<u>DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO.</u>

**2022**

**TEST BOOKLET**

· **Paper-VI**

Time allowed : 3 hours

Full marks : 200

Answer *all* the questions.

Questions are of equal value.

**TEST BOOKLET SERIES**

# C
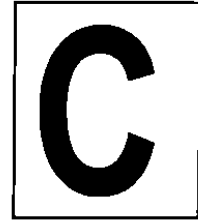
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Serial No. .................................

*Roll No.:*

*Signature of the Candidate:*

## INSTRUCTIONS

Candidates should read the following instructions carefully before answering the questions:

1. This booklet consists of 28 pages including this front page, containing 200 questions. **Verify the Page Nos. and Test Booklet series on each page and bring at once to the Invigilator's notice any discrepancy.**

2. Answers will have to be given in the Special Answer-Sheets supplied for the purpose.

3. Before you proceed to mark in the Answer-Sheet in response to various items in the Test Booklet, you have to fill in some particulars in the Answer-Sheet as per instructions sent to you in the Admit Card. *Do not fold the Answer-Sheet as this will result in error in your marks.*

4. All questions are of multiple-choice answer-type. You will find *four* probable answers (A), (B), (C) and (D) against each question. Find out which of the four answers appears to you to be **correct or the best.** Now darken the circle corresponding to the letter of the selected answer in the Answer-Sheet with **Black Ball Point Pen** as per instructions printed on the reverse **of the Admit Card** and in the Answer-Sheet.

5. One and only one circle is to be fully blackened for answer. Any spot in any other circle (multiple circle) or in wrong circle will be considered as wrong answer. If more than one circle is encoded for a particular answer, it will be treated as a wrong answer.

6. *There will be negative marking of 0.25 mark for each wrong answer.*

7. *There are blank pages at the end of this Booklet for Rough Work.*

8. *The Special Answer-Sheet should be handed over to the Invigilator before leaving the Examination Hall. You are permitted to take away the used Test Booklet after completion of the examination.*

**Please Turn Over**

**1.** Aarti, Vinita and Kamala became partners in a business by investing money in the ratio 5 : 7 : 6. Next year, they increased their investment by 26%, 20% and 15% respectively. In what ratio profit earned during 2nd year should be distributed?

(A) 21 : 28 : 23

(B) 23 : 28 : 21

(C) 28 : 23 : 21

(D) 21 : 23 : 28

**2.** A sum of ₹ 7,000 is divided among *A*, *B* and *C* in such a way that the shares of *A* and *B* are in ratio 2 : 3 and that of *B* and *C* are in ratio 4 : 5. Then the share of *C* is

(A) ₹ 2,600

(B) ₹ 2,800

(C) ₹ 3,000

(D) ₹ 3,900

**3.** How many times will the hands of a clock cross each other in a day?

(A) 24

(B) 23

(C) 22

(D) 25

**4.** Divide ₹ 2,600 in 3 parts in such a way that the interest at 4% of the first part, 6% of the 2nd part and 8% of the 3rd part becomes equal.

(A) ₹ 1200, ₹ 800, ₹ 600

(B) ₹ 1100, ₹ 900, ₹ 600

(C) ₹ 1000, ₹ 900, ₹ 800

(D) ₹ 1200, ₹ 1000, ₹ 800

**5.** Two vertices of an equilateral triangle are origin and (4, 0). What is the area of the triangle?

(A) 4 sq. unit

(B) $\sqrt{3}$ sq. unit

(C) $4\sqrt{3}$ sq. unit

(D) $2\sqrt{3}$ sq. unit

**6.** At a fair, a boy tries his skill in shooting. He was to receive ₹ 2 for hitting the 'bulls eye' and had to pay ₹ 1 for missing it. He tried 60 shots but received only ₹ 12. Then he hit the bull's eye

(A) 12 times

(B) 6 times

(C) 24 times

(D) 30 times

**7.** If $\cot\theta = \dfrac{24}{7}$ and $\theta$ is not in the first quadrant, then find the value of $\tan\theta - \sec\theta$.

(A) 1

(B) $\dfrac{4}{3}$

(C) $\dfrac{3}{2}$

(D) $\dfrac{5}{4}$

**8.** $\left(2-\dfrac{1}{3}\right)\left(2-\dfrac{3}{5}\right)\left(2-\dfrac{5}{7}\right)\cdots\left(2-\dfrac{997}{999}\right)$ is equal to

(A) $\dfrac{1001}{999}$

(B) $\dfrac{999}{1001}$

(C) $\dfrac{1001}{3}$

(D) $\dfrac{5}{1001}$

**9.** In a math lesson Shamali drew some triangles and some quadrilaterals. She drew 27 polygons altogether and a total of 99 vertices. Then total number of triangle she drew—

(A) 9

(B) 3

(C) 27

(D) 33

**10.** A man walking with $\frac{3}{4}$ of his usual speed, reaches office 20 minutes late. His usual time is

(A) 50 minutes

(B) 80 minutes·

(C) 70 minutes

(D) 60 minutes

**11.** The angles of a triangle are in arithmetic progression. If one of the angles is 75°, then the other two angles are

(A) 65°, 85°

(B) 60°, 90°

(C) 45°, 60°

(D) 55°, 65°

**12.** In the following figure, $ABCD$ is an isosceles trapezium. $AB \parallel CD$, $\overline{AB} = 9$ cm, $\overline{CD} = 12$ cm, $AP : PD = BQ : QC = 1 : 2$. Find $PQ$.
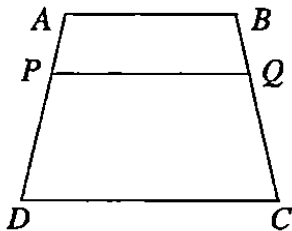


(A) 11 cm

(B) $10\frac{1}{2}$ cm

(C) 10 cm

(D) $4\frac{1}{2}$ cm

**13.** The difference between compound interest and simple interest on a sum for 2 years at 8% p.a. is ₹ 768. Find the sum.

(A) ₹ 1,10,000

(B) ₹ 1,20,000

(C) ₹ 1,00,000

(D) ₹ 1,70,000

**14.** The monthly salaries of A and B are in the ratio 3 : 5. Each receives an increment of ₹ 500. If the ratio of their salaries now stands at 7 : 11, then the salary of A, before increment was

(A) ₹ 2,500

(B) ₹ 3,000

(C) ₹ 4,500

(D) ₹ 4,000

**15.** A person gets ₹ 3,700 per week plus 2% commission on the sale of goods in excess of ₹ 10,000. If his a-week sales total is ₹ 24,000, then the week's wages earned by the person is

(A) ₹ 3,840

(B) ₹ 4,980

(C) ₹ 5,020

(D) ₹ 4,280

**16.** Hospital is 12 km. towards east of Rupin's house. His school is 5 km towards south of Hospital. What is the shortest distance between Rupin's house and school?

