Unified International Mathematics Olympiad

UIMO SAMPLE QUESTIONS

CLASS - 05

MATHEMATICS

01. **The total cost of a bag and a T-shirt is ₹ 200, Dinesh buys 4 bags and 2 T-shirts for ₹ 650. How much does a T-shirt and 2 bags cost ?**

(A) ₹ 355 (B) ₹ 350 (C) ₹ 305 (D) ₹ 352

02. **On a farm, the number of chickens to the number of cows was in the ratio 5 : 3. The ratio became 3 : 2 after 300 chickens were sold, How many more chickens than cows were there at first ?**

(A) 1200 (B) 1300 (C) 1400 (D) 1500

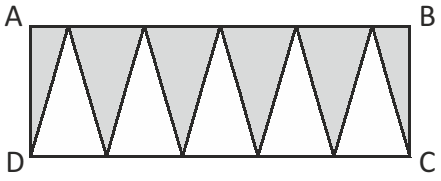
03. **In a Mathematics test, Sunil scored 0.6 of what Manish scored and Manish max scored 0.7 of what Dinesh scored. If Manish scored 70 marks, how many more marks did Dinesh score than Sunil**

(A) 58 (B) 48 (C) 68 (D) 78

04. **240 girls and 560 boys took part in a national art competition. What percentage of the participants were girls ?**

(A) 35% (B) 30% (C) 32% (D) 28%

05. **The perimeter of a rectangle ABCD is 280 cm. The base of two triangles equals the length of AD. What is the area of the shaded parts of rectangle ABCD ?**



(A) 200 cm^2 (B) 2200 cm^2 (C) 2002 cm^2 (D) 2000 cm^2

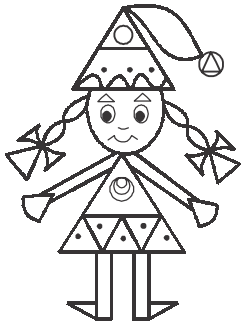
REASONING

01. **If the letters of each of the following words are reversed, how many meaningful words are formed ?**

RATS, DIET, MADAM, MALAYALAM, REST

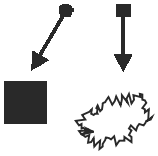
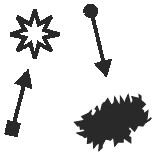
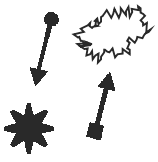
(A) 1 (B) 2 (C) 3 (D) 4

02. **How many triangles are there in the given figure ?**

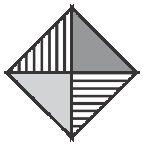
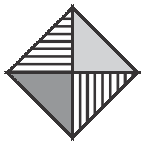


(A) 15 (B) 14 (C) 12 (D) 16

03. **Find the odd one out.**

(A)  (B)  (C)  (D) 

04. **What is the mirror image of the given figure ?**

(A)  (B)  (C)  (D) 

05. **In which figure is the shape**  **hidden ?**

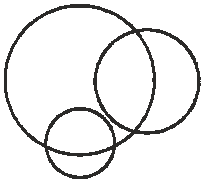
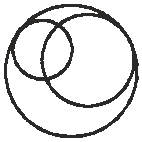
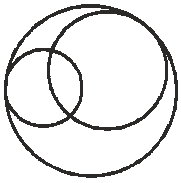
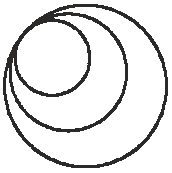
(A)  (B)  (C)  (D) 

CRITICAL THINKING

46 **Tarun has 5 keys and 5 locks, but 1 key can only open 1 lock. What is the maximum number of trials. Tarun has to make to match all the keys and the locks.**

