1. The roots of the quadratic equation $5x^2 + 13x + k = 0$ are reciprocal to each other, then value of $k$ will be

(A) 5
(B) 0
(C) 4
(D) 6

2. The ratio of the number of boys and girls is 3:2. If 20% of the boys and 30% of the girls are scholarship holders, then the percentage of students who do not get scholarship is

(A) 50
(B) 72
(C) 75
(D) 76

3. If a person walks at 14 km/hr instead of 10 km/hr, he would have walked 20 km more. The actual distance travelled by him is

(A) 50 km
(B) 56 km
(C) 70 km
(D) 80 km

4. A dishonest merchant professes to sell his goods at cost price, but used a weight of 900 grams for one kg. What is his profit percent?

(A) 10%
(B) $11\frac{1}{9}\%$
(C) $9\frac{1}{11}\%$
(D) 11%

5. Two trains, one from Howrah to Patna and other from Patna to Howrah, start simultaneouly. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is

(A) 2 : 3
(B) 4 : 3
(C) 6 : 7
(D) 9 : 16

6. A cylindrical vessel of radius 4cm contains water. A solid sphere of radius 3cm is lowered into the water until it is completely immersed. The water level in the vessel will rise by

(A) $\frac{2}{9}$cm
(B) $\frac{4}{9}$cm
(C) $\frac{9}{4}$cm
(D) $\frac{9}{2}$cm

7. A shopkeeper purchased a chair marked at ₹ 800, at two successive discounts of 10% and 15% respectively. He spent ₹ 28 on transporation and sold the chair for ₹ 800. His gain percent is:

(A) 40%
(B) 30%
(C) 25%
(D) 14%

8. The remainder, when $(x^3 + 3x^2 + 3x + 1)$ is divided by $(x - 1)$, is

(A) 1
(B) 0
(C) 2
(D) 8

9. If a man goes to a place at an average speed of 10 km/hr and then returns at the average speed of 15 km/hr. Find his average speed during the whole journey.

(A) 12 km/hr
(B) 12·5 km/hr
(C) 13 km/hr
(D) 15 km/hr

**Direction: In the question same codes have been used to write words. Try to find out the rule of coding in each case and answer as per direction in the OMR Answer Sheet.**

**10.** In certain code 'PLAY' is written as 'TPEC'. How could 'GAME' be written in that code?

(A) KEQA
(B) KIQE
(C) KAQI
(D) KEQI

**11.** A does half as much work as B in three-fourth of the time. If together they take 18 days to complete a work, how much time shall B take to do it alone?

(A) 30 days
(B) 35 days
(C) 40 days
(D) 45 days

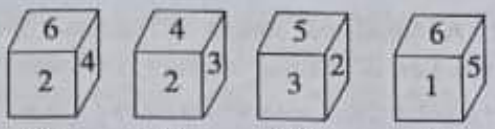
**12.** $\frac{1}{a+b+x}=\frac{1}{a}+\frac{1}{b}+\frac{1}{x}, x\neq 0, x=?$

(A) $a$
(B) $b$
(C) $-a, -b$
(D) $a, b$

**13.** A and B started a partnership investing amounts in the ratio 2 : 3. After 6 months, C joined the partnership with an amount equal to that of B. The profit at the end of one year should be distributed among A, B and C in the ratio:

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

**14.**




(i) (ii) (iii) (iv)

Which number is at the opposite face of number 2?

(A) 4
(B) 1
(C) 5
(D) 3

**15.** 7th term of the A.P. 5, 12, 19, ..... is

(A) 45
(B) 47
(C) 40
(D) 33

**16.** The mean proportional of 16 and 25 is

(A) 400
(B) 100
(C) 20
(D) 40

**17.** If $4 \times 5^x = 500$, then the value of $x^x$ is–

(A) 8
(B) 1
(C) 64
(D) 27

**18.** Average weight of 25 persons is increased by 1kg when one man weighing 60 kg is replaced by a new person. Weight of new person is

(A) 50 kg
(B) 61 kg
(C) 86 kg
(D) 85 kg

19. A cylindrical cistern of diameter 25 cm is full of water. If 11 litres of water is drawn off, the water level in the cistern will drop by $\left(\text{Use } \pi = \frac{22}{7}\right)$:

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

(B) $12\frac{6}{7}$ cm

(C) $22\frac{2}{5}$ cm

(D) $20\frac{2}{5}$ cm

20. P, Q and R can do a job in 20, 30 and 60 days respectively. The number of days P can do the job if he is assisted by Q and R every third day is

(A) 11 days

(B) 15 days

(C) 17 days

(D) 16 days

21. On a river, B is equidistance from both ends A and C. If a boat can go from A to B and back in 6 hours and from A to C in 8 hours, how long would it take to go from C to A?

(A) 2 hours

(B) 4 hours

(C) 5 hours

(D) 6 hours

22. A student gets 29% marks of an examination but fails by 24 marks. If the pass percentage is 35%, the maximum marks are

(A) 200

(B) 300

(C) 400

(D) 500

23. A man bought an article for ₹ 21. What was the marked price of the article if he had bought the article at 30% discount?

(A) ₹ 30

(B) ₹ 32

(C) ₹ 33·50

(D) ₹ 35

24. 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) 3 months

25. If ₹ 126·50 is divided among A, B and C in the ratio of 2 : 5 : 4, the share of B exceeds that of A by

(A) ₹ 36·50

(B) ₹ 35·50

(C) ₹ 34·50

(D) ₹ 33·50

26. A and B can do a work in 8 days, B and C can do the same work in 12 days. A, B and C together can finish it in 6 days. A and C together will do it in

(A) 4 days

(B) 6 days

(C) 12 days

(D) 8 days

27. The average marks obtained by 9 students was calculated to be 65. Later on it was found that the marks of one student was wrongly read as 76 instead of 67. The correct average is:

(A) 56

(B) 64

(C) 66

(D) 74

28. Keeping the radius of a right circular cone same, if the height of its increased thrice, the volume of it will be increased by:

(A) 100%

(B) 200%

(C) 300%

(D) 400%

**29.** A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely?

(A) 4 hours
(B) 4 hours 15 minutes
(C) 3 hours 15 minutes
(D) 3 hours 45 minutes

**30.** A person lent two equal amounts of money at 12% p.a. for 3·5 years and 5·5 years respectively. If difference between two interests is ₹ 1,800, find total sum lent.