(A) 16 km

(B) 17 km

(C) 12 km

(D) 13 km

**Please Turn Over**

**17.** Mohit purchased a plot of land for ₹ 12,500. After 1 year due to recession the value of his land fell by 5%. In the 2nd year, the value increased by 8%. Then the value of the land after 2 years is.

   (A) ₹ 12,500

   (B) ₹ 12,000

   (C) ₹ 12,800

   (D) ₹ 12,825

**18.** A mixture of 40 L of alcohol and water contains 40% water. How much water should be added to the mixture so that new mixture contains 20% water?

   (A) 5 L

   (B) 9 L

   (C) 8 L

   (D) 6 L

**19.** A cuboid with length 14 cm and breadth 11 cm and a cylinder have the same height and volume. Then the radius of the base of the cylinder is

   (A) 11 cm

   (B) 5 cm

   (C) 7 cm

   (D) 9 cm

**20.** In the given figure, $PT$ is the tangent of a circle with centre $O$ at point $R$. If diameter $SQ$ is increased, it meets with $PT$ at point $P$. If $\angle SPR = x°$ and $\angle QSR = y°$, what is the value of $x° + 2y°$?
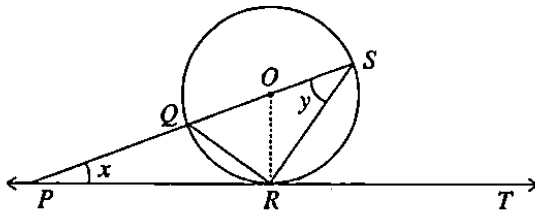


   (A) 90°

   (B) 105°

   (C) 135°

   (D) 180°

**21.** A person was appointed for a 50 day's job on a condition that he will be paid ₹ 12 for every working day but will be fined ₹ 6 for everyday he remains absent. After completion of the work, he got ₹ 420. How many days he did not work?

   (A) 15 days

   (B) 5 days

   (C) 10 days

   (D) 20 days

**22.** If a man sells two horses for ₹ 9,900 each, gaining 10% on one and losing 10% on the other. His loss is

   (A) ₹ 2

   (B) ₹ 1

   (C) ₹ 3

   (D) ₹ 8

**23.** The hypotenuse of a right-angled triangle is 41 cm. The sum of the other sides is 49 cm. Then the area of the triangle is

   (A) 360 cm²

   (B) 720 cm²

   (C) 180 cm²

   (D) 120 cm²

**24.** 5% of $a = b$, then $b$% of 20 is same as

   (A) 20% of $a/2$

   (B) 50% of $a/20$

   (C) 50% of $a/2$

   (D) 20% of $a/20$

**25.** If the market price of a commodity is 32% more than its cost price and if 16% discount is given, then profit percentage is

   (A) profit 9

   (B) profit 10

   (C) profit 10.88

   (D) profit 11

**26.** In two types of brass, the ratio of copper and zinc are 8 : 3 and 15 : 7 respectively. If these two types of brasses are mixed in the ratio 5 : 2, then in the mixture the ratio of copper and zinc will be

(A) 5 : 2

(B) 2 : 5

(C) 5 : 3

(D) 3 : 5

**27.** The capacities of two glasses are same. They are filled with $\frac{2}{3}$ rd part and $\frac{2}{5}$ th part of water respectively. Remaining part of both the glasses are filled with milk. If mixtures of both the glasses are mixed in a big glass, what is the ratio of water and milk in it?

(A) 8 : 7

(B) 5 : 7

(C) 7 : 3

(D) 9 : 2

**28.** How much water must be added to 5 liters of a 90% acid solution to make a 75% acid solution?

(A) 5·5 liters

(B) 0·5 liter

(C) 1 liter

(D) 4·5 liters

**29.** The 8% simple interest on a certain amount of money for 3 years is half the 10% compound interest on ₹ 8,000 for 2 years. The amount on which simple interest is calculated

(A) ₹ 3,500

(B) ₹ 3,600

(C) ₹ 3,800

(D) ₹ 4,000

**30.** When $\frac{5}{7}$ is expressed in decimal form, the digit in the 19th decimal place is
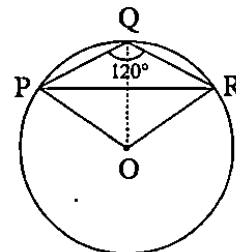
(A) 5

(B) 8

(C) 7

(D) 1

**31.** The sum of first 102 positive integers is

(A) 5250

(B) 5251

(C) 5252

(D) 5253

**32.** If the difference between 62% and 80% of a number is 198, then the difference between 92% and 56% of the number will be

(A) 396

(B) 3564

(C) 1100

(D) 360

**33.** In the given figure, $\angle PQR = 120°$, where P, Q and R are points on a circle with centre O. Then $\angle OPR$ is



(A) 20°

(B) 10°

(C) 30°

(D) 40°

**Please Turn Over**

**34.** How many bullets can be made out of a lead cylinder 56 cm high having a radius of 6 cm, each bullet being 1·5 cm in diameter?

(A) 4000

(B) 5000

(C) 3590

(D) 3584

**35.** The product of the digits of a two-digit number is 24. If its unit's digit exceeds twice its ten's digit by 2, then the number is

(A) 64

(B) 46

(C) 38

(D) 83

**36.** The smallest number by which 6400 must be multiplied to make a perfect cube is

(A) 2

(B) 4

(C) 8

(D) 10

**37.** Find the equation of a line parallel to y-axis and passing through the point (– 3, 4).

(A) $x + 3 = 0$

(B) $x - 3 = 0$

(C) $x + 4 = 0$

(D) $x - 4 = 0$

**38.** The cost price and the selling price of a bag are in the ratio 4 : 5. The profit is

(A) 20%

(B) 25%

(C) 30%

(D) 35%

**39.** Find the wrong number in the following series:

16, 14, 24, 66, 250, 1270

(A) 250

(B) 66

(C) 16

(D) 1270

**40.** The ratio in which two sugar solution of the concentrations 15% and 40% are to be mixed to get a solution of concentration 30% is

(A) 2 : 3

(B) 3 : 2

(C) 8 : 9

(D) 9 : 8

**41.** If LCM of $f(x)$ and $g(x)$ is $6x^2 + 13x + 6$, then which of the following can not be HCF of $f(x)$ and $g(x)$?

(A) $2x + 3$

(B) $3x + 1$

(C) $(2x + 3)(3x + 2)$

(D) $3x + 2$

**42.** If the points $(a, 0)$, $(0, b)$ and $(1, 1)$ are collinear, then which of the following is true?

(A) $\dfrac{1}{a}+\dfrac{1}{b}=2$

(B) $\dfrac{1}{a}-\dfrac{1}{b}=1$

(C) $\dfrac{1}{a}-\dfrac{1}{b}=2$

(D) $\dfrac{1}{a}+\dfrac{1}{b}=1$

**43.** In 4 years ₹ 6,000 amounts to ₹ 8,000. In what time at the same rate of interest will ₹ 525 amounts to ₹ 700?

(A) 4 years

(B) 3 years

(C) 2 years

(D) 5 years

**44.** A 2-digit number is such that the unit's digit is four times the ten's digit and if 54 is added to the number, the digits are reversed. Then the number is

(A) 14

(B) 28

(C) 82

(D) 41

**45.** Which of the following numbers has the maximum number of divisors?

(A) 108

(B) 99

(C) 154

(D) 44

**46.** What sum of money will amount to ₹ 520 in 5 years and to ₹ 568 in 7 years at simple interest?

(A) ₹ 400

(B) ₹ 120

(C) ₹ 510

(D) ₹ 220

**47.** A person was driving a car in fog. He passed a pedestrian who was walking at the speed of 2 km/h in the same direction. The pedestrian could see the car for 6 minutes and up to a distance of 0.6 km. What was the speed of the car?

