Model Questions

Section A: General Knowledge

1. The Fibonacci sequence was discovered by ……..

   A. Carl Friedrich Gauss
   B. René Descartes
   C. William Playfair
   D. Leonardo Pisano Bigollo

2. One of the members of the 'Pythagorean Mathematicians', Hippasus, is famous for his invention of the set of _____

   A. Rational numbers
   B. Irrational numbers
   C. Integers
   D. Real numbers

3. Euclid is one of the prominent Greek mathematicians who laid the foundation of _____

   A. Geometry
   B. Probability
   C. Arithmetic
   D. Algebra

4. René Descartes is well-known for his contribution of the _____

   A. statistical representation of data
   B. pictorial representation of sets
   C. *x-y* Coordinate system
   D. number system

5. Who approximated the value of Pi (π) to be **3.1416**?

   A. Aryabhata
   B. Isaac Newton
   C. Blaise Pascal
   D. Euler

Section B: Application

1. What does $2^{2.5} \times (\sqrt{2})^3$ simplify to?

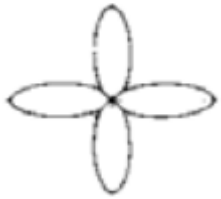
A. $(\sqrt{2})^6$

$B. (\sqrt{2})^{15}$

C. 16

D. 256

2. How many lines of symmetry does the following figure have?



A. 0 B. 2 C. 3 D. 4

3. Given that $\sqrt{5} = 2.236$ and $\sqrt{50} = 7.071$, then the value of $\sqrt{200}$ is _____

A. 14.142

B. 15.810

C. 28.184

D. 89.440

4. Which of the following numbers is the largest?

$\frac{1}{5}$, 0.5, 0.55, 52%

A. $\frac{1}{5}$ B. 0.5 C. 0.55 D. 52%

5. If p and q are integers and represented in the form $\frac{p}{q}$, where $q \neq 0$, it is a

A. natural number

B. rational number

C. whole number

D. composite number

6. The sum of all prime numbers between 0 and 20 is _____.

   A. 40 B. 41 C. 64 D. 77

7. Which of the following is true about 325×41?

   A. $325 \times 40 + 325$

   B. $324 \times 41 + 325$

   C. $325 \times 40 + 41$

   D. $324 \times 40 + 40$

8. Which of the following is Not irrational?

A. $(2 + \sqrt{3})(2 + \sqrt{3})$

B. $(2 - \sqrt{3})(2 - \sqrt{3})$

C. $(2 + \sqrt{3})(2 - \sqrt{3})$

D. $2\sqrt{3} + 3\sqrt{2}$

9. The ratio of each interior and the corresponding exterior angle of a regular polygon is 5:1. The number of sides of the regular polygon is

   A. 18
   B. 12
   C. 6
   D. 3

10. A rectangle has a width of 13 cm. Its length is thrice its width. What is the perimeter of the rectangle?

A. 507 cm

B. 104 cm

C. 52 cm

D. 39 cm

Section C: Logical Thinking and Reasoning

1. The least number which is divisible by all the integers from 1 to 5 is _____

A. 120

B. 90

C. 80

D. 60

2. If 400 is increased by 20% and the resulting number is decreased by 20%, the answer is _____

A. less than 400 B. equal to 400 C. greater than 400 D. 0

3. A bakery sells cupcakes at 20 rupees each and muffins at 30 rupees each. On a certain day, the bakery sold a total of 15 items and collected 370 rupees. How many cupcakes and how many muffins were sold?

A. 8 muffins and 7 cupcakes

B. 8 muffins and 8 cupcakes

C. 7 muffins and 7 cupcakes

D. 7 muffins and 8 cupcakes

4. If the word “MAN” is equivalent to the number “56”, what value will be equivalent to the word “WOMAN”?

A. 66
B. 132
C. 123
D. Non of the above

5. The number *b* is the square of another number *a*. When 65 is subtracted from *b*, the resulting number is eight times the number *a*. Find the two numbers *a* and *b*.
   A. 12 and 144
   B. 13 and 169
   C. 14 and 196
   D. 15 and 225

6. How many diagonals are there in a nonagon?

A 27

A. 20
B. 18
C. 9

7. In a club of 30 members, the ratio of the number of men to the number of women was 3 : 2 at the start of a particular year. After three months, 2 more men and 3 additional women joined the club. What is the new ratio of the number of men to the number of women?
   A. 1 : 1
   B. 3 : 4
   C. 4 : 3
   D. 5 : 3

8. I was born on the 8th of March. My friend Raja was born 12 days later during the same year. The Independence of Mauritius was celebrated on a Wednesday during that year. On which day was Raja born?

