 *l* 1320 m*l*

= 10 *l* 321 m*l*

She used 10 *l* 321 m*l* of water in all

23. (C) 4 km 56 m − 3 km 187 m

= 3 km 1056 m − 3km 187 m

= 0 km 869 m

Piyush travelled 869 m further from her house to the shopping mall than Tarun

24. (B) 3 months → $67\,l$

1 month → $67\,l \div 3$

$$= 22\frac{1}{3}\,l$$

12 months → $22\frac{1}{3}\,l \times 12$

$$= \frac{67}{3}\,l \times 12 = 268\,l$$

25. (A) 416

```
  ¹3 6 0          ⁴5 ¹⁰0̷ ⁹¹³3
+   1 4 3        –    8 7
  ─────          ─────────
    5 0 3            4 1 6
```

Joy had 416 balloons at first

26. (B) [C] + 4 kg = [B]

This means [B] is heavier than [C] by 4 kg.

?

C : [   ] ⎤
               ⎬ 8 kg
B : [4 kg] ⎦
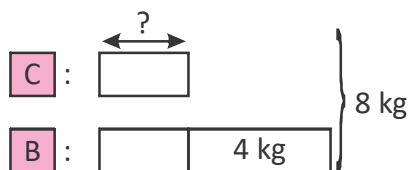
2 units ⟶ 8 – 4

Mass of $\xrightarrow{\text{= 4 kg}}$ 4 ÷ 2

= 2 kg

(You may also use guess and check to find the mass of C.)

27. (A) You have to observe and guess how the corner numbers have been arrived at.

1 + 2 = 3   3 × 3 = 9

2 + 4 = 6   6 × 6 = 36

3 + 5 = 8   8 × 8 = 64

4 + 5 = 9   9 × 9 = 81

The value of X is 81

28. (A) Multiples of 2: 2, 4, 6, ..., 10, 12, 14, ..., 20, 22, 24, ..., 30, 32, ...

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ...

Multiples of 5: 5, 10, 15, 20, 25, 30, ...

The first common multiple of 2, 3 and 5 is 30. Therefore, the least number of paper clips that can be shared equally among 2, 3 and 5 girls without any remainder is 30

29. (A)

```
  4 6  ⁷8̷ ¹1 8
– 1 4   6 6 3
─────────────
  3 2   1 5 5
```

30. (C)

②
② [14] ②
③

2 × 2 = 4
2 × 3 = 6
2 × 2 = 4
4 + 6 + 4 = 14

③
① [24] ⑤
②

3 × 1 = 3
3 × 2 = 6
3 × 5 = 15
3 + 6 + 15 = 24

④
① [?] ⑥
②

4 × 1 = 4
4 × 2 = 8
4 × 6 = 24
4 + 8 + 24 = 36

31. (A) 144 = 1 × 144   1 + 144 = 145

2 × 72   2 + 72 = 74

3 × 48   3 + 48 = 51

4 × 36   4 + 36 = 40
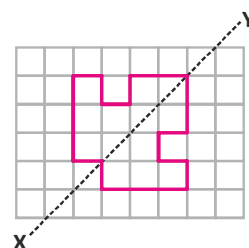
6 × 24   6 + 24 = 30
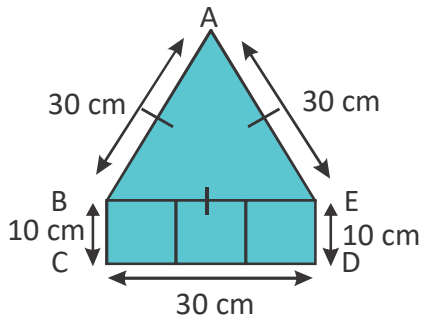
(8 × 18)   (8 + 18 = 26)

9 × 16   9 + 16 = 25

12 × 12   12 + 12 = 24

Summit's is 18 years old.

32. (A)

33. (B)

$30 \div 3 = 10$ cm

$30 + 30 + 10 + 30 + 10 = 110$ cm

34. (C) ₹98.26 − ₹32.60

= ₹97.126 − ₹32.60 = ₹65.66

₹65.66 − ₹27.88 = ₹64.166 − ₹27.88

= ₹37.78

₹98.26 − ₹32.60 = ₹27.88 + ₹37.78

35. (C) Perimeter of given figure is 16 cm
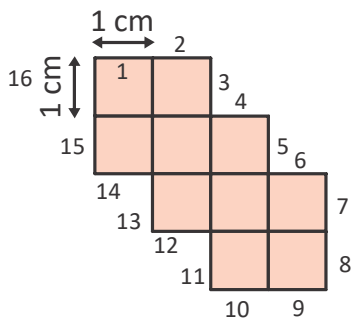
REASONING

36. (D) Each letter stands for an ascending numerical value, starting with one and ending with seven. Zero goes before One.

Zero **O**ne **T**wo **T**hree **F**our **F**ive **S**ix **S**even **E**ight

37. (D) Opportunity and chance are similar words. Remaining option have opposite words.

38. (C) Bottom shape becomes large shape and rotate 90°. The top two shapes interchange their position. Middle image in the final figure rotate 180°.

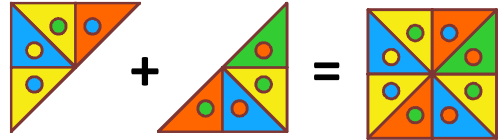**39.** (A) There are 12 cubes in the letter O.
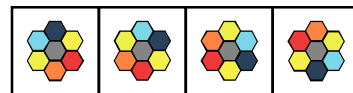
40. (B)

41. (A)

 = amin

42. (C)

43. (B)

All blue dots change to horizontal line, all white dots are unaffected

44. (D)

45. (A)

CRITICAL THINKING

46. (A)
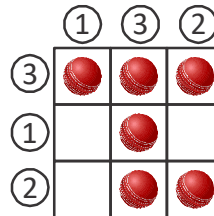
47. (B)

48. (C)

	Singing	Dancing	Playing Guitar
Rakesh	✔		
Pandu		✔	
Saranya			✔
Jim			✔
Sravan		✔	

49. (D) I feel thankful to him.

50. (A) At the end of the first ramp the ball will be moving vertically, and so will fall back down, eventually coming to rest at the lowest point (P).