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UNIFIED COUNCIL OLYMPIADS

UIMO
Unified International Mathematics Olympiad

UNIFIED INTERNATIONAL MATHEMATICS OLYMPIAD

CLASS - 4

Question Paper Code : UM9264

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EXPLANATIONS

MATHEMATICS

01. (A) Fraction of circle painted white

$= 1 - \frac{7}{12} = \frac{5}{12}$

$\frac{5}{12}$ of the circle was painted white.

02. (D) Given mass of packet flour = 600 g

Mass of packets of flour and sugar

= 1 kg 250 g = 1250 g

Mass of sugar = 1250 g – 600 g = 650 g

Mass of 2 packets of sugar

= 650 g × 2 = 1300 g

03. (B) Weight of white pig + weight of black big = 320 kg

Weight of white pig + 32 + weight of white pig = 320 kg

2(Weight of white pig) + 32 = 320 kg

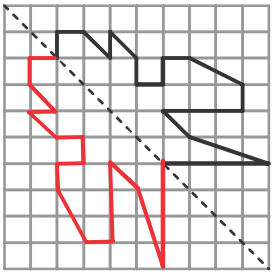
2(Weight of white pig)

= 320 kg – 32 kg = 288 kg

Weight of white pig = $\frac{288}{2}$ = 144 kg

∴ White pig weight = 144 kg

04. (B)



05. (A) Duration of sleep in a day

= 10 p.m to 6 a.m

= 8 hours

1 week = 7 days

= 7 × 8 hours = 56 hours

= 56 × 60 minutes

= 3360 minutes

06. (C) 4 × 4 + 4 + 4 + 4 + 4 + 4 + 4

= 16 + 24 = 40

07. (B) Given numbers = 4, 6, 10, 18

From the given numbers, each number is two less than twice the previous number

6 – 4 = 2

08. (B) No. of people in a stadium = 8763

No. of adults = 7034

No. of children = 8763 – 7034 = 1729

No. of adult left = 7034 – 1456 = 5578

No. of children left = 1729 – 363 = 1366

No. of children left in the stadium = 1366

09. (C) 5460 ÷ 5 ☐ 273 × 4

1092 Equal to 1092

10. (D) 1 bus = 30 children and 4 adults

9 buses = 34 × 9 = 306

11. (C) Mrs. Nitin's daughters age

= 9 years 6 months

Mrs. Nitin's age = (9 years 6 months) × 3

= 27 years 18 months

= 28 years 6 months

12. (D) No. of rupee coins in 50 rupee note

= 50 ÷ 2 = 25 coins

13. (A) Perimeter of figure P = 16 cm

Perimeter of figure Q = 12 cm

= 16 – 12 = 4 cm

Figure P is 4 cm longer than figure Q.

14. (D) 4 m 50 cm – 3m 54 cm = 96 cm

94 ÷ 4 = 24 cm

15. (B) $2l$ = 2000 ml

2000 – 1050 = 950

950 ÷ 2 = 475 ml

There is 475 ml of milk in each jug.

16. (C) 10 min

4.25 → 4.35

The show begin at 4.25

30 min

3.30 → 4.00

25 min

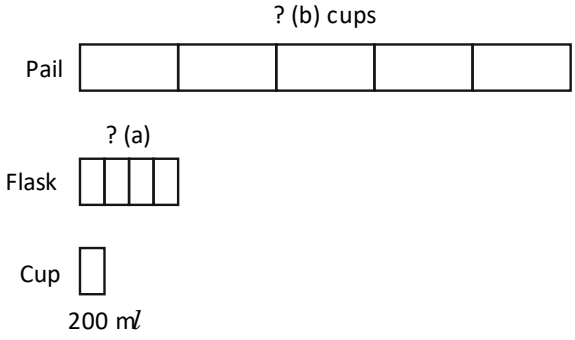
4.00 → 4.25

30 min + 25 min = 55 min

She took 55 min to reach the cinema

17. (B) $1-\frac{1}{9}-\frac{19}{27}=\frac{27}{27}-\frac{3}{27}-\frac{19}{27}=\frac{5}{27}$

18. (C)



Capacity of a flask = 200 × 4 = 800 ml

Capacity of pail = 800 × 5 = 4000 ml = 4 l

A pail can hold 4l of water

19. (B) No. of red pencils = 352

No. of blue pencils = 297

Total no. of pencils = 352 + 297 = 649

Cost of 1 pencil = ₹2

Cost of 649 pencils = 649 × ₹2 = ₹1298

Amount left with Chitra = ₹32

Amount with Chitra at first

= ₹1298 + ₹32 = ₹1330

20. (B) $\frac{1}{2} = \frac{4}{8}$

Only $\frac{1}{8}$ is less than $\frac{4}{8}$

$\therefore$ $\frac{1}{8}$ is smaller than $\frac{1}{2}$

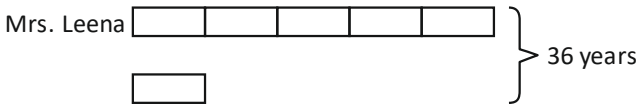
21. (C) Perimeter of the rectangle

= 13 + 5 + 13 + 5

= 36 cm

22. (B) 46 – 5 – 5 = 36

The sum of their present ages is 36 years.



6 units $\rightarrow$ 36 years

1 unit $\rightarrow$ x years + 6 = 6 years

5 units $\rightarrow$ 5 × 6 years = 30 years

Mrs. Leena's present age is 30

23. (A) Dividend = Divisor × Quotient + Remainder

= 9 × 79 + 3 = 711 + 3 = 714

24. (B) 1 kg 250 g – 300 g = 1250 g – 300 g = 950

The mass of the items in the box is 950 g.