   A. Monday B. Tuesday C. Wednesday D. Thursday

9. I have three cards showing three consecutive even numbers. The square of the largest number is the square of the sum of the first two numbers.

   Which of the following is the largest of the three numbers?

   A. 4

   B. 6

   C. 8

   D. 12

10. When each side of a cube is increased by 10%, the total surface area increases by N%. What is the value of N?
   A. 10

B. 11
C. 21
D. 60

Question 1:

1: 5 :: 3: ??

Find the missing number:

A. 18
B. 19 (correct answer)
C. 20
D. 21

Question 2:

A toy is packed in a cubical box which has an edge of 3cm. For bulk delivery, each box containing the toy is packed in a larger cubical delivery box of edge 12 cm. How many toys can fit in one delivery box.

A. 4
B. 16
C. **64 (correct answer)**
D. 128

Question 3:

The mean age of Mr. and Mrs. Paul is 36 years old. The mean age of Mr. and Mrs. Paul and their daughter Mary is 28 years old. How old is Mary?

A. 12 years old (correct answer)
B. 8 years old
C. 10 years old
D. 14 years old

Question 4:

A ladder leans against a wall. The foot of the ladder is 6 meters from the wall and the ladder reaches 8 meters up the wall. What is the length of the ladder?

A. 10 m (correct answer)
B. 6 m
C. 8 m
D. 12 m

Question 5:

If today is Monday, what will be the day exactly 50 days from today?

A. Monday

B. Tuesday (correct answer)
C. Wednesday
D. Sunday

Question 6.

If the word "MAN" is equivalent to the figure "56", what figure will be equivalent to the word "WOMAN"?

E. 66
F. 132 (correct answer)
G. 123
H. Non of the above

APPLICATIONS

1. A science centre has 72 pencils and 96 erasers. The staff wants to divide them into identical kits without leaving any extra items. What is the greatest number of kits that can be made, and how many pencils and erasers will each kit have?

A. 24 kits, each with 4 pencils and 3 erasers.
B. **24 kits**, each with 3 **pencils** and **4 erasers**.
C. 12 kits, each with 3 pencils and 4 erasers.
D. 12 kits, each with 4 pencils and 3 erasers.

2. Two school buses leave a science centre at the same time. The first bus returns every 45 minutes. The second bus returns every 60 minutes. After how many minutes will both buses return to the science centre at the same time?

A. 105 minutes
B. 120 minutes
C. 150 minutes
D. 180 minutes

3. In a group of students, 30 students like Mathematics, 25 students like Science, 15 students like both Mathematics and Science. How many students like either Mathematics or Science or both?

A. 70
B. 40
C. 55
D. 45

4. A bakery sells cupcakes at 20 rupees each and muffins at 30 rupees each. On a certain day, the bakery sold a total of 15 items and collected 370 rupees. How many cupcakes and how many muffins were sold?

A. 8 muffins and 7 cupcakes
B. 7 muffins and 8 cupcakes
C. 8 muffins and 8 cupcakes
D. None of the above

5. Buses have 6 wheels. Semi-trailers have 18 wheels. At the truck and bus service station, there were 7 vehicles and a total of 78 wheels. How many buses and trailers were there at the service station?

