

Mathematics

MCQ Single Correct (1 Marks)

20 X
1.0=20.0

- 1) Both x and y vary inversely with each other. When x is 10, y is 6, which of the following is not a possible pair of corresponding values of x and y? 1.0
 - A) 12 and 5
 - B) 15 and 4
 - C) 25 and 2.4
 - D) 45 and 1.3

- 2) Volume of cuboid having length 5.1 m, breadth 2 m and height 2 m. 1.0
 - A) 19.4 m²
 - B) 20.4 m²
 - C) 21.2 m²
 - D) 24.4 m²

- 3) Assuming land to be uniformly fertile, the area of land and the yield on it vary 1.0
 - A) directly with each other.
 - B) inversely with each other
 - C) neither directly nor inversely with each other
 - D) sometimes directly and sometimes inversely with each other.

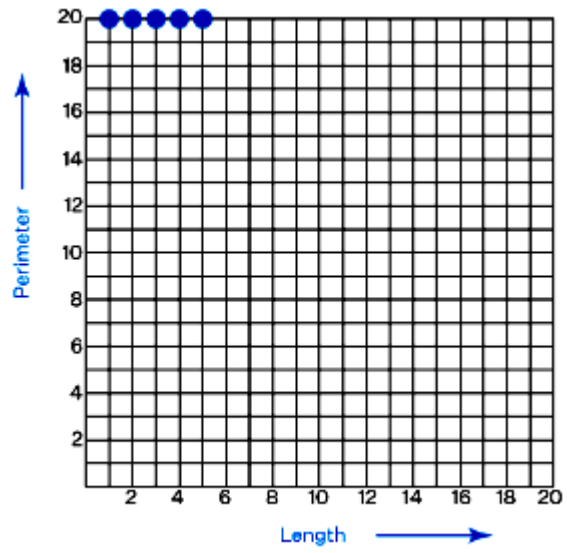
- 4) Solve for $\frac{3x}{2}=12$ 1.0
 - A) 6
 - B) 7
 - C) 8
 - D) 9

- 5) The number of teeth and the age of a person vary 1.0
 - A) directly with each other.
 - B) inversely with each other
 - C) neither directly nor inversely with each other
 - D) sometimes directly and sometimes inversely with each other.

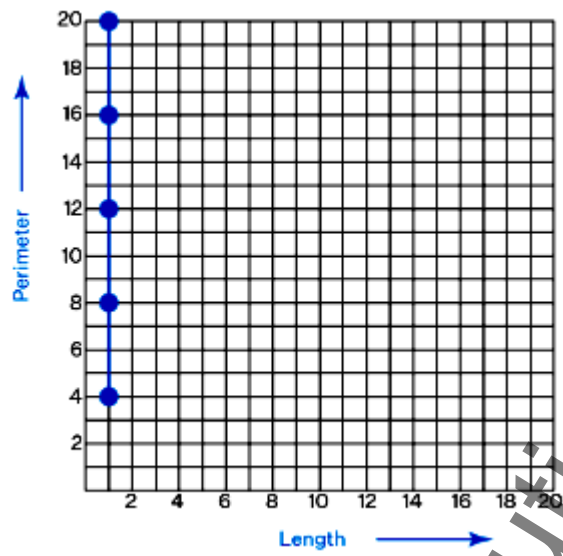
- 6) In 10² the base is 1.0
 - A) 1
 - B) 0
 - C) 10
 - D) 100

- 7) The original price of a washing machine which was bought for Rs 13,500 inclusive of 8% VAT is **1.0**
- A) Rs 12,420
B) Rs 14,580
C) Rs 12,500
D) Rs 13,492
- 8) '0' is not _____ **1.0**
- A) a natural number
B) a whole number
C) an integer
D) a rational number
- 9) A jacket was sold for Rs 1,120 after allowing a discount of 20%. The marked price of the jacket is **1.0**
- A) Rs 1440
B) Rs 1400
C) Rs 960
D) Rs 866.66
- 10) If 3 quintals of coal cost Rs 6000, What is the cost of 120 kg? **1.0**
- A) Rs 1200
B) Rs 2400
C) Rs 3600
D) Rs 4800
- 11) What is the area of the largest triangle that can be fitted into a rectangle of length l units and width w units? **1.0**
- A) $lw/2$
B) $lw/3$
C) $lw/6$
D) $lw/4$
- 12) Which of the following numbers is not a perfect square? **1.0**
- A) 169
B) 196
C) 225
D) 256
- 13) Which graph of the following represents the table below? **1.0**
- Length of side 1 2 3 4 5
Perimeter 4 8 12 16 20

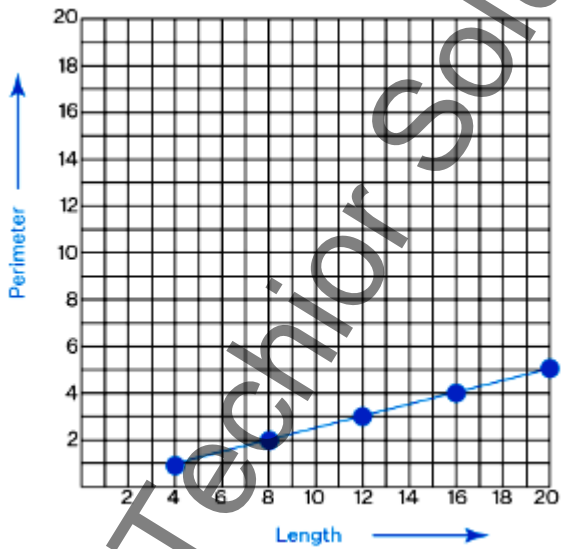
A)