(A) 8 km/h

(B) 10 km/h

(C) 40 km/h

(D) 12 km/h

**48.** The ratio of ladies and gentlemen at a party was 3 : 2. When 20 more gentlemen joined the party, the ratio was reversed. The number of ladies present at the party was

(A) 18

(B) 36

(C) 24

(D) 30

**49.** If in a triangle of base 4 cm and height 3 cm, the height is increased by 3 cm, find by how much the base should be decreased, if the new area is twice that of the original triangle.

(A) $\dfrac{1}{2}$

(B) $\dfrac{1}{4}$

(C) 2

(D) 0

**Please Turn Over**

**50.** By selling an article for ₹ 31 a shopkeeper loses 7%. If he sells the article for ₹ 35, then what is gain or loss per cent?

    (A) Loss 3%

    (B) Gain 5%

    (C) Loss 5%

    (D) Gain 3%

**51.** Find the value of

$$\frac{1}{\sqrt{5}-\sqrt{5-\sqrt{24}}}+\frac{1}{\sqrt{5}-\sqrt{5+\sqrt{24}}}$$

    (A) $\dfrac{1}{\sqrt{3}}$

    (B) $-\dfrac{1}{\sqrt{3}}$

    (C) $\dfrac{1}{3}$

    (D) $-\dfrac{1}{3}$

**52.** In an examination, it is required to get 40% marks to qualify. A candidate secured 150 marks and failed by 10 marks. What are the maximum marks of the examination?

    (A) 500

    (B) 400

    (C) 450

    (D) 350

**53.** The sum of two numbers is 150 and their H.C.F. is 15. The number of possible pairs is

    (A) 2

    (B) 3

    (C) 4

    (D) 5

**54.** Railway fares are increased by 50%. To return to the original rates they must be reduced by

    (A) 33%

    (B) $33\dfrac{1}{2}\%$

    (C) $33\dfrac{1}{3}\%$

    (D) $33\dfrac{1}{4}\%$

**55.** In a $\triangle ABC$, it is given that $\angle C = 90°$ and $\tan A = \dfrac{1}{\sqrt{3}}$, find the value of $(\sin A \cos B + \cos A \sin B)$.

    (A) 1

    (B) $\dfrac{1}{2}$

    (C) 0

    (D) 3

**56.** If one-third of one-fourth of a number is 20, then one-tenth of that number is

    (A) 24

    (B) 36

    (C) 45

    (D) 54

**57.** In a restaurant, John has 4 choices for starters, 6 choices for the main course and 5 choices for dessert. Then number of different 3 course meals John can order is

    (A) 100

    (B) 150

    (C) 120

    (D) 200

**58.** At 12 pm both hands of a wall clock, placed normally on the wall, point to the North. In which direction the hour hand will be point at 3 am?

(A) East

(B) West

(C) South

(D) North

**59.** Let $x = \sqrt[3]{9}$, $y = \sqrt[4]{11}$ and $z = \sqrt[6]{17}$; then which of the following relations is true?

(A) $x < y < z$

(B) $z < x < y$

(C) $y < z < x$

(D) $x > y > z$

**60.** Two men undertake to do a piece of work for ₹ 200. One alone can do it in 6 days, the other in 8 days. With the help of a boy they finish it in 3 days. How much is the share of the boy?

(A) ₹ 20

(B) ₹ 25

(C) ₹ 30

(D) ₹ 40

**61.** In a certain positive fraction, the denominator is greater than the numerator by 3. If 1 is subtracted from the numerator and denominator both, the fraction reduces by $\frac{1}{14}$. Then the fraction is

(A) $\frac{4}{7}$

(B) $\frac{8}{14}$

(C) $\frac{7}{20}$

(D) $\frac{3}{14}$

**62.** To cover a distance a man first goes $\frac{3}{8}$ th of the journey by train, 20% of the remaining by bus and still he has 6 km. The total distance is

(A) 8 km

(B) 10 km

(C) 12 km

(D) 16 km

**63.** When 50% of one number is added to a second number, the second number increases to its four-third. What is the ratio between the first number and the second number?

(A) 3 : 2

(B) 3 : 4

(C) 2 : 3

(D) 1 : 3

**64.** Find the angle between the two hands of a clock at 2·30 pm.

(A) 100°

(B) 105°

(C) 210°

(D) 70°

**65.** Study the following alphabetical sequence and answer the question based on it.

QRASTTUVXEIIHJKOLMOOCPS

If we drop all the vowels from above series, then the middle position occupied by

(A) X

(B) H

(C) J

(D) V

**66.** A man rows a boat 18 km in 4 hours downstream and returns upstream in 12 hours. The speed of the stream (in km/h) is

(A) 1

(B) 1·5

(C) 2

(D) 1·75

**Please Turn Over**

**67.** A cylindrical pillar of height 7·5 m and diameter 3·5 m is to be painted. At the top and bottom, 25 cm of the pillar is covered by brass plates and the remaining portion is to be painted. Then the area of the pillar which is to be painted, is

(A) 77 m²

(B) 196 m²

(C) 86 m²

(D) 75 m²

**68.** A can with 30 marbles weighed 120 gm. The same can with 15 marbles weighed 95 gm. Then the weight of the can is

(A) 50 gm

(B) 60 gm

(C) 70 gm

(D) 80 gm

**69.** A motorboat covers a certain distance downstream in a river in five hours. It covers the same distance upstream in six hours. The speed of water is 2 km/h. Then the speed of the boat in still water is

(A) 20 km/h

(B) 22 km/h

(C) 30 km/h

(D) 25 km/h

**70.** A batsman has certain average of runs for 11 innings. In the 12th innings he makes a score of 90 runs, thereby increasing his average by 5. His average after the 12th innings is

(A) 30

(B) 35

(C) 40

(D) 32

**71.** A person has deposited some amount in a bank and becomes ₹ 500 in 3 years and ₹ 540 in 5 years. The rate of interest is

(A) 4%

(B) $4\frac{6}{11}\%$

(C) $4\frac{7}{11}\%$

(D) 5%

**72.** The value of $\dfrac{27\frac{2}{3}\times27\frac{2}{3}-24\frac{1}{3}\times24\frac{1}{3}}{27\frac{2}{3}-24\frac{1}{3}}$ is

(A) 52

(B) 53

(C) 54

(D) 56

**73.** An equilateral triangle CDE is constructed on a side of CD of square ABCD. The value of ∠AEB is

(A) 150°

(B) 45°

(C) 30°

(D) 20°

**74.** A sum of money is borrowed and paid back in two annual instalments of ₹ 1,764 each allowing 5% compound interest. What was the sum borrowed?