A. 5 buses and 2 trailers
B. 4 buses and 3 trailers
C. 3 bus and 4 trailers
D. All of the above

6. When the dimension of a cube is increased by 10%, the total surface area increases by N%. What is the value of N?

A. 10
B. 11
C. 21
D. 60

RAPID FIRE ROUND

1. What whole number is equal to 1787 + 3574 + 5361 + 7418?

A. 17780
B. 17870
C. 18870

D. 18780

2. Which of the following numbers is divisible by 11? 37468, 21358, 354872, 82907

A. 354872
B. 37468
C. 21358
D. 82907

3. In the first 30 even numbers are written. How many times does '2' appear as a digit?

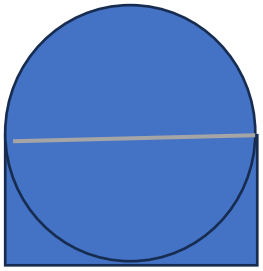
A. 8
B. 9
C. 10
D. 11

4. The product of two consecutive numbers is 1892. These numbers are

A. 41 and 42
B. 42 and 43
C. 43 and 44
D. 44 and 45

5. Consider the diagram below. If the area of the rectangle is 98 cm^2. What is the area of the circle? (Take π= 22/7)

A. 196 cm^2
B. 134 cm^2
C. 154 cm^2
D. 164 cm^2



6. A man covers 7 m in 1 sec. How many kilometres will be covered by him in 3 hours 50 minutes?

A. 13.8 Km
B. 56.4 Km
C. 78.9 Km
D. 96.6 Km

7. A shopkeeper puts the selling price of an item at a profit of 20%. Upon cash sales, he allows a discount of 30%. Which of the following is true after the sale of this item by cash?

A. Shopkeeper gets a profit of 10%
B. Shopkeeper gets a loss of 10 %
C. Shopkeeper gets a loss of 16%
D. Shopkeeper gets a loss of 15 %

8. Two poles, 23 m and 18 m high, stand upright in a playground. If their feet are 12 m apart, then find the distance between their tops.

A. 18 m
B. 13 m
C. 14 m
D. 16 m

Logical Thinking Questions

Question 1

A snail is at the bottom of a 4-meter water well. Each day, it climbs up 30 centimetres, but at night, it slips down 300 millimetres. How many days will it take for the snail to reach the top of the well?

a) 10 days

b) 25 days

c) 40 days

Question 2

I am an odd number, take away one letter and I become “even”. What number am I?

a) 6

b) 7

c) 8

Question 3

If the product of two consecutive positive integers is 306, what are the two integers?

Question 4

What three positive integers, when multiplied together, give a product equal to their sum?

Question 5

If you subtract 3 from a number, the double the result, and finally add 6, we get 18. What is the original number?

General Knowledge Questions

Question 1

René Descartes, the well-known mathematician is known for:

a) Pythagorean Theorem

b) Cartesian Coordinates

c) Laws of Motion

Question 2

How do we get the value of pie?

a) $\pi = \frac{Diameter}{Circumference}$

b) $\pi = Diameter\ x\ Circumference$

c) $\pi = \frac{Circumference}{Diameter}$

Question 3

What famous sequence is mathematics is formed by adding the two preceding numbers to get the next number in the sequence?

a) Prime numbers sequence

b) Fibonacci sequence

c) Arithmetic sequence

Application Questions

Question 1

If it takes 5 men 5 minutes to lay 5 bricks. How long would it take 100 men to lay 100 bricks.

a) 1 minute

b) 5 minutes

c) 20 minutes

d) 100 minutes

Question 2

A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?

a) $ 0.05

b) $ 0.10

c) $ 0.50

d) $ 5.00

Question 3

In a lake there is a patch of lily pads. Everyday the patch doubles in size. If it takes 48 days for the patch to cover the entire lake. How long would it take for the patch to cover half of the lake?

a) 6 days

b) 12 days

c) 24 days

d) 47 days

Question 4

Samantha leaves her house at 7.30 AM and walks to the park at an average speed of 5 km/h. She spends one hour at the park and then walks back home at an average speed of 6 km/h. If the distance of the park from Samantha's home is 3.5 km, at what time does she return home?

a) 8.17 AM

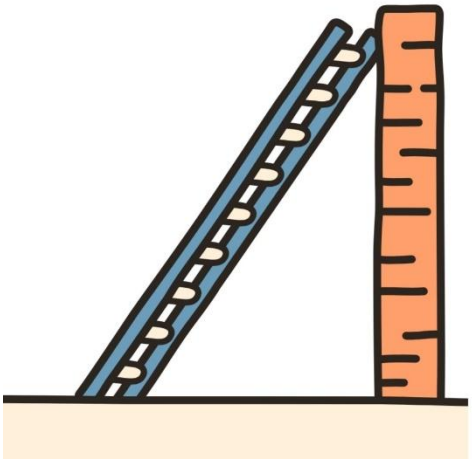
b) 8.37 AM

c) 9.27 AM

d) 9.47 AM

Question 5

The inclination of this ladder is represented by the equation $y = 3x + 2$.



a) What is the slope of the ladder?

   a. 1

   b. 2

   c. 3

b) At what coordinates does the ladder touch the wall?

   a. (0, 3)

   b. (0, 2)

   c. (0, 1)