(A) ₹ 6,000
(B) ₹ 7,500
(C) ₹ 12,000
(D) ₹ 15,000

**31.** On a certain some of money, the simple interest for 2 years is ₹ 350 at the rate of 4% per annum. If it was invested at compound interest at the same rate for the same duration as before, how much more interest would be earned?

(A) ₹ 3.50
(B) ₹ 7
(C) ₹ 14
(D) ₹ 35

**32.** A merchant mixes two varieties of wine containing 25% and 13% alcohol. The resultant mixture contains 17% alcohol. Find the quantity of second mixture, if 8 litre of first mixture is taken.

(A) 4 litres
(B) 16 litres
(C) 24 litres
(D) 32 litres

**33.** $\sum_{i=1}^{10}(10 \times i) = ?$

(A) 650
(B) 450
(C) 550
(D) 750

**34.** Rate of income tax is increased from 4% to 5%. However, the total tax liability of a person remains the same as was in the last year. If his income for the last year was ₹ 1,00,000, find his present income.

(A) ₹ 1,25,000
(B) ₹ 90,000
(C) ₹ 80,000
(D) ₹ 75,000

**35.** If a man allows 20% discount on all his articles, the number of the articles sold is increased by 20%. What will be the effect on total sale?

(A) 40% increase
(B) 4% increase
(C) 4% decrease
(D) No effect

**36.** Train A took 35 minutes to cover a distance of 50 km. If the speed of train B is 25% faster than train A, it will cover the same distance in:

(A) 25 minutes
(B) 28 minutes
(C) 30 minutes
(D) 36 minutes

**37.** If selling price of a commodity is increased by ₹ 35, the profit is increased by 7%. Find cost price of the article.

(A) ₹ 245
(B) ₹ 350
(C) ₹ 500
(D) ₹ 700

**38.** 24576, 6144, 1536, 386, 96, 24. Find the odd number of the above series.

(A) 96
(B) 386
(C) 1536
(D) 6144

**39.** Some sweets were to be distributed equally among 175 students of a school. But due to absence of 35 students, each child got 4 more sweets. How many sweets were distributed?

(A) 2400
(B) 2800
(C) 2480
(D) 2680

**40.** A certain amount of money has to be divided between two persons A and B in the ratio 3 : 5. But it was divided in the ratio 2 : 3 and thereby B loses ₹10. What was the amount?

(A) ₹ 250
(B) ₹ 300
(C) ₹ 350
(D) ₹ 400

**41.** If $4^{x+2} = 2^{2x+3} + 2$, then value of $x$ is

(A) –1
(B) 2
(C) –2
(D) 2

**Direction: In the following question, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and answer on the OMR Answer Sheet by filling the circle.**

**42.** 2, 8, 18, 32, 50, ?

(A) 60
(B) 66
(C) 72
(D) 82

**43.** The diagonal of a square is $4\sqrt{2}$ cm. The diagonal of another square whose area is double that of the first square, is

(A) 8cm
(B) $8\sqrt{2}$ cm
(C) 16cm
(D) $4\sqrt{2}$ cm

**44.** Divided ₹ 1,570 between A and B so that ₹ 25 being deducted from A's share and ₹ 45 from B's share, their share becomes 2:3. Find the amount received by A.

(A) ₹ 625
(B) ₹ 628
(C) ₹ 942
(D) ₹ 945

**45.** A man gains 10% by selling an article for a certain price. What is profit/loss if the article is sold for half the price?

(A) 40% loss
(B) 5% loss
(C) 5% profit
(D) 55% profit

**46.** ₹ 2,820 is to be divided among A, B and C such that 3 times A's share is equal to 4 times B's share and 5 times C's share. Find A's share.

(A) ₹ 1,200
(B) ₹ 950
(C) ₹ 705
(D) ₹ 1,655

**47.** The external bisectors of $\angle ABC$ and $\angle ACB$ of $\Delta ABC$ meet at O. $\angle BAC = 70°$, value of $\angle BOC$ = ?

(A) 45°
(B) 55°
(C) 65°
(D) 75°

**48.** Insert the missing number:

10, 5, 13, 10, 16, 20, 19, _____

(A) 22
(B) 40
(C) 38
(D) 23

**49.** If A exceeds B by 40%, B is less than C by 20%, then A : C is:

(A) 28 : 25
(B) 26 : 25
(C) 3 : 2
(D) 3 : 1

**50.** If the cost price of 120 mangoes is equal to the selling price of 110 mangoes, find the gain or loss percent.

(A) 9%
(B) 10%
(C) $11\frac{1}{9}\%$
(D) $3\frac{1}{11}\%$

**51.** Zinc and copper are in the ratio 5 : 3 in 200gm of an alloy. How much grams of copper be added to make the ratio as 3 : 5?

(A) 72
(B) $\frac{1}{200}$
(C) $133\frac{1}{3}$
(D) 66

**52.** Find the missing number:

| | |
|---|---|
| 14 | 36 |
| 25 | 25 |

| | |
|---|---|
| 20 | 50 |
| 20 | 10 |

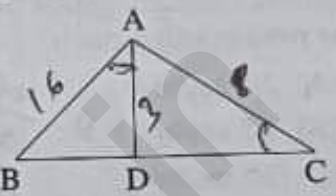
| | |
|---|---|
| 36 | 54 |
| 7 | ? |

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

**53.** If food prices go up by 10%, by how much should a man reduce his consumption so as not to increase his expenditure?

(A) $9\frac{1}{11}\%$
(B) 10%
(C) $11\frac{1}{9}\%$
(D) 11%

**54.** In the adjoining figure, if $\angle ACB = \angle BAD$, AC = 8cm, AB = 16cm and AD = 3cm, then BD = ?




(A) 3cm
(B) 6cm
(C) 2cm
(D) None of the above

**55.** What sum of money lent at 4% p.a. for 3 years will earn same interest as ₹ 1,200 earns in 4 years at 5% p.a. of simple interest?

