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UNIFIED COUNCIL OLYMPIADS

UIMO
Unified International Mathematics Olympiad

UNIFIED INTERNATIONAL MATHEMATICS OLYMPIAD

CLASS - 3

Question Paper Code : 4P114

KEY

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

EXPLANATIONS

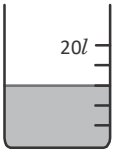
MATHEMATICS

01. (B) 60 + 60 + 60 = 180 seconds → 3 minutes

02. (A) 6 shirts × Rs. 200 = Rs. 1200

Cashback for 6 shirts = 2 × 100 = Rs. 200

Rs. 1200 - Rs. 200 = Rs. 1000

03. (D) 

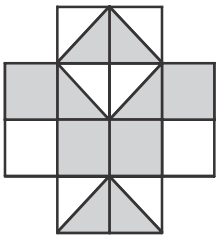
= 12 l of volume of filled

04. (C) 14 × 5 = 70

4 + 5 = 9

05. (A) 200 × 3 = 600

The length of the longer piece is 600 cm.

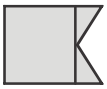
06. (B)  = $\frac{7}{12}$

07. (D) Tens place: 4 choices (1,2,3,4)

Ones place: 3 choices (remaining digits)

Total numbers: 4 × 3 = 12

08. (D) 9 hundreds + 12 tens = 1020

09. (A)  consists of two triangles and one square

10. (B) Note that Arya did not finish 10 min before sunil. Arya took 10 min less than the time taken by sunil.

2.40 p.m. → 4.40 → 5.05 p.m.

2 h 25 min – 10 min = 2 h 15 min

2.55 p.m. → 4.55 → 5.10 p.m.

11. (C) Pavan's jumps increase by 8 each day.

Day 1: 10 jumps

Day 2: 10 + 8 = 18 jumps

Day 3: 18 + 8 = 26 jumps

Day 4: 26 + 8 = 34 jumps

Day 5: 34 + 8 = 42 jumps

Day 6: 42 + 8 = 50 jumps

Day 7: 50 + 8 = 58 jumps

Day 8: 58 + 8 = 66 jumps

Day 9: 66 + 8 = 74 jumps

Day 10: 74 + 8 = 82 jumps

Day 11: 82 + 8 = 90 jumps

Day 12: 90 + 8 = 98 jumps

Day 13: 98 + 8 = 106 jumps

12. (B) Put 3 after the tens place → 20236, which is the smallest number.

13. (A) 1 marble = 15 g → 30 marbles = 450 g → 650 – 450 = 200 g (box weight)

14. (B) Leap year happens every 4 years → next Feb 29 after 1984 is 1992

15. (D) 56365 is a palindrome.

3 is half of 6

5 + 6 + 3 = 14

6 + 3 + 6 = 15.

16. (C) 84 ÷ 7 = 12, 96 ÷ 8 = 12, 75 ÷ 5 = 15, and 81 ÷ 9 = 9.

So, 75 ÷ 5 gives the greatest quotient.

17. (D) From 12 pm to 2 am = 14 hours.

Clock loses 5 minutes each hour → 14 × 5 = 70 minutes.

2 : 00 am – 70 minutes = 12:50 am.

18. (A)

 = 819 ÷ 7 = 117

 =  ÷ 9 = 117 ÷ 9 = **13**

19. (C) A = 22

B = 35

35 – 22 = 13

20. (C) The perimeter of the inner track is less than the outer track. Hence, the distance covered by Sidhu would be greater than the distance covered by Seema.

21. (A) Start difference = 37 – 23 = 14

Daily difference reduced = 5 – 3 = 2

14 ÷ 2 = 7 days

22. (D) 985 × 8 = 7880

Also 7880 = 7000 + 800 + 80

23. (B) Hari: 3 kites in 20 min → in 120 min = 18 kites

Varun: 4 kites in 30 min → in 120 min = 16 kites

Total kites = 18 + 16 = 34

24. (D) Rs. 387 = 9 dollars

So, 1 dollar = Rs. 43

Rs. 516 ÷ 43 = 12

25. (D) $\frac{18}{24} = \frac{3}{?}$

$? = \frac{24 \times 3}{18} = 4$

26. (B) First, let's identify what numbers multiplied by 3 give single digit ODD numbers (since the ones place has to be ODD and has to be 3 times the tens place.)