(A) ₹ 4,000

(B) ₹ 3,340

(C) ₹ 3,000

(D) ₹ 3,280

**75.** Circle $C_1$ passes through the centre of circle $C_2$ and is tangential to it. If the area of $C_1$ is 4 cm$^2$, then the area of $C_2$ is

    (A) 8 cm$^2$

    (B) $8\sqrt{\pi}$ cm$^2$

    (C) 16 cm$^2$

    (D) $16\sqrt{\pi}$ cm$^2$

**76.** The difference between the greatest and least numbers formed out of the digits 8, 9, 0, 7 is
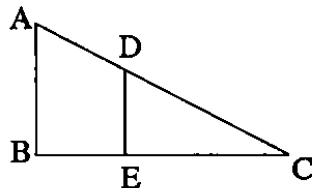
    (A) 9081

    (B) 1809

    (C) 2407

    (D) 2781

**77.** Find the number which is subtracted from the numbers in the ratio 11 : 23 so that the ratio becomes 1 : 3.

    (A) 5

    (B) 6

    (C) 7

    (D) 8

**78.** In ·the given figure AB and DE are perpendiculars to BC. If AB = 6 cm, DE = 4 cm and AC = 15 cm, then CD = ?

    (A) 5 cm

    (B) 2 cm

    (C) 10 cm

    (D) 4 cm



**79.** The average of 5 consecutive numbers is 15. The greatest number is

    (A) 17

    (B) 19

    (C) 11

    (D) 15

**80.** In the given Venn diagram; the triangle represents female graduates, small circle represents self-employed females and the big circle represents self-employed females with bank loan facility. Which number represents non-graduate self-employed females with bank loan facility?
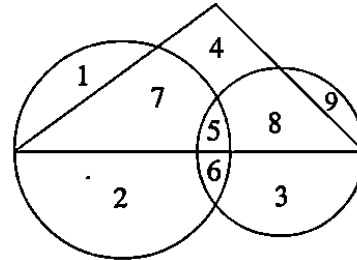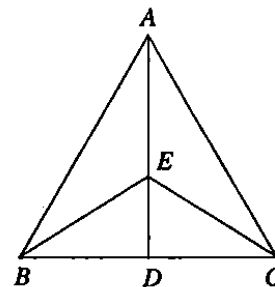


    (A) 2

    (B) 9

    (C) 6

    (D) 1

**81.** A certain sum of money amounts to ₹ 756 in 2 years and to ₹ 873 in 3 and half years at a certain rate of simple interest. The rate of interest p.a. is

    (A) 10%

    (B) 11%

    (C) 12%

    (D) 13%

**82.** $E$ is point on median $AD$ of $\triangle ABC$. If area $(\triangle ABE) = 10$ cm$^2$, then area $(\triangle ACE)$ is



    (A) 20 cm$^2$

    (B) 5 cm$^2$

    (C) 30 cm$^2$

    (D) 10 cm$^2$

**83.** In a seminar the number of participants in Mathematics, Physics and Biology are 192, 240 and 168 respectively. Find the minimum number of rooms required if in each room same number of participants is to be seated and all of them being of the same subject.

  (A) 20

  (B) 25

  (C) 28

  (D) 30

**84.** A loan was repaid in two annual instalments of ₹ 3,630 each. If the rate of interest be 10% per annum compounded annually, then find the sum that was borrowed.

  (A) ₹ 5,200

  (B) ₹ 6,100

  (C) ₹ 6,300

  (D) ₹ 5,600

**85.** If the centroid of the triangle formed by the points $(a, b), (b, c)$ and $(c, a)$ is the origin, then $a^3 + b^3 + c^3 =$ _____.

  (A) $abc$

  (B) 0

  (C) $a + b + c$

  (D) $3abc$

**86.** If 69·5 is the mean of 72, 70, $x$, 62, 50, 71, 90, 64, 58 and 82, then the value of $x$ is

  (A) 75

  (B) 67

  (C) 72

  (D) 76

**87.** The ratio of investments of two partners is 11 : 12 and the ratio of their profits is 2 : 3. If A invests the money for 8 months, find for how much time B invests his money?

  (A) 11 months

  (B) 8 months

  (C) 4 months

  (D) 6 months

**88.** In a State, each year the number of road accidents is decreased by 5% from the previous year due to road safety campaigns. The number of road accidents in the current year is 2916. 3 years ago this number was

  (A) 4000

  (B) 5100

  (C) 3890

  (D) 5000

**89.** If $AD$ is bisector of $\angle A$ and $AD$ is perpendicular to $BC$, then $\triangle ABC$ is _____ triangle.
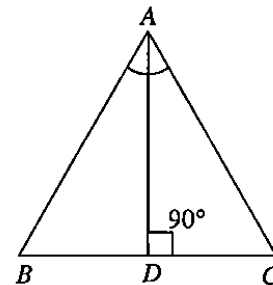


  (A) Isosceles

  (B) Equilateral

  (C) Scalene

  (D) None of the above

**90.** Divide ₹ 2,602 between X and Y, so that the amount of X after 7 years is equal to the amount of Y after 9 years, the interest being compounded at 4% per annum.

  (A) ₹ 1352, ₹ 1250

  (B) ₹ 1250, ₹ 1352

  (C) ₹ 1402, ₹ 1200

  (D) ₹ 1400, ₹ 1202

**91.** A tea seller faces 20% loss selling a certain brand of tea at the rate of ₹ 80 per kg. By selling another brand of tea at the rate of ₹ 200 per kg, he makes a profit of 25%. In what ratio the seller needs to mix the two brands of tea in order to make 25% profit by selling the mixed branded tea at the rate of ₹ 150 per kg?

