



Unified International  
Mathematics Olympiad

**UNIFIED INTERNATIONAL MATHEMATICS OLYMPIAD (UPDATED)**

**CLASS - 5**

**Question Paper Code : UM9274**

**KEY**

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

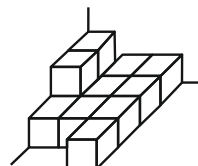
**EXPLANATIONS**

**MATHEMATICS**

01. (B) Initial temperature on Sunday =  $34^{\circ}\text{C}$   
 Total fall in temperature by 2:00 a.m. on Monday =  $9^{\circ}\text{C} + 3^{\circ}\text{C} = 12^{\circ}\text{C}$   
 The temperature at 2:00 a.m. on Monday =  $34^{\circ}\text{C} - 12^{\circ}\text{C} = 22^{\circ}\text{C}$   
 The temperature rose by  $8^{\circ}\text{C}$  by 8:00 a.m. on Monday.  
 $\therefore$  Final temperature at 8:00 a.m. on Monday. =  $22^{\circ}\text{C} + 8^{\circ}\text{C} = 30^{\circ}\text{C}$

02. (D)  $30\%$  of a number = 24  
 $1\frac{1}{2}$  times the number  
 =  $150\%$  of the number  
 $= \frac{24}{30} \times 150 = 120$
03. (D) Right angle measures =  $90$   
 4 right angle =  $4 \times 90$   
 =  $360^{\circ}$  is a complete angle

04. (C) Area of square =  $4 \times \text{shaded area}$   
 $= 4 \times 16 \text{ cm}^2$   
side  $\times$  side =  $64 \text{ cm}^2 = 8 \text{ cm} \times 8 \text{ cm}$   
side = 8 cm  
perimeter =  $4s = 4 \times 8 \text{ cm} = 32 \text{ cm}$
05. (C) Every hour temperature drops by  $2^\circ\text{C}$ .  
To reach  $28^\circ\text{C}$  from  $40^\circ\text{C}$ , a drop of  $40^\circ\text{C} - 8^\circ\text{C}$  is needed.  
Hours taken =  $12^\circ\text{C} \div 2^\circ\text{C}/\text{hour} = 6 \text{ hours}$
06. (B) Speed of bicycle =  $45 \text{ km} \div 3 \text{ hours}$   
 $= 15 \text{ km/h}$ . Distance covered in 5 hours  
 $= 15 \text{ km/h} \times 5 \text{ hours} = 75 \text{ km}$
07. (C)  $\text{SI} = ₹ 4,000 \times 6/100 \times 1 = ₹ 240$
08. (B) Profit per chocolate  
 $= ₹ 12 - ₹ 10 = ₹ 2$   
Total profit for 50 chocolates  
 $= 50 \times ₹ 2 = ₹ 100$
09. (B)  $300 \times [100 - (28 + 54)]\%$   
 $= 300 \times \frac{18}{100} = 54$
10. (C) If 5 parts represent 20 mangoes, then one part represents  $20 \div 5 = 4$ . For bananas, 3 parts represent  $4 \times 3 = 12$  bananas.
11. (D) Trillion > Billions > Millions > Thousands > Hundred.
12. (B) Their sum of the reciprocals =  
 $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{6} = \frac{12}{6} = 2$
13. (B) 120 cubic units  
Since the two cuboids are identical, the volume of the larger cuboid would be twice the volume of one cuboid.  $2 \times 60$  cubic units = 120 cubic units.
14. (A) Half a circle is  $180^\circ$ . As established, the hour hand moves  $180^\circ$  from 10 to 4, which is half a circle.
15. (C)  $X = \text{YYYY}$  ;  $\text{YY} = 5 \text{ litres}$   
 $X = 10 \text{ litres}$  ;  $\text{XX} = 20 \text{ litres}$
16. (B)  $250 \text{ cm} \div 50 \text{ cm} = 5$
17. (C) The family consumes 3 litres of milk every day. In 18 days, the family will consume  $3 \times 18 = 54$  litres.
18. (D) To find the duration, subtract the starting time from the ending time:  $5:30 \text{ p.m.} - 3:45 \text{ p.m.} = 1 \text{ hour and } 45 \text{ minutes}$ , which is equivalent to 105 minutes.
19. (B) 30 thousands = 30 000  
1 million = 1 000 000  
 $1\ 000\ 000 - 30\ 000 = 970\ 000$   
 $= 9700 \text{ hundreds}$
20. (D) Ex :  $12 + 21 = 33$  is divisible by 11  
 $53 + 35 = 88$  is divisible by 11  
 $41 + 14 = 55$  is divisible by 11
21. (A) Division of the numbers will give the smallest number.
22. (A) 0.7634 m
23. (B) Amount of petrol used on Tuesday  
 $= 19.083 \div 2$   
 $= 9.5415 \text{ l}$   
Amount of petrol left  
 $= 43.8 - 19.083 - 9.5415$   
 $= 15.1755 \text{ l}$   
 $= 15.18 \text{ l}$  (2 dec. places)
24. (A)  $18 \times 5 = 90 \text{ kg}$   
 $615 \text{ g} \times 5 = 3075 \text{ g}$   
 $= 93 \text{ kg } 75 \text{ g}$
25. (D)  $\frac{2}{15} + \frac{4}{15} + \frac{5}{15} = \frac{2+4+5}{15} = \frac{11}{15}$   
 $\Rightarrow \frac{2}{15} + \frac{8}{15} + \frac{1}{15} = \frac{11}{15}$
26. (B) HCF of 120, 144 & 216 is 24
27. (B)