1 × 3 = 3. So, 13 is one such number where the ones place is 3 times the tens place.

2 × 3 gives an even number so this cannot be used.

3 × 3 = 9. So, 39 is one such number where the ones place is 3 times the tens place.

There is no other such number as after 3 × 3, all numbers are double digit (4 × 3 = 12, 5 × 3 = 15 and so on) and so do not fall within the given condition.

27. (B) Original product = 864

If both numbers are doubled, the product becomes

2 × 2 = 4 times bigger

So, new product = 864 × 4 = 3456

28. (C) Sequence becomes:

1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987

Missing numbers are from 8 to 377.

Odd numbers among them:

13, 21, 55, 89, 233, 377 → 6 odd numbers

29. (C)

$$\begin{array}{r} 48 \\ \times\ 12 \\ \hline 96 \\ +\ 480 \\ \hline 576 \end{array}$$

30. (A) 14 × 19 = 266

31. (A) To decrease the number 38726 by 200, we subtract 200 to get 38526. The only digit that changes is the hundreds digit, which goes from 7 to 5. Therefore, the correct method is to replace 7 by 5.

32. (B) 60 × 24 = 1440

33. (B) Let the number be x

$3x = 27 \rightarrow x = 27 \div 3 = 9$

$5x = 5 \times 9 = 45$

34. (C) The pattern is formed by adding consecutive even numbers:

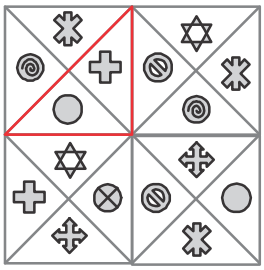
- 2 + 4 = 6
- 6 + 6 = 12
- 12 + 8 = 20
- 20 + 10 = 30
- 30 + 12 = 42

So, the 6th number is 42.

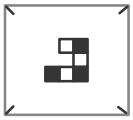
35. (C) Square corners look like an "L".

Option C has a corner that looks like the "L" of a square.

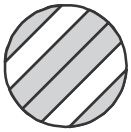
REASONING

36. (B) 

37. (B) It is a sequence comprising AA1Z. This sequence keeps on repeating and the first two letters are replaced by the letter that comes next in the English alphabet and the numbers are 2,4,6,8 etc...

38. (C) 

39. (C) 

40. (D) 

41. (C) (C) A, I, T are come twice in INTERNATIONAL.

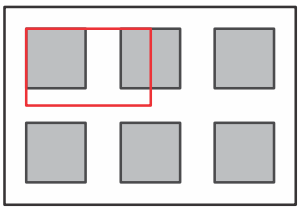
'T' do not come even once in ISLAND.

42. (C) In the word kite [option C] there is a letter 'i' that is not in the given word breakfast.

43. (A) Apples → Fruits → Grow on trees

Therefore, apples also grow on trees.

44. (B)



45. (A) The given shape belongs to Option A because it is similar to a cube.

CRITICAL THINKING

46. (B) Arun, Bhuvan, Charan, and Dhruv all imply that today is Thursday. Esha's statement that today is Monday contradicts this. Since only one person is wrong, Esha is the one who is wrong.

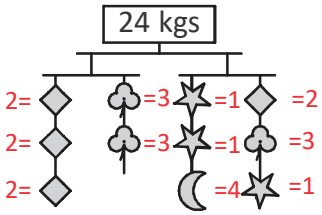
47. (A) Stack = 3 × 3 × 2 (9 cubes/layer).

Horizontal band wraps middle → touches all top cubes.

Vertical band touches 1 full column (2 cubes) + 1 extra on bottom → 3 bottom cubes touched.

Bottom layer has 6 untouched cubes.

48. (D)



49. (A)

50. (A) 19 + 6 +2 +1 = 28

Total '28' sweets that he can get from the shop.

THE END