(A) ₹ 1,000
(B) ₹ 1,500
(C) ₹ 2,000
(D) ₹ 2,500

**Direction: In the question there are two words separated by ':' and the other two separated from the first two by the symbol '::'. Find the relation between two sets of words and select one word from the right side of ':' which have the same relation as left side of the word of '::', find the circle of the letter denoting your selected answer on the OMR Answer Sheet.**

**56.** AB : ZY : : CD : ?

(A) UV
(B) WX
(C) VU
(D) XW

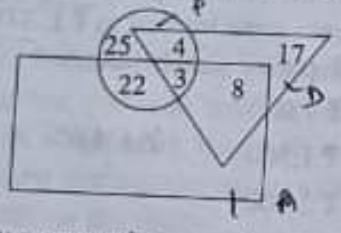
57. A solution of salt and water contains 15% salt. If 4kg of water is evaporated, solution contains 18% salt. Find the original quantity of solution.

(A) 12 kg
(B) 18 kg
(C) 24 kg
(D) 36 kg

58. A man rows down a river 15 km is 3 hrs. with the stream and returns in $7\frac{1}{2}$ hrs. The rate at which he rows in still water is

(A) 2·5 km/hr
(B) 1·5 km/hr
(C) 3·5 km/hr
(D) 4·5 km/hr

Study the figure carefully and answer the question. The triangle represents doctors, the circle represents players and the rectangle represents artists.




59. How many artists are players?

(A) 30
(B) 29
(C) 25
(D) 17

60. The average of 11 results is 32. The average of first five result is 27 and that of the last five result is 34. The sixth result is:

(A) 48
(B) 50
(C) 47
(D) 52

61. The sum of present ages of a father and his son is 36 years. When the son reaches father's present age, the sum of their ages will be 80 years. What is the present age of the son?

(A) 4 years
(B) 7 years
(C) 9 years
(D) 12 years

62. Sum of present ages of A, B and C is 72 years. If 4 years ago, their ages were in the ratio 1 : 2 : 3, find A's present age.

(A) 7 years
(B) 10 years
(C) 12 years
(D) 14 years

63. The value of a machine depreciates @25% p.a. If its present value is ₹ 14,400, what will be its worth after 2 years.

(A) ₹ 8,100
(B) ₹ 9,216
(C) ₹ 10,200
(D) ₹ 10,800

64. In how many years will ₹ 2,000 amount to ₹ 2,420 at 10% per annum compound interest?

(A) 3
(B) $2\frac{1}{2}$
(C) $1\frac{1}{2}$
(D) 2

65. In an examination 58% of the candidates passed in English and 68% passed in Mathematics but 17% failed both in Math and English. If 2150 candidates passed in both the subjects then how many candidates appeared in the examination?

(A) 5000
(B) 6000
(C) 5050
(D) None of the above

**66.** If the ratio of boys and girls in a city is 7:4, which of the following can not be the total number of boys and girls in the city?

(A) 29435417
(B) 57463822
(C) 28444625
(D) 29434526

**67.** The value of

$$\frac{1}{\sqrt{1}+\sqrt{2}}+\frac{1}{\sqrt{2}+\sqrt{3}}+\frac{1}{\sqrt{3}+\sqrt{4}}\cdots+\frac{1}{\sqrt{80}+\sqrt{81}} \text{ is}$$

(A) 9
(B) 7
(C) 8
(D) $\sqrt{80}$

**68.** A group of 15 persons spends ₹ 4,500 in 6 months, find total expenditure of a group of 25 persons in 4 months, if expenditure per person is same in both the cases.

(A) ₹ 2,000
(B) ₹ 3,000
(C) ₹ 4,000
(D) ₹ 5,000

**69.** The ratio of measurement of an interior angle and an exterior angle of a polygon is 3:2. The number of sides of a polygon is

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

**70.** What sum of money will amount to ₹ 3,528 in 2 years at 5% per annum compound interest?

(A) 3,000
(B) 3,200
(C) 32,000
(D) None of the above

**71.** If the radius of a circle is diminished by 10%, then its area is diminished by

(A) 10%
(B) 19%
(C) 20%
(D) 36%

**72.** The average of runs of a cricket player of 10 innings was 32. How many runs must he make in his next innings so as to increase his average of runs by 4?

(A) 76
(B) 70
(C) 4
(D) 2

**73.** Two boats A and B start towards each other from two places, 108 km apart. Speeds of the boats A and B in still water are 12 km/hr and 15 km/hr respectively. If A proceeds down and B up the stream, they will meet after:

(A) 4·5 hours
(B) 4 hours
(C) 5·4 hours
(D) 6 hours

**74.** When water is frozen to ice, its volume increases by 10%. What percent of the volume of ice decreases when it melts to water?

(A) $10\frac{1}{11}\%$
(B) $6\frac{1}{5}\%$
(C) $9\frac{1}{11}\%$
(D) 11%

**Following question is based on letter series. In each series some letters are missing. The missing letters are given in the proper sequence as one of the alternatives. Find the correct alternative in each case and mark the right alternative on the OMR Answer Sheet.**

**75.** *abca__bcaab__aab__aa__ca*

(A) *ccaa*

(B) *accb*

(C) *abac*

(D) *abba*

**Direction: In question, numbers are placed in figures on the basis of some rules. One place in the figure is indicated by the interrogation sign (?). Find out the correct alternative to replace the question mark and indicate your answer by filling the circle of the corresponding letter of alternatives in the OMR Answer Sheet.**

**76.**

| | | |
|---|---|---|
| 11 5 | 15 9 | 21 16 |
| 96 | 144 | ? |

(A) 185

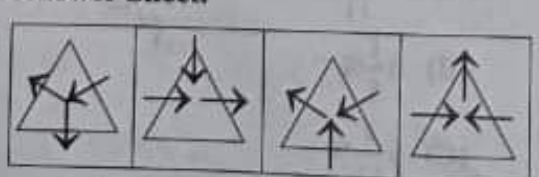
(B) 165

(C) 175

(D) 195

**Direction: In the question three out of four figures are alike in same respect and one is different from others. Find out the odd figure and indicate your answer by filling the circle of the letter denoting your selected answer on the OMR Answer Sheet.**

**77.**



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

**78.** If $x+\frac{1}{x}=-1$, $x^3-1=?$

(A) 0

(B) 1

(C) $-1$

(D) 2

**79.** A sum of ₹ 5,000 amounts to ₹ 6,050 after 2 years at compound interest, interest compounded annually. What is the rate of interest per annum?

