

Section : Quantitative Aptitude

**Q.1** एक ट्रक किसी निश्चित गति से 384 km की दूरी तय करता है। यदि गति को 16 km/h कम किया जाता है तो उसी दूरी को तय करने में दो घंटे अधिक लगेंगे। मूल गति (km/h में) का 75% कितना है?

- Ans
- 1. 48
  - 2. 54
  - 3. 42
  - 4. 45

**Q.2** If decreasing 120 by  $x\%$  gives the same result as increasing 40 by  $x\%$ , then  $x\%$  of 210 is what percent less than  $(x+20)\%$  of 180?

- Ans
- 1.  $16\frac{2}{3}$
  - 2.  $33\frac{1}{3}$
  - 3. 20
  - 4. 18

**Q.3** A solid cube of volume  $13824 \text{ cm}^3$  is cut into 8 cubes of equal volumes. The ratio of the surface area of the original cube to the sum of the surface areas of three of the smaller cubes is:

- Ans
- 1. 2 : 1
  - 2. 4 : 3
  - 3. 2 : 3
  - 4. 8 : 3

**Q.4** The ratio of the efficiencies of A, B and C is 2 : 5 : 3. Working together, they can complete a work in 27 days. B and C together can complete  $\frac{4}{9}$  th part of that work in:

- Ans
- 1. 15 days
  - 2.  $17\frac{1}{7}$  days
  - 3. 27 days
  - 4. 24 days

**Q.5** If  $x^4 + x^{-4} = 194$ ,  $x > 0$ , then the value of  $(x - 2)^2$  is:

- Ans
- 1. 1
  - 2. 6
  - 3. 2
  - 4. 3

**Q.6** If  $x + y + z = 19$ ,  $x^2 + y^2 + z^2 = 133$  and  $xz = y^2$ , then the difference between  $z$  and  $x$  is:

- Ans
- 1. 5
  - 2. 3
  - 3. 6
  - 4. 4

**Q.7** The table shows the production of different types of cars (in thousands).

Cars \ Years	2012	2013	2014	2015	2016
A	30	35	48	45	56
B	42	48	40	38	56
C	48	36	38	35	44
D	51	24	30	46	54
E	20	42	40	35	43

What is the ratio of the total production of cars of type A in 2014 and type C in 2013 taken together to the total production of cars of type B in 2016 and type E in 2015 taken together?

- Ans
- 1. 11 : 12
  - 2. 12 : 13
  - 3. 12 : 11
  - 4. 10 : 11

**Q.8** In  $\triangle ABC$ , F and E are the points on sides AB and AC, respectively, such that  $FE \parallel BC$  and FE divides the triangle in two parts of equal area. If  $AD \perp BC$  and AD intersects FE at G, then  $GD : AG = ?$

- Ans
- 1.  $(\sqrt{2} + 1) : 1$
  - 2.  $2\sqrt{2} : 1$
  - 3.  $(\sqrt{2} - 1) : 1$
  - 4.  $\sqrt{2} : 1$

**Q.9** If  $(5\sqrt{5}x^3 - 81\sqrt{3}y^3) \div (\sqrt{5}x - 3\sqrt{3}y) = (Ax^2 + By^2 + Cxy)$ , then the value of  $(6A + B - \sqrt{15}C)$  is:

- Ans
- 1. 10
  - 2. 9
  - 3. 15
  - 4. 12

**Q.10** If  $4 - 2 \sin^2 \theta - 5 \cos \theta = 0, 0^\circ < \theta < 90^\circ$ , then the value of  $\sin \theta + \tan \theta$  is:

- Ans**
- 1.  $3\sqrt{2}$
  - 2.  $2\sqrt{3}$
  - 3.  $\frac{3\sqrt{2}}{2}$
  - 4.  $\frac{3\sqrt{3}}{2}$

**Q.11** The table shows the production of different types of cars (in thousands).

Years \ Cars	2012	2013	2014	2015	2016
A	30	35	48	45	56
B	42	48	40	38	56
C	48	36	38	35	44
D	51	24	30	46	54
E	20	42	40	35	43

The number of years, in which the production of cars of type B is less than the average production of type D cars over the years, is:

- Ans**
- 1. 4
  - 2. 3
  - 3. 2
  - 4. 1

**Q.12** In a  $\triangle ABC$ , the bisectors of  $\angle B$  and  $\angle C$  meet at point O, inside the triangle. If  $\angle BOC = 122^\circ$ , then the measure of  $\angle A$  is:

- Ans**
- 1.  $68^\circ$
  - 2.  $72^\circ$
  - 3.  $64^\circ$
  - 4.  $62^\circ$