25. (A) 1st minute it climbed = 42 cm

2nd minute it climbed = 55 cm

3rd minute it climbs = ?

Height of the wall = 168 cm

= 168 – (42 + 55)

= 168 – 97 = 71 cm

In 3rd minute the ant has to climb 71 cm to reach the top.

26. (C) Factors of 72: 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72

Sum is 30: 6 and 24, 12 and 18

24 × 6 = 144, 18 × 12 = 216

Since the product of the 2 factors is given to be 216, the 2 factors should be 12 and 18

27. (D) The greatest number formed is DCLX = 660 and the least is CDXL = 440

Difference = 660 – 440 = 220 = CCXX

28. (D) Smallest 6-digit number from the given options and 1 in the thousands place = 201345

29. (B) i) 3 is a factor of 32. (✗)

ii) 20 & 32 have 3 common factors (✓)

20 = (1, 2, 4) 5, 10, 20

32 = (1, 2, 4), 8, 6, 32

iii) 63 has only 2 factors other than 1 (✗)

63 = 1, 3, 7, 9, 21 and 63

iv) 7 is a factor of 46 (✗)

30. (C) $2\frac{5}{6} = \frac{12+5}{6} = \frac{17}{6}$

31. (D) 9:45 pm into 24-hour clock = 21:45

32. (A) 5 bags = ₹2240

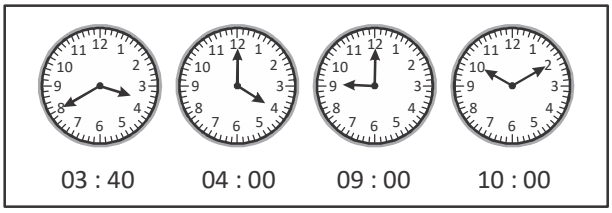
Costs of 1 bag = ₹2240 ÷ 5

= ₹448

Cost of 9 bags = ₹448 × 9

= ₹4032

33. (C) The hands of clock intersect at right angles when the time is 9 : 00 am



34. (B) Total no. of stamps with John = 1500

No. of stamps given to his friend = 250

No. of stamps lost = 500

No. of stamps left

$= \frac{500+250}{1500} = \frac{750}{1500} = \frac{1}{2}$

35. (A) 1 kg 236 g = 1236 g

1236 g ÷ 3 = 412 g (mass of 1 box of cornflakes)

412 g × 2 = 824 g (mass of 1 can of baked beans)

824 g × 3 = 2472 g = 2 kg 472 g.

REASONING

36. (C) GHHJJ**AS**HHDSSA**AS**JSD**AS**

37. (C) Shape rotating 90° anticlockwise as you move down the columns.

38. (D) Option A has all different shapes. In option B, shaded square is smaller than unshaded square. In option C, two shaded part are there. In option D, shaded and unshaded part are equal in size.

39. (D) 11 → Eleven

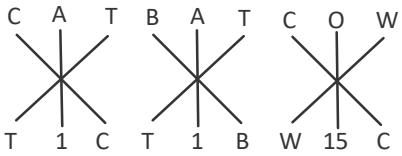
16 → Sixteen

20 → Twenty

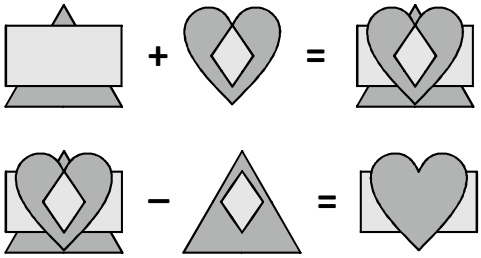
60 → Sixty

60 has minimum number of letters

40. (B)



41. (C)



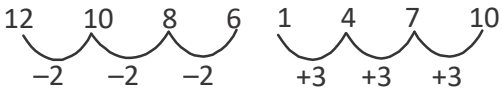
42. (C) WRITER → WRTRIE

MONKEY → MNKYOE

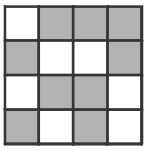
FOREST → FRSTOE

The coded words are written by consonants followed by vowels in the same order.

43. (B)



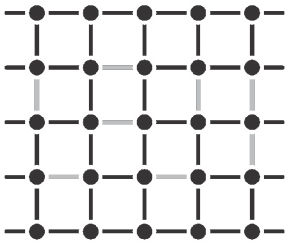
44. (D)



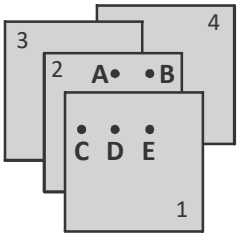
45. (D) The rectangle is in front of the Hexagon.

CRITICAL THINKING

46. (C) We fulfil the task if we close 8 road segments in the centre of the city.



47. (B)



Numbering papers from top to bottom 1,2,3,4 respectively

If we punched at point A, 1st paper is missing

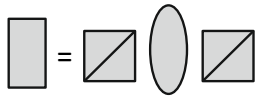
If we punched at point B, 1st paper is missing

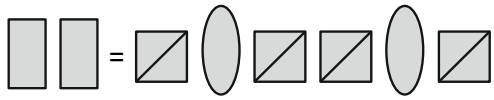
If we punched at point C, 4th paper is missing

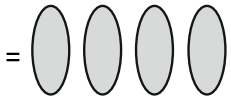
If we punched at point D, it covers all papers

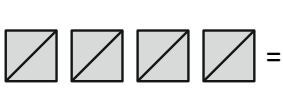
If we punched at point E, 3rd paper is missing.

48. (D) I will inform railway police on the next station.

49. (B) 







50. (D) According to the given statements the order of 3 memebers is

Sita → Jaya → Lasya (Ram may occupy first and fourth postions)

Hence, Jaya is not definitely in 1st and 4th position in line.

The End