(A) 5%

(B) 9%

(C) 10%

(D) 11%

**80.** In 240 cc of a mixture of glycerine and water, the ratio of the volumes of water and glycerine is 1 : 3. How much cc of water should be added with the mixture so that ratio of the volumes of water and glycerine be 2 : 3?

(A) 60 cc

(B) 50 cc

(C) 80 cc

(D) 40 cc

**81.** If the sum of ₹ 500 amounts to ₹ 575 in 3 years, how much will ₹ 600 to in 4 years at the same rate of simple interest?

(A) ₹ 120

(B) ₹ 620

(C) ₹ 650

(D) ₹ 720

**82.** Two pipes A and B can fill a tank in 15 minutes and 20 minutes respectively. Both the pipes are opened together, but after 4 minutes pipe A is turned off. What is the total time required to fill the tank?

(A) 10 min

(B) 11 min 45 sec

(C) 12 min 30 sec

(D) 14 min 40 sec

**83.** Two pipes A and B can fill a cistern in 60 minutes and 48 minutes respectively. Both pipes are opened together. The cistern will be filled in half an hour, if the pipe B is turned off after:

(A) 6 minutes
(B) 18 minutes
(C) 20 minutes
(D) 24 minutes

**84.** The wages of labourers in factory has increased in the ratio 22:25 and their number decreased in the ratio 3 : 2. What was the original wages bill of the factory if the present bill is ₹ 5,000?

(A) ₹ 4,000
(B) ₹ 6,000
(C) ₹ 8,000
(D) ₹ 6,600

**85.** A shopkeeper sold sarees at ₹ 266 each after giving 5% discount on labelled price. If he did not give the discount, he will be able to earn a profit of 12% on the cost price. What was the cost price of each saree?

(A) ₹ 280
(B) ₹ 250
(C) ₹ 240
(D) ₹ 260

**86.** A circular swimming pool is surrounded by a concrete wall 4 ft wide. If the area of the concrete wall surrounding the pool is $\frac{11}{25}$ that of the pool, then the radius of the pool is

(A) 8 ft
(B) 16 ft
(C) 20 ft
(D) 30 ft

**87.** PST : 1 : : NPR : ?

(A) 3
(B) 4
(C) 1
(D) 7

**88.** The external diameter of a conical-coronet made off thermocol is 21 cm in length. To wrap up the outer surface of the coronet with foil, the expenditure will be ₹ 57·75 at the rate of 10*p* per $cm^2$. The height of the coronet is

(A) 14 cm
(B) 28 cm
(C) 7 cm
(D) 10 cm

**Direction: Read the following information and answer the question given below:**

**There are six children playing football namely A, B, C, D, E, F. A and E are brothers; F is the sister of E; C is the only son of A's uncle; B and D are the daughters of the brother of C's father.**

**89.** How D is related to A?

(A) Cousin
(B) Sister
(C) Niece
(D) Uncle

**90.** In an examination, 60% of the candidates passed in English, 70% in Maths and 40% in both subjects. How many students failed in both subjects?

(A) 10%
(B) 20%
(C) 30%
(D) 40%

**91.** If the distance of the point (–12, *y*) from origin is 20 unit, then value of *y* is

(A) ± 15
(B) ± 16
(C) ± 14
(D) None of the above

**92.** The H.C.F. of two natural numbers $a$ and $b$ is $h$ and their L.C.M. is $L$, then value of $a^2 + b^2$ is (Given $h + L = a + b$)

(A) $h^3 + L^3$
(B) $h + L$
(C) $h^2 + L^2$
(D) $h^3 - L^3$

**93.** A and B started a partnership in which A contributed $\frac{1}{4}$ of the capital for 9 months. If A received $\frac{1}{3}$ of the profit, for how long B's capital was invested?

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

**94.** Pipe A can fill a tank in 15 minutes and pipe B can drain 40 litres per minute. If both the pipes are opened together, the cistern is full in 45 minutes, find the capacity of the cistern.

(A) 600 litres
(B) 750 liters
(C) 900 liters
(D) 1800 liters

**95.** The product of $(2-\sqrt{3})(2+\sqrt{5})(4+2\sqrt{3})(\sqrt{5}-2) = ?$

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

**96.** A, B and C enter into a partnership in the ratio $\frac{7}{2}:\frac{4}{3}:\frac{6}{5}$. After 4 months, A increases his share by 50%. If the total profit at the end of one year be ₹ 21,600, then B's share in the profit is

(A) ₹ 21,000
(B) ₹ 2,400
(C) ₹ 3,600
(D) ₹ 4,000

**Direction: In the following question, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and answer on the OMR Answer Sheet by filling the circle.**

**97.** 2, 7, 27, 107, 427, ?

(A) 1262
(B) 1707
(C) 4027
(D) 4207

**98.** A certain sum of money amounts to ₹ 600 in 2 years and ₹ 700 in 4 years at a certain rate of simple interest. Find the rate of interest.

(A) 5%
(B) 8·16%
(C) 10%
(D) 16·33%

**99.** If a sum becomes $\frac{2495}{2000}$ of itself in $4\frac{1}{2}$ years, find the rate of interest p.a.?

(A) 4%
(B) 5%
(C) 5·5%
(D) 6%

**100.** A house worth ₹ 1,50,000 is sold by X at a 5% profit to Y, Y sells the house back to X at a 2% loss. Then find profit and loss in the entire transaction.

(A) X gains ₹ 4,350
(B) X loses ₹ 4,350
(C) X loses ₹ 3,150
(D) X gains ₹ 3,150

**101.** The ratio between two numbers is 5:3. If 3 is added to both the numbers, the ratio becomes 14 : 9. Find the smaller number.

(A) 15
(B) 18
(C) 25
(D) 28

**Here the four fundamental operations +, −, × and ÷ are represented by symbols from the usual one. You have to solve the problem by substituting the real symbol accordingly and indicate your answer by filling the circle of the letter denoting your selected answer on OMR Answer Sheet.**

**102.** If L denotes ×, M denotes ÷, P denotes + and Q denotes −, then 7P24M8Q6M2L3

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

**103.** If 35 is removed from data 30, 34, 35, 36, 37, 38, 39, 40 then the median increases by:

(A) 2
(B) 1·5
(C) 1
(D) 0·5

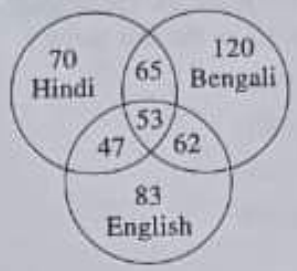
**104.** In an election 75% of the voters cast their votes; out of which 2% are rejected. If the successful candidates secures 9261 votes, which is 75% of the total votes, determine the total number of voters in that centre.