(A) 1 : 2

(B) 2 : 3

(C) 2 : 1

(D) 3 : 2

**92.** A person has money to buy 42 suitcases at the rate of ₹ 500 each. If the cost per suitcase is increased by ₹ 100, then number of suitcases he can buy now is

(A) 30

(B) 35

(C) 38

(D) 40

**93.** The roots of the quadratic equation

$$\frac{1}{a+b+x}=\frac{1}{a}+\frac{1}{b}+\frac{1}{x}, \quad a+b \neq 0, \text{ are}$$

(A) $a, b$

(B) $-a, b$

(C) $a, -b$

(D) $-a, -b$

**94.** Two cylinders are such that the ratio of their base radii is 2 : 1 and the ratio of their heights are 3 : 1. Then the ratio of their volumes is

(A) 6 : 1

(B) 12 : 1

(C) 5 : 1

(D) 1 : 1

**95.** Equal weights of alloys '$x$' and '$y$' which contain zinc and tin in the proportion of 8 : 3 and 6 : 5 respectively are melted to form a third alloy '$z$', '$z$' contains zinc and tin in the proportion of

(A) 4 : 7

(B) 3 : 5

(C) 5 : 3

(D) 7 : 4

**96.** A and B start from the same place and travel in the same direction, B starting 2 hours after A. If A travels 40 km/h and B travels at 50 km/h, then the distance they have travelled when B overtakes A is

(A) 400 km

(B) 500 km

(C) 700 km

(D) 550 km

**97.** Find the value of $x$ from the following equation.

$$\frac{9x+7}{2}-\left[x-\left(\frac{x-2}{7}\right)\right]=36$$

(A) 9

(B) 18

(C) 5

(D) 4

**98.** After spending 88% of his money, a boy found he still had ₹ 372 left. Initially he had

(A) ₹ 3,372

(B) ₹ 4,400

(C) ₹ 4,100

(D) ₹ 3,100

**Please Turn Over**

**99.** A survey in a city showed that the probability that a person smokes is $\frac{2}{9}$. If 40 people in a certain sample smoke, then number of people in the sample is

(A) 180

(B) 200

(C) 240

(D) 120

**100.** The average of 7 consecutive number is 20. The largest of these numbers is

(A) 24

(B) 23

(C) 22

(D) 20

**101.** The average of 8 numbers is 6 and the average of 6 other numbers is 8. What is the average of all 14 numbers?

(A) 6

(B) $6\frac{6}{7}$

(C) $6\frac{5}{7}$

(D) $7\frac{5}{7}$

**102.** In a Zoo, there are lions and parrots. If counted, there are 100 heads and 290 legs. How many parrots are there?

(A) 55

(B) 65

(C) 45

(D) 75

**103.** Average age of A, B and C is 36 years. If average age of B and C is 30 years and age of B is 22 years, then what is the sum of the ages of A and C?

(A) 68 years

(B) 86 years

(C) 58 years

(D) 61 years

**104.** A merchant has 100 kg of sugar. He sells a part of which at 9% profit and the rest at 9% loss. He gains 5% on the whole. The quantity sold at 9% loss is

(A) 18 kg

(B) 20 kg

(C) 22·23 kg

(D) 25 kg

**105.** If the ratio between 8 and 11 is the same as the ratio of $(2x-y)$ to $(x+2y)$, find the value of $\frac{7x}{9y}$.

(A) $\frac{7}{9}$

(B) $\frac{3}{2}$

(C) $\frac{5}{7}$

(D) $\frac{7}{2}$

**106.** The G.C.M. of two numbers is 17 and their product is 6936. The no. of pairs of such numbers is

(A) 4

(B) 2

(C) 3

(D) 5

**107.** The speed of a bus is 54 km/h excluding stoppages and 45 km/h including stoppages. The bus will stop per hour for

(A) 8 minutes

(B) 10 minutes

(C) 12 minutes

(D) 15 minutes

**108.** Due to 25% fall in price of eggs, one can buy 2 dozen eggs more than before by investing ₹ 200. What was orginal price per dozen?

(A) ₹ $\dfrac{200}{6}$

(B) ₹ $\dfrac{300}{7}$

(C) ₹ $\dfrac{400}{6}$

(D) ₹ $\dfrac{700}{5}$

**109.** If $(2a + 1)(2a + 2)(2a + 3)(2a + 4) + q$ is a perfect square, then $q = ?$

(A) 24

(B) 1

(C) 12

(D) −8

**110.** If the first and the third terms of a G. P. are 2 and 8 respectively, then its second term is

(A) −4

(B) ± 4

(C) 4

(D) 0

**111.** A student was asked to multiply a number by $\dfrac{3}{2}$ but he divided the number by $\dfrac{3}{2}$. His result was therefore 10 less than the correct answer. Find the number.

(A) 10

(B) 12

(C) 15

(D) 20

**112.** A dealer sold an article at a loss of 10%. If he had sold for ₹ 125 more, he would have gained 15%. The cost price of the article is

(A) ₹ 300

(B) ₹ 500

(C) ₹ 432

(D) ₹ 1200

**113.** The annual increase in the population of a town be 10% and the present population is 13310. The population last two years ago was

(A) 10000

(B) 11000

(C) 10500

(D) 11500

**114.** Train A crosses a pole in 25 seconds and train B does the same in 1 minutes 15 seconds. Length of train A is half the length of train B. What is the ratio between the speed of A and B?

(A) 3 : 4

(B) 4 : 3

(C) 3 : 2

(D) 2 : 3

**115.** The sum of two numbers is 1400. If the larger number is decreased by 20% and the smaller number is increased by 20%, then the resulting numbers are equal. The two numbers are

(A) 740, 660

(B) 840, 560

(C) 800, 600

(D) 820, 580

**Please Turn Over**

**116.** Two persons are $a$ metres apart and the height of one is double that of the other. If from the middle point of the line joining their feet, an observer finds the angular evaluation of their tops to be complementary, then the height of the shorter person in metres is

(A) $\dfrac{a}{4}$

(B) $\dfrac{a}{\sqrt{2}}$

(C) $a\sqrt{2}$

(D) $\dfrac{a}{2\sqrt{2}}$

**117.** $\left(\dfrac{m^a}{m^b}\right)^{a+b}\left(\dfrac{m^b}{m^c}\right)^{b+c}\left(\dfrac{m^c}{m^a}\right)^{c+a} = ?$

(A) 0

(B) 5

(C) 3

(D) 1

**118.** If the number 472573* is completely divisible by 72, then which number should replace the star?

(A) 4

(B) 5

(C) 6

(D) 7

**119.** The diameter of a rollar is 84 cm and its length 120 cm. It takes 500 complete revolutions to move once over to level a playground. Find the area of the playground in sq. m.

(A) 1632

(B) 1584

(C) 1817

(D) 1532

**120.** If a glass holds 275 ml, how many of these glasses can be filled from a 2-liter drink of lemonade?

(A) 8 full glasses

(B) 7 full glasses

(C) 9 full glasses

(D) 6 full glasses

**121.** The volume of a cylinder of radius $r$ is $\dfrac{1}{4}$ of the volume of a rectangular box with a square base of side length $x$. If the cylinder and the box have equal heights, what is the value of $r$ in terms of $x$?

(A) $\dfrac{x^2}{2\pi}$

(B) $\dfrac{x}{2\sqrt{\pi}}$

(C) $\dfrac{\sqrt{2x}}{\pi}$

(D) $\dfrac{x}{\sqrt{\pi}}$

**122.** At the time of wedding, the bride's age was $\dfrac{3}{4}$ of the groom's age. After 8 years, her age is $\dfrac{4}{5}$ of her husband's age. Then the age of the bride at the time of her wedding is

(A) 24 years

(B) 18 years

(C) 19 years

(D) 26 years

**123.** The hypotenuse of a right-angled triangle is 26 cm and the sum of other two sides is 34 cm. Then the lengths of the two sides are

(A) 10 cm, 24 cm

(B) 8 cm, 26 cm

(C) 12 cm, 22 cm

(D) 14 cm, 20 cm

**124.** The average temperature of a city in the first four days of a month was 58 degree. The average of the 2nd, 3rd, 4th and 5th days was 60 degree. If the temperatures of 1st and 5th days were in the ratio 7 : 8, then what is the temperature of 5th day?

