



Unified International  
Mathematics Olympiad

**UNIFIED INTERNATIONAL MATHEMATICS OLYMPIAD (UPDATED)**

**CLASS - 4**

**Question Paper Code : UM9267**

**KEY**

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

**EXPLANATIONS**

**MATHEMATICS**

01. (C) Sum of 3 numbers = 156

Second number = 34

Third number = 77

First number – ?

$$= 156 - (34 + 77)$$

$$= 156 - 111 = 45$$

02. (C) Started time = 2 hrs 40 min

Stopped time = 4 hrs 55 min

$$\text{Duration} = 4 \text{ hrs } 55 \text{ min} - 2 \text{ hrs } 40 \text{ min}$$

$$= 4 \text{ hrs } 55 \text{ min} - 2 \text{ hrs } 40 \text{ min}$$

$$= 2 \text{ hrs } 15 \text{ min}$$

03. (A) No of chickens = 300

No. of ducks = 231

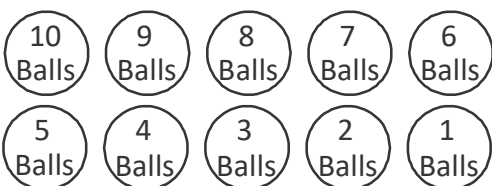
$$\text{No. of cows} = 231 + 18 = 249$$

Total no. of animals

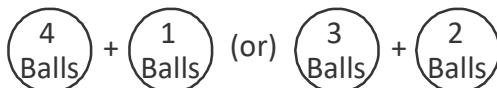
$$= 300 + 231 + 249 = 780$$

04. (A) Total no of paper clips = 200  
 No. of paper clips lost = 14  
 $= 200 - 14 = 186$   
 No. of people = 6  
 No. of paper clips each one will get  
 $= 186 \div 6 = 31$

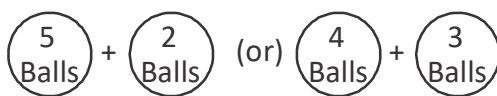
05. (A)  $345 \times 2 = 690$   
 No. of 3's in 690 is  $690 \div 3 = 230$

06. (B) 

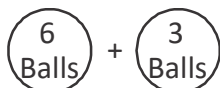
Aryan gets 5 marbles means



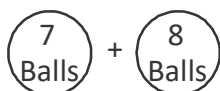
Bhuvan gets 7 marbles

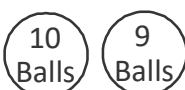


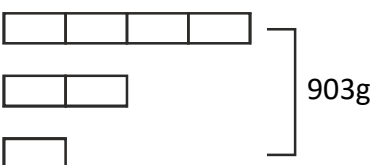
Charan gets 9 marbles



David gets 15 marbles



$\therefore$  Remaining bags are   
 are taken by Rishi

07. (A) 

Total number of parts : 7

7 parts  $\rightarrow 903$  g

1 part  $\rightarrow 903 \div 7 = 129$

$4 \times 129 = 5169$

The first bag is 516 g.

08. (A) Perimeter of P = 20 cm  
 Perimeter of Q = 18 cm  
 $P > Q$

09. (A)  $1 \text{ l} = 1000 \text{ ml}$   
 $1000 \text{ ml} - 400 \text{ ml} = 600 \text{ ml}$   
 $600 \div 3 = 200 \text{ ml}$

There is 200 ml of soya sauce in each of the smaller bottles.

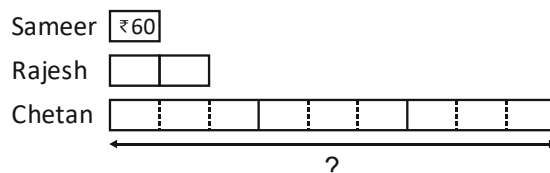
10. (B) Capacity of water in the jug = 3 l 250 ml  
 Capacity of water in the 1 glass = 950 ml  
 $3 \text{ glasses} = 950 \text{ ml} \times 3 = 2850 \text{ ml}$   
 Capacity of water left in the jug  
 $= 3250 \text{ ml} - 2850 \text{ ml}$   
 $= 400 \text{ ml}$

11. (B)  $N = 234 \times 9 + 8$   
 $= 2114$   
 $2114 \div 7 = 302 \text{ R } 0$   
 Quotient: 302; Remainder: 0

12. (D) Q, S

13. (B)  $\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$

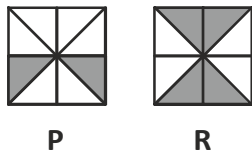
14. (C)  $\text{₹}60 \times 2 = \text{₹}120$  (Rajesh)  
 $\text{₹}120 + \text{₹}60 = \text{₹}180$   
 (Rajesh and Sameer)  
 $\text{₹}180 \times 3 = \text{₹}540$   
 Alternative solution:



1 unit  $\rightarrow \text{₹}60$

9 units  $\rightarrow \text{₹}60 \times 9 = \text{₹}540$

15. (B) 1 pot + 1 flask  $\rightarrow$  ₹69  
 2 pots + 1 flask  $\rightarrow$  ₹112  
 2 pots + 2 flasks  $\rightarrow$  ₹69  $\times$  2 = ₹138  
 1 flask  $\rightarrow$  ₹138 – ₹112 = ₹26  
 1 pot  $\rightarrow$  ₹69 – ₹26 = ₹43  
 4 pots  $\rightarrow$  ₹43  $\times$  4 = ₹172



16. (B)

17. (C) Shorter flag pole = 278 cm  
 Taller flag pole = 278 cm + 1 m  
 $= 278 \text{ cm} + 100 \text{ cm} = 378 \text{ cm}$

18. (B) Mass of three boxes = 107 kg  
 $C + B + A = 107 \text{ kg}$   
 $\text{Box C} + 3 \text{ Box C} + 3 \text{ Box C} - 5 \text{ kg} = 107 \text{ kg}$   
 $7 \text{ Box C} - 5 \text{ kg} = 107 \text{ kg}$   
 $7 \text{ Box C} = (107 + 5) \text{ kg}$   
 $7 \text{ Box C} = 112 \text{ kg}$

$$\text{Box C} = \frac{112}{7} \text{ kg} = 16 \text{ kg}$$

$$\begin{aligned} \text{Box A} &= 3 \text{ Box C} - 5 \text{ kg} \\ &= 3(16) \text{ kg} - 5 \text{ kg} \\ &= 48 \text{ kg} - 5 \text{ kg} = 43 \text{ kg} \end{aligned}$$

19. (A) Jaya started walking at 1 : 36 pm and reached bank after 29 minutes  
 $= 1 : 36 \text{ pm} + 29 \text{ min}$   
 $= 1 : 65 \text{ pm} = 2 : 05 \text{ pm}$   
 She left the bank at 3 : 10 pm  
 Duration of the time she spent in the bank  
 $= 3 : 10 - 2 : 05 = 1 : 05 = 1 \text{ h } 5 \text{ min}$

20. (B) 252 min = 5 h – ? min  
 $= 300 - 252 = 48 \text{ min}$

21. (B) 1 jacket + 6 helmets = ₹240  
 Cost of a jacket = 2 helmet  
 $2 \text{ helmets} + 6 \text{ helmets} = ₹240$   
 $8 \text{ helmets} = ₹240$   
 $1 \text{ helmet} = 240 \div 8 = ₹30$   
 Cost of 1 jacket = ₹30  $\times$  2 = ₹60  
 Cost of 5 jackets = ₹60  $\times$  50 = ₹300

22. (C) No. of glasses = 8

Capacity of juice left in the jug = 405 ml

Capacity of each glass = 400 ml

Capacity of 8 glasses

$$= 400 \text{ ml} \times 8 = 3200 \text{ ml}$$

Capacity of juice at first in the jug

$$= 3200 \text{ ml} + 405 \text{ ml}$$

$$= 3605 \text{ ml}$$

23. (D) Multiples of 7: 7, 14, 21, 28, 35, 42, 49, 56, (63), 70, 77, 84, 91, 98, 105, 112, 119, (126) ...

Multiples of 9: 9, 18, 27, 36, 45, 54, (63), 72, 81, 90, 99, 108, 117, (126) ...

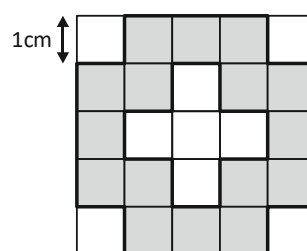
Since 126 is the largest common multiple of 7 and 9 and less than 150, the greatest possible number of stools in the warehouse is 126

24. (C) XLIV, XLVI, LXIV, LXVI = 44, 46, 64, 66

25. (D) Outer perimeter = 20 cm

Inner perimeter = 12 cm

$$20 + 12 = 32 \text{ cm}$$



26. (A) The time shows 7 : 10 a.m.

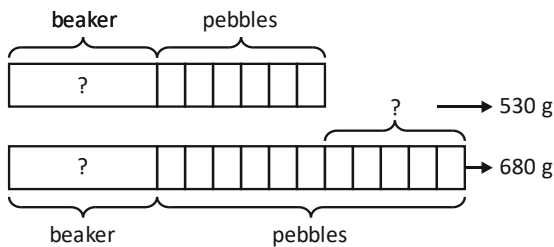
27. (D)  $5\frac{2}{3} = \frac{17 \times 6}{3 \times 6} = \frac{102}{18}$

28. (B) By 'guess and check' method,

Pencils	Erasers	Cost of Pencils	Cost of Erasers	Total Cost
10	10	$10 \times ₹6 = ₹60$	$10 \times ₹5 = ₹50$	$₹60 + ₹50 = ₹110$
20	20	$20 \times ₹6 = ₹120$	$20 \times ₹5 = ₹100$	$₹120 + ₹100 = ₹220$
18	18	$18 \times ₹6 = ₹108$	$18 \times ₹5 = ₹90$	$₹108 + ₹90 = ₹198$