(A) 1680
(B) 168000
(C) 16800
(D) 26800

**105.** The cost of 3 horses is same as the cost of 5 cows. If total cost of 4 horses and 6 cows is ₹ 1,900, find the cost of one horse.

(A) ₹ 50
(B) ₹ 150
(C) ₹ 200
(D) ₹ 250

**Direction: The diagram shows the survey on a sample of 500 persons with respect to their knowledge of Bengali, Hindi and English.**




**106.** How many persons know all the three Languages?

(A) 65
(B) 62
(C) 53
(D) 47

**107.** Find the wrong number in the series:
1, 2, 8, 33, 148, 760, 4626

(A) 8
(B) 33
(C) 148
(D) 760

**108.** Walking at $\frac{5}{4}$ th of the usual speed, a person reaches his office 12 minutes too early. What is the usual time?

(A) 48 minutes
(B) 60 minutes
(C) 70 minutes
(D) 80 minutes

**109.** The present population of a city is 180000. If it increases at the rate of 10% per annum, its population after 2 years will be:

(A) 207800
(B) 227800
(C) 217800
(D) 237800

**110.** 5 men started a business contributing ₹ 20,000 each. Later on 6th men joined the partnership contributing ₹ 2,000 less than the average contribution of all the 6 men. Find the amount contributed by the 6th partner.

(A) ₹ 2,000
(B) ₹ 17,600
(C) ₹ 19,600
(D) ₹ 20,500

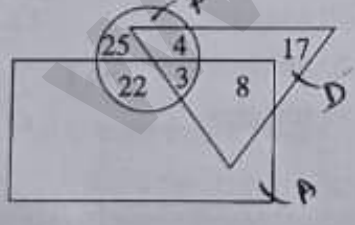
**111.** A man borrowed ₹ 2,500 at 4% p.a. and ₹ 1,800 at 5% p.a. simple interest for the same period. If he pays ₹ 570 as total interest, find the time for which the sums were borrowed.

(A) 2 years
(B) 3 years
(C) 4 years
(D) 5 years

**112.** If $x-y \propto \frac{1}{z}, y-z \propto \frac{1}{x}, z-x \propto \frac{1}{y}$ then sum of three variation constant is:

(A) $-1$
(B) 0
(C) 1
(D) $\pm 1$

Study the figure carefully and answer the question. The triangle represents doctors, the circle represents players and the rectangle represents artists.




**113.** How many doctors are neither players nor artists?

(A) 17
(B) 30
(C) 8
(D) 19

**114.** A and B can do a work in 12 and 15 days respectively. They started the work together but A left after 4 days due to illness. The remaining work was finished by B in:

(A) 5 days
(B) 6 days
(C) 10 days
(D) 12 days

**115.** Ramesh and Rahman can do a work in 20 and 25 days respectively. After doing collectively 10 days of work, they leave the work due to illness and Suresh completes the rest of the work in 3 days. How many days Suresh alone can take to complete the whole work?

(A) 30 days
(B) 32 days
(C) 28 days
(D) 29 days

**116.** The area of the circum circle of the equilateral triangle is 154 $cm^2$. The length of the longest side of the triangle

(A) $7\sqrt{3}$ cm
(B) 7 cm
(C) 3·5 cm
(D) 28 cm

**117.** If $\frac{9^n \times 3^5 \times (27)^3}{3 \times (81)^4} = 27$, then value of $n$ is

(A) 0
(B) 2
(C) 3
(D) 4

**118.** 4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days. In how many days will 10 women complete it?

(A) 35
(B) 40
(C) 45
(D) 50

**119.** If the simple interest on a sum of money for 2 years at 5% per annum is ₹ 50, what is the compound interest on the same sum at the same rate and for the same time?

(A) ₹ 51·25
(B) ₹ 52
(C) ₹ 54·25
(D) ₹ 60

**120.** A train travelling with uniform speed crosses two bridges of lengths 300m and 240m in 21 seconds and 18 seconds respectively. The speed of the train is

(A) 72 km/hr
(B) 68 km/hr
(C) 65 km/hr
(D) 60 km/hr

**121.** A grocer purchased 2kg of rice at the rate of ₹ 15 per kg. and 3kg. of rice at the rate of ₹ 13 per kg. At what price per kg. should he sell the mixture to earn $33\frac{1}{3}\%$ profit on the cost price?

(A) ₹ 28
(B) ₹ 20
(C) ₹ 18·40
(D) ₹ 17·40

**122.** The average of marks of 28 students in Mathematics was 50. Eight students left the school and then this average is increased by 5. What is the average of marks obtained by the students who left the school?

(A) 37·5
(B) 42·5
(C) 45
(D) 50·5

**123.** With an average speed of 40 km/hr, a train reaches the destination on time. If it runs with average speed 35 km/hr, it is late by 15 mins. The length of the total journey is:

(A) 30 km
(B) 180 km
(C) 40 km
(D) 140 km

**124.** If selling an article for ₹ 990 causes 10% loss on the selling price, find its cost price.

(A) ₹ 891
(B) ₹ 900
(C) ₹ 1,100
(D) ₹ 1,089

**125.** A man can row 18 kmph in still water. It takes him thrice as long to row up as to row down the river. Find the rate of stream.

(A) 6 kmph
(B) 9 kmph
(C) 10 kmph
(D) 12 kmph

**126.** A sum of ₹ 1,540 is divided among A, B and C in such a way that A receives $\frac{2}{9}$ as much as B and C together receive, and B receive $\frac{3}{11}$ of what A and C together receive. Find the share of C.

(A) ₹ 280
(B) ₹ 330
(C) ₹ 930
(D) ₹ 980

**127.** If difference between simple interest on a certain sum at 4% for 6 years and at 5% for 4 years is ₹ 28, find the sum.