    (A) 64 degree

    (B) 62 degree

    (C) 56 degree

    (D) None of the above

**125.** If the cost of 57 articles is equal to the selling price of 38 articles, then percentage profit is

    (A) 20%

    (B) 30%

    (C) 50%

    (D) 55%

**126.** In a partnership business, Amal invested capital double the capital of Palash. The ratio of the period of investment is $\frac{1}{2} : \frac{1}{3}$. Then the ratio of their profit is

    (A) 1 : 3

    (B) 3 : 1

    (C) 6 : 1

    (D) 2 : 3

**127.** A computer depreciates at a rate of 25% p.a. If it was worth ₹ 26,000 new, how many full years must pass, before it worth less than half its original value?

    (A) 2 years

    (B) 3 years

    (C) 4 years

    (D) 1 year

**128.** The population of a town is 24000. If the number of males is increased by 6% and the number of females by 9%, then there would be 25620. The number of males and females in the town are
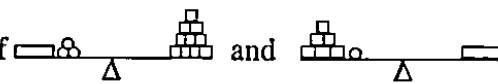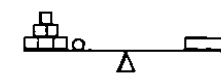
    (A) 18000, 6000

    (B) 16000, 8000

    (C) 14000, 10000

    (D) 17000, 7000

**129.** A man sold 2 articles at the same price ₹ 2,970 each. On one he made a loss of 10% and on the other a gain of 10%. The overall gain or loss percentage is

    (A) loss 1%

    (B) gain 1%

    (C) No loss or gain

    (D) gain 0·1%

**130.** A rectangular lawn 80 m × 60 m has two roads each 10 m wide running in the middle of it. One parallel to the length and the other parallel to the breadth. Find the cost of gravelling them at ₹ 20 per sq. m.

    (A) ₹ 35,000

    (B) ₹ 39,000

    (C) ₹ 26,000

    (D) ₹ 41,000

**131.** If  and  how many □ balance one ⬭ ?

    (A) 7

    (B) 3

    (C) 6

    (D) 5

**132.** The angles of a quadrilateral are in A. P. with common difference 20°. Then the smallest angle is

    (A) 100°

    (B) 130°

    (C) 30°

    (D) 60°

**Please Turn Over**

**133.** If 6 men can harvest a field in 60 working hours and a man works three times as fast as a boy. Then 10 boys can harvest a field in

    (A) 60 hours

    (B) 40 hours

    (C) 100 hours

    (D) 108 hours

**134.** Capacity of tap B is 80% more than that of A. If both the taps are opened simultaneously, they take 45 hours to fill the tank. How long will B take to fill the tank alone?
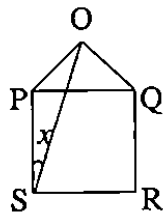
    (A) 72 hours

    (B) 48 hours

    (C) 66 hours

    (D) 70 hours

**135.** If the radius of a circle is increased by 10%, then the percentage increased in the circumference of a circle is

    (A) 10%

    (B) 20%

    (C) 50%

    (D) 15%

**136.** In the given figure (not drawn to scale), PQRS is a square, $\triangle$ OPQ is an equilateral triangle, then the value of $x$ is

    (A) 20°
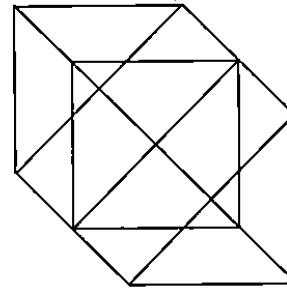
    (B) 25°

    (C) 15°

    (D) 10°

**137.** The ratio of the areas of a regular hexagon and a square having the same perimeter is

    (A) $2\sqrt{3} : 3$

    (B) $\sqrt{3} : 2$

    (C) $3\sqrt{3} : 2$

    (D) $3 : 2$

**138.** The 30th term of the sequence $\frac{1}{2}, 1, \frac{3}{2}, \cdots$ is

    (A) 15

    (B) 1

    (C) $\frac{29}{2}$

    (D) $\frac{31}{2}$

**139.** Find the number of triangles in the given figure.

    (A) 18

    (B) 20

    (C) 24

    (D) None of the above

**140.** If the value of a gold coin is increased by 20% each year, then the percentage increase of the gold coin over three years is

    (A) 80·5%

    (B) 60%

    (C) 72·8%

    (D) 70·1%

**141.** Which of the following numbers is divisible by 3, 4, 5 and 7?

    (A) 3150

    (B) 1400

    (C) 2940

    (D) 3570

**142.** A business man marks his good at 20% above the cost price. He allows the customers a discount of 8% on market price. His net percentage of profit is

- (A) 10·4%
- (B) 10%
- (C) 10·2%
- (D) 10·6%

**143.** In a partnership between A and B, A's capital is $\frac{2}{5}$ th of the total and invested for $\frac{2}{3}$ year. If his share of profit is $\frac{4}{7}$ of the total, then how long is B's capital in the business?

- (A) 6 months
- (B) 4 months
- (C) 8 months
- (D) 3 months

**144.** A company with 1000 shares of nominal value ₹ 150 declares an annual dividend of 10%. Then the total amount of dividend paid by the company is

- (A) ₹ 15,000
- (B) ₹ 10,000
- (C) ₹ 1,000
- (D) ₹ 1,500

**145.** $\sqrt{12 + \sqrt{12 + \sqrt{12 + \ldots}}}$ is equal to

- (A) 2
- (B) 3
- (C) 4
- (D) 6

**146.** If $a = 25\%$ of $b = 10\%$ of $c$, then $a : b : c = ?$

- (A) 2 : 5 : 6
- (B) 2 : 5 : 7
- (C) 1 : 3 : 11
- (D) 1 : 4 : 10

**147.** The value of $\dfrac{\sqrt{64} + \sqrt[3]{-64}}{\sqrt{729} + \sqrt[3]{-729}}$ is

- (A) $\dfrac{1}{3}$
- (B) $\dfrac{2}{9}$
- (C) 1
- (D) $\dfrac{2}{3}$

**148.** A block of cheese 5 cm by 6 cm by 8 cm is covered with wax. If the cheese is cut into one centimetre cubes, then number of cubes not having wax on them is

- (A) 72
- (B) 240
- (C) 210
- (D) 120

**149.** Three friends started a partnership business with capitals ₹ 5,000, ₹ 6,000 and ₹ 7,000 respectively. After one year they found a loss of ₹ 1,800. To keep the capital same they decided to share the loss among themselves in the ratio of their capitals. The amount each one has to pay is

- (A) ₹ 490, ₹ 610, ₹ 700
- (B) ₹ 490, ₹ 600, ₹ 710
- (C) ₹ 500, ₹ 580, ₹ 720
- (D) ₹ 500, ₹ 600, ₹ 700

**150.** At a certain school, there are 320 juniors and 180 seniors. The average absenteeism rate is $6\frac{1}{4}\%$ for juniors and $8\frac{1}{3}\%$ for seniors. Then the average absenteeism rate overall for the school is

- (A) 5%
- (B) 6%
- (C) 7%
- (D) 8%

**Please Turn Over**

**151.** A telegraph post gets broken at a point against a storm and its top touches the ground at a distance 20 m from the base of the post making an angle 30° with the ground. What is the height of the post?