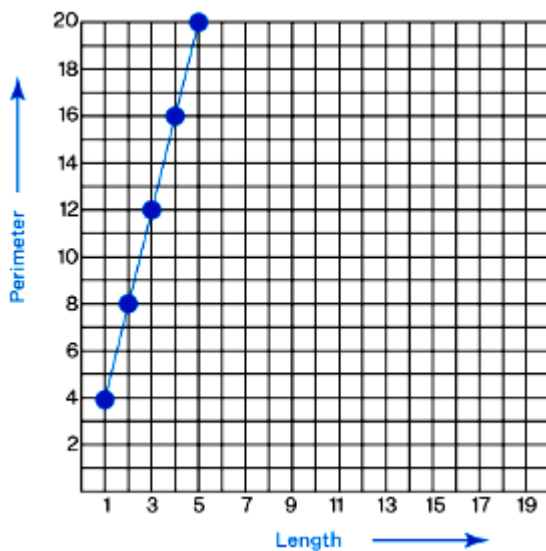
B)



C)



D)



- 14) The rational number that does not have a reciprocal is 1.0
- A) 0
B) 1
C) -1
D) 2
- 15) The coefficient of xy in xy is 1.0
- A) 1
B) -1
C) 2
D) 3
- 16) A truck needs 54 litres of diesel for covering a distance of 297 km. The diesel required by the truck to cover a distance of 550 km is 1.0
- A) 100 litres
B) 50 litres
C) 25.16 litres
D) 25 litres
- 17) Which of the following can be the square of a natural number 'n'? 1.0
- A) sum of the squares of first n natural numbers
B) sum of the first n natural numbers
C) sum of first $(n - 1)$ natural numbers
D) sum of first 'n' odd natural numbers
- 18) On factorising $14pq + 35pqr$, we get: 1.0
- A) $pq(14 + 35r)$
B) $p(14q + 35qr)$
C) $q(14p + 35pr)$
D) $7pq(2 + 5r)$

- 19) What is the square root of 324? 1.0
- A) 16
B) 17
C) 18
D) 19

- 20) Which of the following is the common factor of $21x^2y$ and $35xy^2$? 1.0
- A) 7
B) xy
C) $7xy$
D) none of these

Short Answer (2 Marks)

**6 X
2.0=12.0**

- 21) Find x : $4x+7=19$ 2.0

---OR---

Solve for x : $3x-5=10$.

- 22) Multiply $\frac{-3}{4}$ and $\frac{5}{6}$ 2.0

- 23) Find the radius of a circle if its area is 154 cm^2 . 2.0

- 24) What is the square root of 625? 2.0

- 25) Simplify : 2.0
- $$\frac{7}{3} - \frac{2}{3}$$

- 26) Find the y -intercept of the line represented by the equation $y=3x-5$. 2.0

---OR---

Plot the points A(2, 3) and B(6, 7) on a graph. Find the midpoint of the line segment joining A and B.

Short Answer (3 Marks)

**8 X
3.0=24.0**

- 27) In a parallelogram, the length of one diagonal is 10 cm and the other is 12 cm. Find the area if the height is 6 cm. 3.0

---OR---

A parallelogram has base 10 cm and height 6 cm. What is its area?

- 28) Find the distance between points A(1, 1) and B(4, 5). 3.0

- 29) Find a number whose square is 484. 3.0

---OR---

The area of a square is 289 cm^2 . Find the length of one side.

- 30) Simplify : $\frac{7^4}{7^2} \times 7^3$ 3.0
- 31) A sum of ₹5,000 increases by 8% per annum. What will the amount be after 2 years? 3.0
- 32) In a square, the length of one side is 7 cm. Find the length of its diagonal. 3.0
- 33) The cost price of a shirt is ₹1,200, and it is sold for ₹1,500. Find the profit percentage. 3.0
- 34) A discount of 15% is given on a marked price of ₹1,200. What is the selling price? 3.0

Long Answer (4 Marks)

**6 X
4.0=24.0**

- 35) Using prime factorisation, find which of the following are perfect cubes.
(a) 128 (b) 343 (c) 729 (d) 1331 4.0
- 36) A steamer goes downstream and covers the distance between two ports in 5 hours while it covers the same distance upstream in 6 hours. If the speed of the stream is 1 km/hr, find the speed of the steamer in still water. 4.0
- 37) The cost of a notebook is rs. 10. Draw a graph after making a table showing cost of 2, 3, 4, . . notebooks. Use it to find.
(a) the cost of 7 notebooks
(b) the number of notebooks that can be purchased with Rs. 50 4.0
- 38) Principle = Rs. 1000, Rate = 8% per annum. Fill in the following table and find which type of interest (simple or compound) changes in direct proportion with time period 4.0

Time Period	1 year	2 years	3 years
Simple Interest (in Rs.) $\frac{p \times r \times t}{100}$			
Compound Interest (in Rs.) $P \left(1 + \frac{r}{100} \right)^t - P$			

---OR---

A loaded truck travels 14 km in 25 minutes. If the speed remains the same, how far can it travel in 5 hours?

- 39) Find the coordinates of the midpoint of the line segment joining points P(1, 2) and Q(5, 6). 4.0

---OR---

Write the coordinates of the vertices of each of these adjoining figures.

- 40) Simplify : $(x + y)(x^2 - xy + y^2)$ 4.0