(A) ₹ 200
(B) ₹ 400
(C) ₹ 500
(D) ₹ 700

**128.** Price of an article increases by 20%. As a result turnover increases by 12%. Find the decrease in quantity sold.

(A) 5%
(B) 6·67%
(C) 6·66%
(D) 5·67%

**129.** If the compound rate of interest for the 1st, 2nd and 3rd year be 4%, 5% and 6% respectively, then find the amount a man will receive at the end of 3 years investing ₹ 25,000.

(A) ₹ 28,938
(B) ₹ 27,938
(C) ₹ 28,948
(D) ₹ 28,937

**130.** The average marks obtained by a group of 10 students is 41 marks. Find the new average if a new student who scored 63 marks is also included in the group.

(A) 39
(B) 40
(C) 43
(D) 45

**131.** In how many years will a sum of money double itself at $6\frac{1}{4}\%$ simple interest per annum?

(A) 16 years
(B) 15 years
(C) 10 years
(D) 20 years

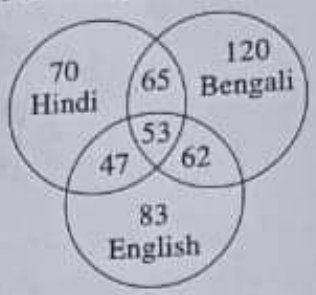
**132.** A man lent ₹ 2,000 partly at 5% and the balance at 4%. If he receives ₹ 92 towards annual interest, find the amount lent at 5%.

(A) ₹ 800
(B) ₹ 900
(C) ₹ 1,000
(D) ₹ 1,200

**133.** A certain sum of money at a certain rate of simple interest becomes double in 5 years. It will become four times in:

(A) $7\frac{1}{2}$ years
(B) 10 years
(C) 15 years
(D) 20 years

**Direction: The diagram shows the survey on a sample of 500 persons with respect to their knowledge of Bengali, Hindi and English.**




**134.** How many persons who do not know Hindi Language?

(A) 265
(B) 200
(C) 255
(D) 201

**135.** In how many years a sum of ₹ 2,500 at 18% simple interest per annum will earn same interest at ₹ 1,500 earns at 10% p.a. in 12 years?

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

**136.** If $a = 2024$, $b = 2023$, $c = 2022$, then the value of $(a^2 + b^2 + c^2 - ab - bc - ca)$ is

(A) 0
(B) 3
(C) 4024
(D) 2012

**137.** Sourima ranks 8th in a class of 35 students. What is his rank from the last?

(A) 26th
(B) 27th
(C) 29th
(D) 28th

**138.** A man had 100 kgs of sugar, part of which he sold at 7% profit and rest at 17% profit. He gained 10 % on the whole. How much did he sell at 7% profit:

(A) 65 kg
(B) 35 kg
(C) 30 kg
(D) 70 kg

**139.** The simplified value of $\left(2-\frac{1}{3}\right)\left(2-\frac{3}{5}\right)\left(2-\frac{5}{7}\right)\cdots\cdots\left(2-\frac{997}{999}\right)$ is

(A) $\frac{5}{999}$
(B) $\frac{1001}{999}$
(C) $\frac{1001}{3}$
(D) $\frac{501}{999}$

**140.** If $x, y, z$ are real and $(x-2)^2+x^2+y^2+2z^2-2yz-2xz=0$; then the value of $(x+y+z)$ is

(A) 2
(B) 8
(C) 6
(D) 10

**141.** Three numbers are in the ratio $\frac{1}{2}:\frac{2}{3}:\frac{3}{4}$. The difference between the greatest and the smallest number is 36. The numbers are

(A) 72, 84, 108
(B) 60, 72, 96
(C) 72, 84, 96
(D) 72, 96, 108

**142.** What is the ratio between times taken by a train 240m long to cross an electric pole and a bridge of 80m length?

(A) 2 : 3
(B) 3 : 4
(C) 4 : 5
(D) 5 : 6

**143.** Present ages of A and B are 50 years and 18 years respectively. In how many years will A be twice as old as B?

(A) 14 years
(B) 15 years
(C) 16 years
(D) 18 years

**144.** If the measures of two angles of a triangle are 65°20′3″ and 54°39′57″, then the circular value of third angle is:

(A) $\pi^c$
(B) $\frac{\pi^c}{2}$
(C) $\frac{\pi^c}{3}$
(D) $\frac{2\pi^c}{3}$

**145.** Bulu and Tathagata can do a work separately in 20 days and 30 days respectively. After working 7 days both of them left away. Then Anita came and completed rest of the work done alone in 10 days. How many days Anita will take to complete the work alone?

(A) 20 days
(B) 25 days
(C) 24 days
(D) None of the above

**146.** Money : Misappropriation : : Writing : ?

(A) Deception
(B) Mistake
(C) Plagiarism
(D) Theft

**147.** The length of each of two parallel chords AB and CD is 12cm. If the length of the radius of the circle is 10cm, then the distance between two chords is:

(A) 12cm
(B) 14cm
(C) 16cm
(D) 18cm

**148.** The shape of the lower portion of a solid is hemisphere and the shape of upper portion of it is right circular cone. If the surface areas of two parts are equal, find the ratio of the radius and height of the cone

(A) $1:\sqrt{3}$
(B) $\sqrt{3}:1$
(C) $2:\sqrt{3}$
(D) $\sqrt{3}:2$

**Direction: In the question there are two words separated by ':' and the other two separated from the first two by the symbol '::'. Find the relation between two sets of words and select one word from the right side of ':' which have the same relation as left side of the word of '::', find the circle of the letter denoting your selected answer on the OMR Answer Sheet.**

**149.** Ocean : Water : : Glacier : ?

(A) Mountain
(B) Cave
(C) Ice
(D) Refrigerator

**150.** A shopkeeper sold an article at 20% loss. Had he sold it at ₹ 200 more, he could have earned a profit of 5%. What is cost price of the article?