Zoya bought 18 Erasers

29. (C)



$$5 \text{ units} \rightarrow 680 \text{ g} - 530 \text{ g} = 150 \text{ g}$$

$$1 \text{ unit} \rightarrow 150 \div 5 = 30 \text{ g}$$

$$6 \text{ units} \rightarrow 6 \times 30 = 180 \text{ g}$$

The mass of the beaker is 350 g

30. (B) Each interval is  $\frac{1}{8}$

$$4\frac{6}{8} = 4\frac{3}{4}$$

31. (D)  $\boxed{72} + 28 = 100$

$\boxed{72} - 63 = 9$

32. (A)  $10 - 7 = 3 \text{ m}$

$$\frac{180}{3} = 60$$

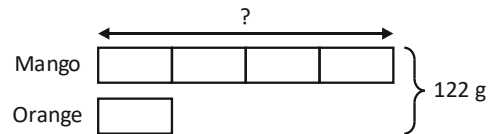
Preethi must run 60 times of 10 m before she can catch the kitten.

$$60 \times 10 = 600 \text{ m}$$

Preethi must run 600 m

33. (A) CD || AB

34. (C)



$$5 \text{ units} \rightarrow 122 \text{ g}$$

$$1 \text{ unit} \rightarrow 122 \text{ g} \div 5 = 24.4 \text{ g}$$

Man of the Mango

$$4 \text{ units} \rightarrow 24.4 \text{ g} \times 4 = 97.6 \text{ g}$$

35. (B)  $6 + 6 + 6 = 18$

$$6 \times 6 = 36$$

Then  = 6

### REASONING

36. (D) Each letter in the given series is multiplied with 2 to get the next letter in the series.

$$A * 2 = 1 * 2 = 2$$

And the 2<sup>nd</sup> letter is B.

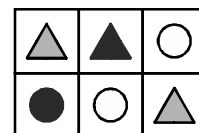
$$\text{Now, } B * 2 = 2 * 2 = 4$$

And the 4<sup>th</sup> letter is D.

$$\text{Similarly, } H * 2 = 8 * 2 = 16$$

And the 16<sup>th</sup> letter is P.

This is the correct option.



37. (B)

Except option (B), remaining options have pair of triangle & circle for every shade.

38. (D) 'Sand' is processed and turned into 'glass' just as 'trees' are processed to make 'paper'. A 'flower' grows from a 'seed', but there is no artificial

39. (C) Ten numbers from 0 to 9 are repeated. Count by 10, for example from the top zero.

You get 5 zeros.

You get 5 nines.

You get 5 twos.

There is also an additional "1".

So, there are 6 ones in the picture.

40. (C)

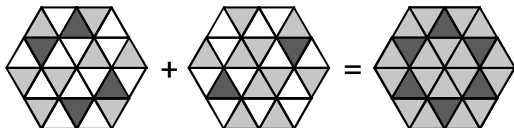


One shape is combined other two shapes in the given picture. So option(C) belongs to the given group.

41. (D)

In the given question indoor game is chess. Chess is called Hockey.

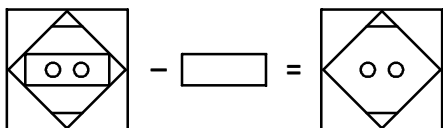
42. (B)



43. (B)

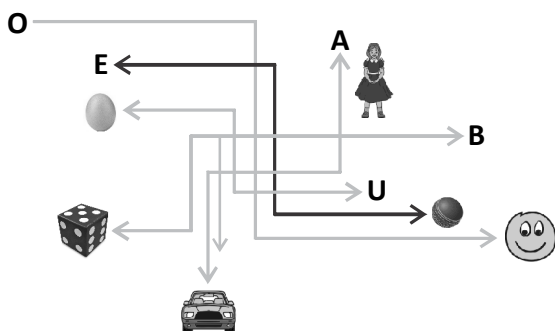
According to the question if 'C' gives same number of coins to A and B means 'C' gives either 1 or 2 coins each. If 'C' gives 1 coin, C has 3 coins but there is no option having a number 3. So, correct option (B).

44. (C)



45. (C)

Ball



## CRITICAL THINKING

46. (C)

Statement 1 says that day after tomorrow will be Tuesday, means today is Sunday.

Statement 2 says that I visited the park yesterday. If today is Sunday than yesterday is Saturday. Hence option (C) is correct.

47. (D)

12<sup>th</sup> house is placed in place of "D".

48. (B)

Because of the glasses, 5, 6 and 7 got a blocked connection. Now, since the connection to 3 is lower than that of 2, it will fill first while the remaining glasses will remain empty.

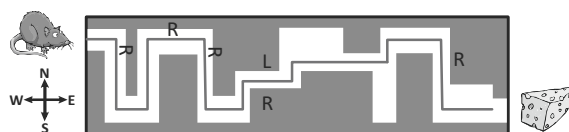
49. (A)

The key thing to realise is that the only pair of items that can be left together on their own is the wolf and the cabbage. Since the wolf does not eat cabbage.

- 1) Take the hare over
- 2) Return
- 3) Take the wolf over
- 4) Return with the hare
- 5) Take the cabbage over
- 6) Return
- 7) Take hare over

There are seven crossings, four forward and three back.

50. (A)



The End