(A) $\dfrac{40}{\sqrt{3}}$ m

(B) $20\sqrt{3}$ m

(C) $40\sqrt{3}$ m

(D) 30 m

**152.** The number of solid spheres, each of diameter 6 cm could be moulded to form a solid metal cylinder of height 45 cm and diameter 4 cm, is

(A) 3

(B) 4

(C) 5

(D) 6

**153.** A plane left 30 minutes later than the scheduled time and in order to reach its destination 1500 km away in time, it has to increase its speed by 250 km/h from its usual speed. Then its usual speed is

(A) 1000 km/h

(B) 2500 km/h

(C) 750 km/h

(D) 800 km/h

**154.** The length of the longest thin rod that can fit inside a rectangular box that measures 15 cm by 10 cm by 5 cm is

(A) 18·7 cm

(B) 17·2 cm

(C) 15·8 cm

(D) 20·2 cm

**155.** A began a business with ₹ 10,500 and is joined afterwards by B with ₹ 18,000. After how many months did B join, if the profit at the end of the year is divided equally?

(A) 15 months

(B) 10 months

(C) 5 months

(D) Couldn't be determined

**156.** A pole of length 12 m casts a shadow of length 15·6 m. Then the length of the shadow cast by another pole of length 18 m is

(A) 23·4 m

(B) 24 m

(C) 46·8 m

(D) 31·2 m

**157.** The difference between compound interest and simple interest for 2 years on ₹ 22,500 at 6% p.a. is

(A) ₹ 225

(B) ₹ 181

(C) ₹ 81

(D) ₹ 220

**158.** In what time will simple interest be $\dfrac{2}{5}$ of the principal at 8% p.a.?

(A) 8 years

(B) 7 years

(C) 5 years

(D) 6 years

**159.** The given pie chart (not drawn to scale) represents the annual performance of the students of a class in terms of grades A, B, C and D. The percentage of students who have got B grade is

(A) 40%

(B) 55%

(C) 60%

(D) 65%
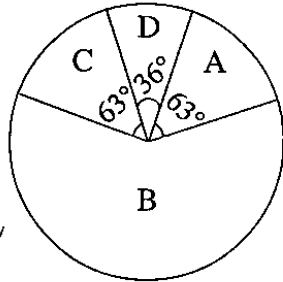


**160.** In the given figure, $AB \parallel CD$ and $PQ$, $QR$ intersect $AB$ and $CD$ both at $E$, $F$ and $G$, $H$ respectively. Find the value of $x$.
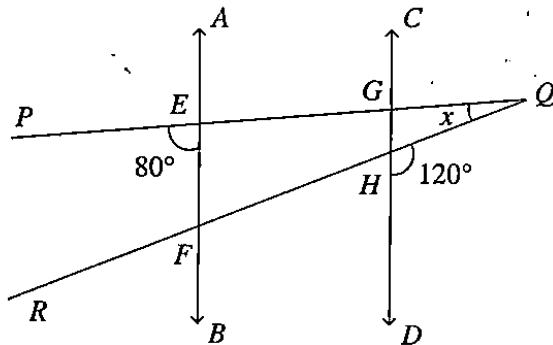


(A) 40°

(B) 20°

(C) 30°

(D) 10°

**161.** Successive discounts of 10% and 30% are equivalent to a single discount of

(A) 73%

(B) 36%

(C) 38%

(D) 37%

**162.** $X$ is 20% heavier than $Y$ and $Z$ is 20% lighter than $Y$. The weight of $Z$ is equal to

(A) $\dfrac{4}{5}$ of $X$

(B) $\dfrac{3}{5}$ of $X$

(C) $\dfrac{3}{2}$ of $X$

(D) $\dfrac{2}{3}$ of $X$

**163.** Amal can do a piece of work in 12 days. Mihir is found to be 50% more efficient than Amal. If Mihir is given the piece of work, then he will complete it by

(A) 6 days

(B) 8 days

(C) 4 days

(D) 10 days

**164.** The hundreds digit of the square root of the square number 3, 15, 844 is

(A) 3

(B) 4

(C) 5

(D) 6

**165.** The population of a town increases 5% annually, if its present population is 74970, what it was two years ago?

(A) 64200

(B) 68000

(C) 63155

(D) 72000

**166.** 40 men complete $\dfrac{1}{3}$ rd of a work in 40 days. How many more men should be employed to finish the rest of the work in 50 more days?

(A) 12

(B) 20

(C) 18

(D) 24

**Please Turn Over**

**167.** The radius of a wheel is 14 m. How many revolution will it make in travelling 880 m?

- (A) 10
- (B) 12
- (C) 14
- (D) 16

**168.** The difference between the squares of two consecutive numbers is 65. The greatest number is

- (A) 33
- (B) 34
- (C) 35
- (D) 36

**169.** A train leaves place A at 5 am and reaches place B at 9 am. Another train leaves place B at 7 am and reaches place A at 10·30 am. At what time do they cross each other?

- (A) 6·56 am
- (B) 7·56 am
- (C) 8 am
- (D) 8·30 am

**170.** Cost of coffee A and B are ₹ 64 and ₹ 80 per 100 gm respectively. A blend of two is sold at ₹ 86 per 100 gm. If a profit of 25% is to be earned on this blend, what should be the proportion of A and B in its composition?

- (A) 8 : 5
- (B) 9 : 2
- (C) 7 : 3
- (D) 3 : 2

**171.** A peon has a salary of ₹ 1,000 per month and a carpenter earns ₹ 30 per day, but he is idle for 65 days in the year. The ratio of their income is

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

**172.** A hotel bill for a number of people for overnight stay is ₹ 4,800. If there were 4 more people, the bill each person had to pay, would have reduced by ₹ 200. Then the number of people staying overnight is

- (A) 8
- (B) 6
- (C) 10
- (D) 12

**173.** How many triangles are there in the following figure?
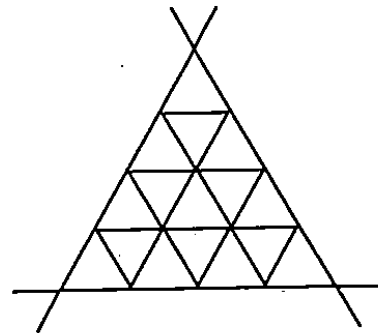


- (A) 19
- (B) 21
- (C) 27
- (D) 30

**174.** A certain amount of money is kept for 2 years at certain simple interest. If the interest rate is 3% higher, then it will bring ₹ 300 more. The amount of money is

- (A) ₹ 2,000
- (B) ₹ 2,500
- (C) ₹ 3,500
- (D) ₹ 5,000

**175.** If $x = \sqrt{2 + \sqrt{2 + \sqrt{2 + \ldots}}}$ , then the value of $x$ is

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

**176.** Value of $\dfrac{7^{23}+7^{24}+7^{25}+7^{26}}{16}$ is

    (A) $7^{23} \times 5$

    (B) $7^{23} \times 175$

    (C) $7^{22} \times 175$

    (D) $7^{23} \times 35$

**177.** A shopkeeper buys a number of books for ₹ 80. If he had bought 4 more books for the same amount, each book would have cost ₹ 1 less. How many books did he buy?