28. (A) 6

29. (B)  $18 \times \frac{18}{3} \times h = 864$

$$h = \frac{864 \times 3}{18 \times 18}$$

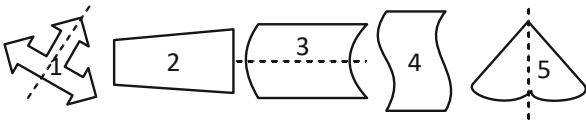
$$h = 8 \text{ cm}$$

30. (C) 39 cm

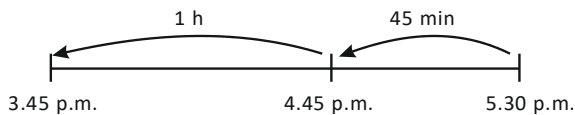
31. (A) 5.01 kg

32. (B)  $495\,213 \approx 500\,000$

33. (B)



34. (C)  $17 : 30 = 5:30 \text{ p.m.}$



Time her art class started = 3:45 p.m.

35. (C) Multiples of 4: 32, 36, 40, 44, 48, 52, 56, 60, 64, 68 and 72.

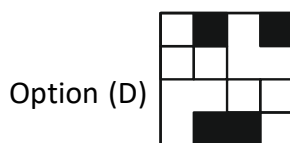
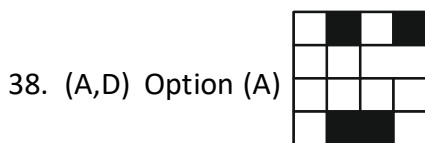
Multiples of 6: 36, 42, 48, 54, 60, 66

Common multiples of 4 and 6 that are between 30 and 70: 36, 48, 60

### REASONING

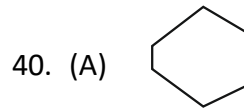


37. (C) DW



39 (C)

$$6 \xrightarrow{(6 \times 2) + 1} 13 \xrightarrow{(13 \times 2) - 1} 25 \xrightarrow{(25 \times 2) + 1} 51$$
$$\xrightarrow{(51 \times 2) - 1} 101 \xrightarrow{(101 \times 2) + 1} 203$$



41. (C) It is clearly seen that in (A) AZ, (B) BY & (D) EV, the sum of position of letters is 27.

'A' - position 1, 'Z' - position 26.

$$\text{Sum of position of letters 'A' and 'Z'} \\ = 1 + 26 = 27$$

'B' - position 2, 'Y' - position 25.

$$\text{Sum of position of letters 'B' and 'Y'} \\ = 2 + 25 = 27$$

'E' - position 5, 'V' - position 22

$$\text{Sum of position of letters 'E' and 'V'} \\ = 5 + 22 = 27$$

But

'C' - position 3, 'W' - position 23

$$\text{Sum of position of letters 'C' and 'W'} = 3 \\ + 23 = 26.$$

So answer is (C).

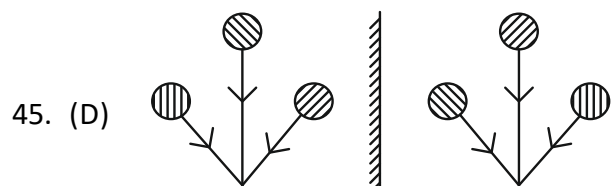
42. (B)  $46 - 12 + 1 = 35$

43. (C)  $2^2 \xrightarrow{+2} 5^2 \xrightarrow{+2} 8^2 = 64$

$$3^2 \xrightarrow{+2} 6^2 \xrightarrow{+2} 9^2$$

$$4^2 \xrightarrow{+2} 7^2 \xrightarrow{+2} 10^2$$

44. (C) STAR, MADAM, MALAYALAM words can be formed.



### CRITICAL THINKING

46. (D) From the given conditions it is clear that there are at least 3 animals in the farm. Let us assume that there are 4 animals in the farm, say, 2 hens, 1 cow and 1 pig. Then it opposes the statement that all except 2 animals were cows, because there are more than 2 animals except cows in the farm.

Same is the case when we replace the 2 hens with 2 cows or 2 pigs. Either of the 2 cases would contradict some of the given three conditions.

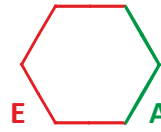
Even if we consider that there are more than 4 animals then also by considering any number of pigs, hens or cows, one of the statements would be contradicted. Hence the only option left is that there are 3 animals in the farm: 1 cow, 1 hen and 1 pig.

Now all except two animals were cows, which is 1 hen and 1 pig. Same is the case for the other two statements as well. Hence the correct answer is option (D).

47. (D) There are more than 8 alphabets in the given image. The alphabets are I, L, M, N, T, V, W, X, Y, Z.

48. (D) Ball A will keep moving forward.

49. (D)



50. (C) Stand up for the person if it's safe or tell a trusted adult.

Helping someone in need and standing against bullying is the right thing to do. If direct intervention isn't safe, informing a trusted adult can help address the situation.

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*The End*  
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