(A) 800
(B) 8,000
(C) 700
(D) 600

**151.** If a person walks at 14 km/hr instead of 10 km/hr, he would have walked 20 km more. The actual distance travelled by him is:

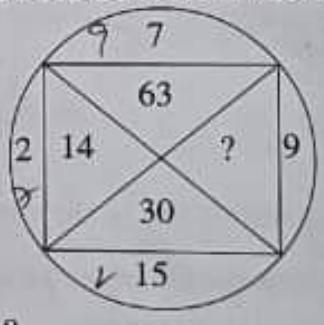
(A) 50 km
(B) 56 km
(C) 70 km
(D) 80 km

**152.** The average weight of 30 students of a class is 45 kg. The average weight of girls is 37kg. and that of boys is 49 kg. Find the number of boys in the class.

(A) 10
(B) 15
(C) 20
(D) 22

**Direction: In question, numbers are placed in figures on the basis of some rules. One place in the figure is indicated by the interrogation sign (?). Find out the correct alternative to replace the question mark and indicate your answer by filling the circle of the corresponding letter of alternatives in the OMR Answer Sheet.**

**153.**




(A) 18
(B) 33
(C) 135
(D) 145

**154.** If A's income is 40% less than that of B, how much percent is B's income more than that of A?

(A) 60%
(B) 40%
(C) $66\frac{2}{3}\%$
(D) $33\frac{1}{3}\%$

**155.** ₹ 4,250 is divided among 4 men, 5 women and 6 boys such that the share of a man, a woman and a boy are in the ratio 9 : 8 : 4. What is the share of a woman?

(A) ₹ 170
(B) ₹ 340
(C) ₹ 425
(D) ₹ 1,700

**156.** The angle of elevation of a ladder leaning against a wall is 60° and the foot of the ladder is 4·7 m away from the wall. The length of the ladder is:

(A) 4·7 m
(B) 9·4 m
(C) 8·4 m
(D) 9·7 m

**157.** Two pipes, P and Q can fill a cistern in 12 and 15 minutes respectively. If both are opened together and at the end of 3 minutes, the first is closed, how much longer will the cistern take to fill?

(A) $8\frac{3}{4}$ minutes
(B) 5 minutes
(C) $8\frac{1}{2}$ minutes
(D) $8\frac{1}{4}$ minutes

**158.** ₹ 10,000 is borrowed at 20% p.a., interest compounded half-yearly. Find the amount repayable after one year.

(A) ₹ 11,000
(B) ₹ 12,000
(C) ₹ 12,100
(D) ₹ 14,400

**159.** A retailer professes to sell his goods at cost price. If using a false weight, he still gains 25%, find the weight he uses in place of 1kg.

(A) 200 grams
(B) 600 grams
(C) 750 grams
(D) 800 grams

**160.** If the sum of three number is 92, 1st and 2nd in the ratio 2 : 3 and 2nd and 3rd in the ratio 3 : 4. The 1st number is:

(A) 20
(B) 22
(C) 24
(D) 26

**161.** A boat running downstream covers 24 km in 4 hours, while for covering the same distance upstream it takes 6 hours. What is the speed of the boat in still water?

(A) 3·5 km/hr
(B) 5·5 km/hr
(C) 6 km/hr
(D) 5 km/hr

**162.** The roots of the equation $\frac{x^2}{x} = 6$

(A) 0
(B) 6
(C) 0, 6
(D) −6

**163.** The difference between simple interest and compound interest on ₹ 1,200 for one year at 10% per annum reckoned half-yearly is

(A) ₹ 2·50
(B) ₹ 3
(C) ₹ 3·75
(D) ₹ 4

**164.** Successive discounts of 50% and 50% is equivalent to

(A) 100%
(B) 75%
(C) 50%
(D) 25%

**Direction: In the question same codes have been used to write words. Try to find out the rule of coding in each case and answer as per direction in the OMR Answer Sheet.**

**165.** In a coding system. TIE = 34, NOW = 52, then what will be code for WAX = ?

(A) 47
(B) 46
(C) 48
(D) 45

**166.** The marked price of an article is ₹ 1,050. A customer pays ₹ 798 for it with two successive discounts. If the rate of first discount is 20%, the rate of second discount is:

(A) 5%
(B) 6%
(C) 8%
(D) 10%

**167.** The salary of a man is decreased by 50% and then in the next year it is increased by 60%, then the resultant increment of his salary is:

(A) 10%
(B) 15%
(C) –20%
(D) –25%

**168.** Two vessels contain mixture of milk and water in the ratio 5 : 2 and 3 : 1 respectively. Find the ratio of milk and water in the new solution, if two mixtures are mixed in equal amount.

(A) 5 : 2
(B) 3 : 1
(C) 8 : 3
(D) 41 : 15

**169.** A cloth merchant sold half of his cloth at 20% profit, half of the remaining cloth at 20% loss and the rest was sold at its cost price. In the total transaction, his gain or loss will be

(A) 5% profit
(B) Neither loss nor gain
(C) 5% loss
(D) 10% profit

**170.** $\left(\frac{2+\sqrt{3}}{2-\sqrt{3}}+\frac{2-\sqrt{3}}{2+\sqrt{3}}+\frac{\sqrt{3}-1}{\sqrt{3}+1}\right)$ simplifies to

(A) $16-\sqrt{3}$
(B) $4-\sqrt{3}$
(C) $2-\sqrt{3}$
(D) $2+\sqrt{3}$

**171.** A cloth store is offering 'Buy 3, get 1 free'. What is the net percentage discount being offered by the store?

(A) 20%
(B) 25%
(C) 30%
(D) $33\frac{1}{3}\%$

**172.** A pipe can fill a tank with water in 3 hours. Due to leakage in bottom, it takes $3\frac{1}{2}$ hours to fill it. In what time the leak will empty the fully filled tank?

(A) 12 hours
(B) 21 hours
(C) $6\frac{1}{2}$ hours
(D) $10\frac{1}{2}$ hours

**173.** The 5th and 11th term of an A.P. are 41 and 20 respectively. The first term is

(A) 45
(B) 65
(C) 35
(D) 55

**174.** If it is Saturday on January 1, 2000, then January 1, 2001 will be

(A) Monday
(B) Tuesday
(C) Friday
(D) Saturday

175. $\frac{2}{3}$ rd of a number is 26. Find out 25% of the number.