    (A) 16

    (B) 20

    (C) 18

    (D) 22

**178.** In a multiple choice exam of 30 questions, a correct answer earns 2 marks, an incorrect answer loses 3 marks and an unanswered question scores 0 marks. If Raj left out 6 questions and his score was 28, then number of questions he gets correct is

    (A) 22

    (B) 20

    (C) 25

    (D) 15

**179.** Vandana bought a watch for ₹ 600 and sold it on the same day for ₹ 688·50 at a credit of 9 months and this way she gained 2%. Find the rate of interest per annum.

    (A) $16\dfrac{2}{3}\%$

    (B) $15\dfrac{2}{3}\%$

    (C) $11\dfrac{2}{3}\%$

    (D) $5\dfrac{2}{3}\%$

**180.** What should come in place of the question mark?

    7, 8, 18, ?, 232, 1165

    (A) 84

    (B) 42

    (C) 57

    (D) 36

**181.** The smallest number which is being divided by 8, 9, 12 and 15 always leaves 1 as a remainder is

    (A) 361

    (B) 359

    (C) 181

    (D) 197

**182.** Two cyclists start from the same place in opposite direction and goes towards north at 18 km/h and the other goes towards south at 20 km/h. What time will they need to apart 47·5 km?

    (A) 2 hours

    (B) $1\dfrac{1}{4}$ hours

    (C) 3 hours

    (D) $2\dfrac{1}{2}$ hours

**183.** A takes as much time to do a piece of work as B and C take to do it working together. If A and B together can do the same work in 10 days and C alone can do it in 20 days, find the time in which B will finish this work.

    (A) 40 days

    (B) 60 days

    (C) 80 days

    (D) 20 days

**Please Turn Over**

**184.** A square lawn is bounded on three sides by a path 4 m wide. If the area of the path is $\frac{7}{8}$ that of the lawn, then each side of the lawn is

(A) 10 m

(B) 12 m

(C) 16 m

(D) 18 m

**185.** All students of a class like Horlicks, Maltova or Viva. Number of students who like only Horlicks and Maltova, only Maltova and Viva and only Horlicks and Viva are equal to twice the number of students who like all the three health drinks. Number of students who like only Horlicks, only Maltova and only Viva are all equal to thrice the number of students who like all three. If four students like all the three health drinks, then find the number of students in the class.

(A) 64

(B) 48

(C) 68

(D) 52

**186.** A bus maintains an average speed of 60 km/h while going from P to Q and maintains an average speed of 90 km/h while coming back. The average speed of bus is

(A) 75 km/h

(B) 72 km/h

(C) 70 km/h

(D) 80 km/h

**187.** A solid spherical ball of radius 4 cm is melted and recast into 64 identical spherical marbles. Then the radius of each marble is

(A) 1 cm

(B) 1·5 cm

(C) 0·2 cm

(D) 1·2 cm

**188.** The numerator of a fraction is 6 less than its denominator. If 3 is added to the numerator, the fraction becomes equal to $\frac{2}{3}$. Then the original fraction is

(A) $\frac{7}{13}$

(B) $\frac{1}{7}$

(C) $\frac{3}{9}$

(D) $\frac{5}{11}$

**189.** Rima has ₹ 1000 in denominations of ₹ 5 and ₹ 2 coins. If the number of two-rupee coins Rima has is five-eighths of the number of five-rupee coins, then five-rupee coins Rima has

(A) 100

(B) 120

(C) 160

(D) 200

**190.** A keeps 10 ships for 3 weeks and B keeps 15 ships for 4 weeks. Find the ratio of the rent paid by them.

(A) 1 : 2

(B) 2 : 1

(C) 3 : 1

(D) 1 : 3

**191.** If $\sqrt{3\cdot4596} = 1\cdot86$, then $\sqrt{3459600} = ?$

(A) 18·6

(B) 1860

(C) 186

(D) 1·86

**192.** If the value of the letter A is 1, B is 2 and so on and the word BAT = 23, then the value of the word DISCIPLINE is

(A) 100

(B) 110

(C) 250

(D) 150

**193.** A point $P$ divides the line joining the points $(2, 1)$ and $(5, -8)$ in ratio $1 : 2$. Also, the point $P$ lies on the line $2x - y + k = 0$. Find the value of $k$.
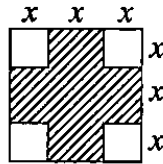
(A) 6

(B) −8

(C) −6

(D) 8

**194.** A runs $1\dfrac{2}{3}$ times as fast as B. If A gives B a start of 40 m, how far must the winning post be so that A and B might reach it at the same time?

(A) 75 m

(B) 200 m

(C) 100 m

(D) 125 m

**195.** Four equal squares are cut out of a square as shown in the diagram. If the perimeter of the original square was 36 cm, then the perimeter of the shaded region is

(A) 30 cm

(B) 36 cm

(C) 32 cm

(D) 40 cm



**196.** The area of a circle is increased by 22 sq. m. when its radius is increased by 1 m. Find the original radius of the circle.

(A) 6 m

(B) 3 m

(C) $3\dfrac{1}{2}$ m

(D) $3\dfrac{1}{5}$ m

**197.** In $\triangle ABC$, $\angle B = 90°$, $AB = 12$ cm, $BC = 16$ cm. The area of semicircle drawn on diameter AC is

(A) $157\,\text{cm}^2$

(B) $314\,\text{cm}^2$

(C) $150\,\text{cm}^2$

(D) $328\,\text{cm}^2$

**198.** A loan amount ₹ 11,000 is to be paid in two equal annual installments. If the rate of interest be 20% compounded annually, then the value of each installment is

(A) ₹ 7,200

(B) ₹ 7,100

(C) ₹ 7,000

(D) ₹ 7,500

**199.** A boy was asked to find $3\dfrac{1}{2}$ % of a sum of money. He misread the question and found $5\dfrac{1}{2}$ % of it. His answer was ₹ 247·50. The correct answer is

(A) ₹ 100

(B) ₹ 157·50

(C) ₹ 159·50

(D) ₹ 160

**200.** The perimeter of an isosceles triangle is 32 cm. Each equal side is $1\dfrac{1}{2}$ times the base. Then the length of the equal side is

(A) 8 cm

(B) 10 cm

(C) 12 cm

(D) 14 cm