**Q.13** The table shows the production of different types of cars (in thousands).

Years \ Cars	2012	2013	2014	2015	2016
A	30	35	48	45	56
B	42	48	40	38	56
C	48	36	38	35	44
D	51	24	30	46	54
E	20	42	40	35	43

If the data related to the production of cars of type E is represented by a pie chart, then the central angle of the sector representing the data of production of cars in 2013 will be:

- Ans
- 1.  $80^\circ$
  - 2.  $70^\circ$
  - 3.  $102^\circ$
  - 4.  $84^\circ$

**Q.14** The ratio of the ages of A and B, four years ago, was 4 : 5. Eight years from now, the ratio of the ages of A and B will be 11 : 13. What is the sum of their present ages?

- Ans
- 1. 72 years
  - 2. 80 years
  - 3. 96 years
  - 4. 76 years

**Q.15** The table shows the production of different types of cars (in thousands).

Years \ Cars	2012	2013	2014	2015	2016
A	30	35	48	45	56
B	42	48	40	38	56
C	48	36	38	35	44
D	51	24	30	46	54
E	20	42	40	35	43

The total production of type B cars in 2012, 2014 and 2015 taken together is approximately what percent more than the total production of type A cars in 2013 and 2016 taken together?

- Ans
- 1. 34.4
  - 2. 33.2
  - 3. 31.9
  - 4. 36.3

**Q.16** O केंद्र वाले एक वृत्त की त्रिज्या 10 cm है, PQ तथा PR प्रत्येक 12 cm की जीवाएँ हैं। PO, QR जीवा को बिंदु S पर काटती है। OS की लंबाई क्या है?

- Ans
- 1. 3.2 cm
  - 2. 3 cm
  - 3. 2.8 cm
  - 4. 2.5 cm

Q.17 If  $\sin\theta = \frac{p^2-1}{p^2+1}$ , then  $\cos\theta$  is equal to:

- Ans
- 1.  $\frac{2P}{p^2-1}$
  - 2.  $\frac{P}{p^2-1}$
  - 3.  $\frac{P}{1+p^2}$
  - 4.  $\frac{2P}{1+p^2}$

Q.18  $\frac{2+\tan^2\theta+\cot^2\theta}{\sec\theta \operatorname{cosec}\theta}$  is equal to:

- Ans
- 1.  $\cos\theta \sin\theta$
  - 2.  $\sec\theta \operatorname{cosec}\theta$
  - 3.  $\cot\theta$
  - 4.  $\tan\theta$

Q.19 After giving two successive discounts, each of  $x\%$ , on the marked price of an article, total discount is ₹259.20. If the marked price of the article is ₹720, then the value of  $x$  is:

- Ans
- 1. 25
  - 2. 24
  - 3. 18
  - 4. 20

Q.20 A circle is inscribed in a triangle ABC. It touches the sides AB, BC and AC at the points R, P and Q respectively. If  $AQ = 4.5$  cm,  $PC = 5.5$  cm and  $BR = 6$  cm, then the perimeter of the triangle ABC is:

- Ans
- 1. 28 cm
  - 2. 30.5 cm
  - 3. 32 cm
  - 4. 26.5 cm

Q.21 The value of  $2 \times 3 \div 2$  of  $3 \times 2 \div (4 + 4 \times 4 \div 4$  of  $4 - 4 \div 4 \times 4)$  is:

- Ans  1. 2  
 2. 1  
 3. 4  
 4. 8

**Q.22** A person sold an article at a loss of 15%. Had he sold it for ₹30.60 more, he would have gained 9%. To gain 10%, he should have sold it for:

- Ans  1. ₹132  
 2. ₹140.25  
 3. ₹128.40  
 4. ₹130

**Q.23** The average of twelve numbers is 42. The average of the last five numbers is 40, and that of the first four numbers is 44. The 6<sup>th</sup> number is 6 less than the fifth and 5 less than the 7<sup>th</sup> number. The average of the 5<sup>th</sup> and the 7<sup>th</sup> numbers is:

- Ans  1. 44  
 2. 43.5  
 3. 43  
 4. 44.5

**Q.24** If a nine-digit number 985x3678y is divisible by 72, then the value of  $(4x - 3y)$  is:

- Ans  1. 6  
 2. 4  
 3. 3  
 4. 5

**Q.25** A sum amounts to ₹8,028 in 3 years and to ₹12,042 in 6 years at a certain rate percent per annum, when the interest is compounded yearly. The sum is:

- Ans  1. ₹5,352  
 2. ₹5,253  
 3. ₹5,235  
 4. ₹5,325