(A) 9·35
(B) 9·45
(C) 9·55
(D) 9·75

176. A shopkeeper marks his goods 20% above cost price, but allows 30% discount for cash. His net loss is

(A) 8%
(B) 10%
(C) 16%
(D) 20%

177. A, B and C together undertook a work for ₹550. A and B together done $\frac{7}{11}$ of the work. Find C's share.

(A) ₹ 50
(B) ₹ 150
(C) ₹ 200
(D) ₹ 350

178. Salary of a person is increased by 20%, then it is decreased by 20%. Change in his salary is:

(A) 4% decreased
(B) 4% increased
(C) 8% decreased
(D) remains same

179. A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price to the printed price of the book is

(A) 45:56
(B) 50:61
(C) 55:69
(D) 99:125

180. A bag contains ₹ 112 in the form of 1-rupee, 50-paise and 10-paise coins in the ratio 3 : 8 : 10. What is the number of 50-paise coins?

(A) 112
(B) 108
(C) 96
(D) 84

181. On selling an article for a certain price, a man loses 30%. What is his loss/profit percent, if he sells the article for double the price?

(A) 60% loss
(B) 15% loss
(C) 40% profit
(D) 30% profit

182. In a hotel 60% had vegetarian lunch while 30% had non-vegetarian lunch and 15% had both types of lunch. If 96 people were present, how many did not eat either type of lunch?

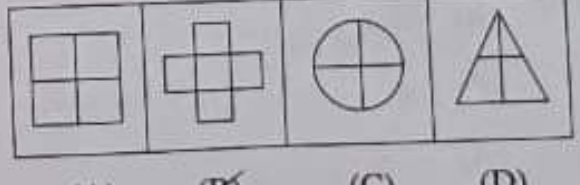
(A) 20
(B) 24
(C) 26
(D) 28

183. If the length of two diagonals of a rhombus are 24 cm and 10 cm, the perimeter of rhombus is

(A) 13 cm
(B) 26 cm
(C) 52 cm
(D) 25 cm

**Direction: In the question three out of four figures are alike in same respect and one is different from others. Find out the odd figure and indicate your answer by filling the circle of the letter denoting your selected answer on the OMR Answer Sheet.**

184.



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

**185.** At the beginning of a year A and B jointly started a business by investing ₹ 17,000 and ₹ 20,000 respectively. After four months, A made a further investment of ₹ 4,000 in this business. If the profit was ₹ 9,520 at the end of the year, find the share of profit of A.

(A) ₹ 4,800
(B) ₹ 4,620
(C) ₹ 4,720
(D) ₹ 4,820

**186.** By selling 60 articles a vendor gains the selling price of 15 articles. His gain in percentage is:

(A) 25
(B) $33\frac{1}{3}$
(C) 20
(D) $28\frac{4}{7}$

**187.** If the radius of a sphere is increased by 2cm, then its surface area increases by $352 cm^2$. The radius of the sphere before the increase was

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

**188.** At what rate percent per annum will a sum of money double in 16 years?

(A) $6\frac{1}{4}\%$
(B) $6\frac{1}{2}\%$
(C) 6%
(D) $5\frac{1}{4}\%$

**189.** Rahim walks 15km towards North. From there he walks 9km towards South. Then he walks 8km towards East. How far and in which direction is he now from his starting point?

(A) 7km North-East
(B) 10km North-East
(C) 10km South-West
(D) 7km South-East

**190.** The difference between the interest receive from two different bank on ₹ 500 for 2 years is ₹ 2·5. Find the difference between their rate of interest.

(A) 25%
(B) 20%
(C) 15%
(D) 10%

**191.** A and B can do a work in 12 days, B and C in 15 days, C and A in 20 days. If A, B and C work together, they will complete the work in

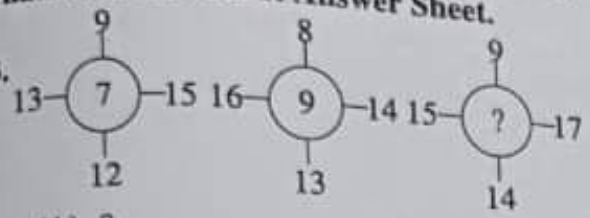
(A) 5 days
(B) 10 days
(C) 12 days
(D) 18 days

**192.** The sum of two numbers is 2490. If 6·5% of one number is equal to 8·5% of the other, the greater number is

(A) 1079
(B) 1380
(C) 1411
(D) 1250

**Direction: In question, numbers are placed in figures on the basis of some rules. One place in the figure is indicated by the interrogation sign (?). Find out the correct alternative to replace the question mark and indicate your answer by filling the circle of the corresponding letter of alternatives in the OMR Answer Sheet.**

**193.**




(A) 8
(B) 7
(C) 9
(D) 6

**194.** 20% loss on selling price is what percent loss on the cost price?

(A) 25%
(B) 15%
(C) $16\frac{2}{3}\%$
(D) $16\frac{1}{3}\%$

**195.** A alone can do a piece of work in 21 days. B who is 40% more efficient than A, will finish the work in:

(A) 10 days
(B) 12 days
(C) 15 days
(D) 18 days

**196.** If the volume of two solid right circular cylinders are same and their height are in the ratio 1:3, then the ratio of lengths of radii is:

(A) $\sqrt{3}:1$
(B) $1:\sqrt{3}$
(C) 1:3
(D) 3:1

**197.** Due to an increase of 50% in the price of eggs, 4 eggs are available for ₹24. The present rate of eggs per dozen is:

(A) ₹24
(B) ₹27
(C) ₹36
(D) ₹42

**Direction: Read the following information and answer the question given below:**

**There are six children playing football namely A, B, C, D, E, F. A and E are brothers; F is the sister of E; C is the only son of A's uncle; B and D are the daughters of the brother of C's father.**

**198.** How C is related to F?

(A) Brother
(B) Uncle
(C) Son
(D) Cousin

**199.** The monthly incomes of two persons are in the ratio 2 : 3 and their monthly expenses are in the ratio 5 : 9. If each of them saves ₹600 per month, then their monthly incomes are

(A) ₹1,500; ₹2,250
(B) ₹1,200; ₹1,800
(C) ₹1,600; ₹2,400
(D) ₹1,400; ₹2,100

**200.** A 270 meters long train running at the speed of 120 kmph crosses another train running in opposite direction at the speed of 80 kmph in 9 seconds. What is the length of the other train?

(A) 230 m
(B) 240 m
(C) 260 m
(D) 320 m