MATHS

BOOKS - S CHAND IIT JEE FOUNDATION

PERCENTAGE AND ITS APPLICATIONS

Solved Examples

1. Evaluate 15.2% of $726 \times 12.8\%$ of 643.

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2. If S is 150 per cent of T, then T is what per cent of S + T ?

3. 30 % of 28% of 480 is same as

(a) 60% of 56% of 240 (b) 15^ of 56% of 240 (c) 60% of 28% of 240 (d) 15% of 28% of 480

4. A number is 68% of the other number. If the sum of these two numbers is 84% of 500, what is the bigger number ?

5. A sugar solution of 3 litres contains 40% sugar. One litre of water is added to this solution. What is the percentage of sugar in the new solution ?

6. Out of the total candidates appeared for a competitive examination, 20% qualified and 10% of the qualified candidates get finally selected. Is 290 candidates were finally selected, then how many candidates appeared ?

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7. A report consists of 20 sheets of 56 lines and such line consists of 65 characters. The

report is reduced into sheets, each of 65 lines such that each line consists of 70 characters. What is the percentage reduction in the number of sheets ?

8. If $a^2 \%$ of $b = b^3 \%$ of c and $c^4 \%$ of $a = b \%$ of b, then the relation between a and b is

(a) a = b (b) $a = b^2$ (c) $a^9 = b^{10}$ (d) $a = b^{10}$

9. A quantity of 30 ml of 20% alcohol is mixed with 20 ml of 25% alcohol. What is the strength of alcohol in the mixture ?

10. A man spends 80% of his income with the increase in the cost of living his expenditure increases by $37\dfrac{1}{2}\%$ and his income increases by $16\dfrac{2}{3}\%$. Find its present per cent saving.

1. (0.9 % of 450) $\div$ (0.2% of 250) = ?

A. 5.04

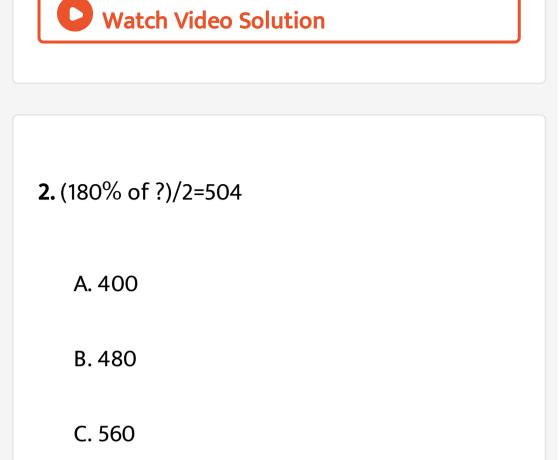B. 7.5

C. 8.1

D. 9.1

Answer: C

2. (180% of ?)/2=504

    A. 400

    B. 480

    C. 560

    D. 600

Answer: C

3. 12% of 980 - ?% of 450 = 30% of 227

A. 14

B. 17

C. 11

D. 8

Answer: C

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4. 80% of 50% of 250% of 34 = ?

A. 34

B. 40

C. 42.5

D. 43

Answer: A

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5. 15% of 45% of a number is 105.3. What is 24% of that number? 374. 4 b. 375 c. 38. 5 d. 390 e. none of these

A. 385.5

B. 374.4

C. 390

D. 375

Answer: B

6. 40% of 60% of $\frac{3}{5}th$ of that number? 175 b. 180 c. 350 d. 360

A. 180

B. 175

C. 360

D. 350

Answer: D

7. x% of x is the same as 10% of

A. $\dfrac{x}{10}$

B. $\dfrac{x^2}{10}$

C. $\dfrac{x^3}{10}$

D. $\dfrac{x}{100}$

Answer: B

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8. A period of 4 hours 30 min is what percent of a day?

A. $18\dfrac{3}{4}$ %

B. 20 %

C. $16\dfrac{2}{3}$ %

D. 19 %

Answer: A

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9. Two-third of one-seventh of a number is 87.5% of 240. What is the number?