(A) 10 (B) 15 (C) 5 (D) 20

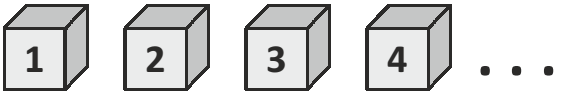
47 **Which picture has symmetry ?**

(A)  (B)  (C)  (D) 

48 **There are 20 questions in a mathematics quiz. For each correct answer 5 marks will be given, 2 marks will be deducted for a wrong answer. How many questions does Andy answer wrongly if he scores 72 marks for that mathematics quiz ?**

(A) 5 (B) 4 (C) 3 (D) 6

49 **There are 40 blocks with numbers from 1 to 40 laid out in order. How many times does the digit 3 appear ?**



(A) 10 (B) 11 (C) 14 (D) 13

50 **How many numbers are there in the English language that are spelt with the same number of letters as the number itself ?**

(A) 3 (B) 0 (C) 2 (D) 1

KEY & SOLUTION

MATHEMATICS

01. **(A)** Cost of 1 bag + 1 T-shirt = ₹ 200

Cost of 4 bags + 2 T-shirts = ₹ 650

Cost of 4 bags + 4 T-shirts = 4 × ₹ 200 = ₹ 800

2 T-shirts = ₹ 800 – ₹ 650 = 150

1 T-shirt = ₹ 150 ÷ 2 = ₹ 75

1 bag = ₹ 200 – ₹ 75 = ₹ 135

2 bags = 2 × ₹ 135 = ₹ 270

₹ 75 + ₹ 270 = ₹ 355

Cost of 1 T-shirt and 2 bags = ₹ 355

02. **(A)** At first chickens : cows In the end chickens : cows

5 : 6 3 : 2

10 : 6 9 : 6

10 units – 9 units = 1 unit

1 unit = 300

10 units – 6 units = 4 units

4 units = 4 × 300 = 1200

There were 1200 more chickens than cows at first.

03. **(A)** Sunil : 60 units, Manish : 100 units

100 units = 70

1 unit = 70 ÷ 100 = 0.7

60 units = 60 × 0.7 = 42

Manish : 70 parts, Dinesh : 100 parts

70 parts = 70

1 part = 70 ÷ 70 = 1

100 parts = 100 × 1 = 100

100 – 42 = 58

Dinesh scored 58 more marks than Sunil

04. **(B)** Total number of participants = 240 + 560 = 800

Percentage of girls = $\frac{240}{800}$ × 100% = 30%

05. **(D)** Let the base of a triangle be 1 unit

Total number of units of the rectangle = 5 + 2 + 5 + 2 = 14

14 units = 280

1 unit = 280 ÷ 14 = 20

2 units = 2 × 20 = 40

5 units = 5 × 20 = 100

Area of rectangle ABCD = 40 × 100 = 4000 cm^2

4000 ÷ 2 = 2000

The area of the shaded parts of rectangle ABCD is 2000 cm^2

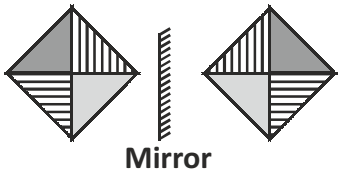
REASONING

01. **(C)** There are 3 meaningful words are formed.

(Star, Madam, Malayalam)

02. **(D)** There are 16 triangles in the given figure.

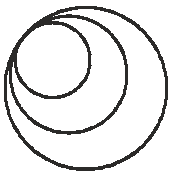
03. **(D)** 

04. **(A)** 

05. **(D)** 

CRITICAL THINKING

01. **(B)** Tarun has to make 15 trails to match all the keys and the locks.

02. **(D)** 

03. **(B)** Let x be a number of correct question and y be number of wrong questions

x + y = 20 ..... (1)

5x – 2y = 72 ..... (2)

multiply (1) with (2)

7x = 112

x = 16

x + y = 20

y = 4

wrongly answer questions are ‘4’

04. **(C)** Total number of 3’s are 14

05. **(D)** Four – 4 letters