    A. 2670

    B. 2450

    C. 2205

    D. 1470

Answer: C

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10. In a shipment of 120 machine parts, 5 per cent were defective. In a shipment of 80 machine parts, 10 per cent were defective. For the two shipments combined, what per cent of the machine parts were defective?

A. 6.5 %

B. 7.0 %

C. 7.5 %

D. 8.0 %

Answer: B

11. Which of the following multipliers will cause a number to be increased by 25.3%?

A. 12.53

B. 125.3

C. 1.253

D. 1253

Answer: C

▶

12. A earns $12\dfrac{1}{2}\%$ more than B. If they jointly earn Rs. Rs. 35,700 in a year, then the amount that A earns annually is

    A. Rs. 16,800

    B. Rs. 17,875

    C. Rs. 18,225

    D. Rs. 18,900

Answer: D

13. One litre of water is evaporated from a 6 litre containing 4% sugar. The solution percentage of sugar in the remaining solution is $3\dfrac{1}{3}$ % b. 4 % c. 5 % d. $4\dfrac{4}{5}$ %

A. 4 %

B. 5 %

C. 4.2 %

D. 4.8 %

Answer: D

14. A mixture of water and milk is 40 litres. There is 10%.water in it. How much water should now be added in this mixture so that the new mixture contains 20% water?

    A. 4 litres

    B. 5 litres

    C. 6.5 litres

D. 7.5 litres

Answer: B

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15. 8% of the voters in an election did not cast their votes. In this election, there were only two candidates. The winner by obtaining 48% of the total votes defeated his contestant by 1100 votes. The total number of voters in the election was:
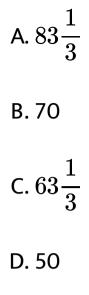
A. 21000

B. 23500

C. 22000

D. 27500

Answer: D

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16. p is six times as large as $q.$ The percent that

q is less than p is $16\dfrac{2}{3}$ b. 60 c. 90 d. $83\dfrac{1}{3}$

A. $83\dfrac{1}{3}$

B. 70

C. $63\dfrac{1}{3}$

D. 50

Answer: A

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17. The population of a village was 9800. In a year, with the tomase In population of males by 8% and that of females by 5%, the pop

ulation of the village became 10458, What was the number of males in the village before in crease?

A. 5600

B. 4200

C. 5400

D. 6048

Answer: A

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18. Prasad's monthly income is 25% more than that of Anam.Anam's monthly Income is 75% less than the Bhushan.If the difference between the monthly Incomes of Prasad and Bhushan is 726,125 then the Anam's monthly income?

(1)78000,(2)216000,(3)79500,(4)210, 080]]

    A. Rs. 8000

    B. Rs. 16000

    C. Rs. 9500

    D. Rs. 10,000

Answer: C

19. If A exceeds B by 40% ,B is less then C by 20% ,then A: C is:

A. $28:25$

B. $26:25$

C. $3:2$

D. $3:1$

Answer: A

20. If X is 90% of y then what percent of X is Y?

90% b. $101\dfrac{1}{9}\%$ c. $11\dfrac{1}{9}\%$ d. 190%

A. 90%

B. 190%

C. $101\dfrac{1}{9}\%$

D. $111\dfrac{1}{9}\%$

Answer: D

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21. Rakesh credits 15% of his salary in his fixed deposit account and spends 30% of the remaining amount on groceries. If the cash in hand is Rs. 2380, what is his salary?

    A. Rs. 5000

    B. Rs. 45000

    C. Rs. 4000

D. Rs. 3500

Answer: C

22. $\dfrac{2}{5}$ of the voters promise to vote for P and the rest promised to vote for Q. Of these, on the last day 25% of the voters went back on their promise to vote for P and 15% of the voters went back on their promise to vote for

and reversed their votes. Q lost by 44 votes.

Then the total number of votes is

A. 200

B. 210

C. 220

D. 110

Answer: A

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23. A store sells boxes of 6 pens for Rs. 30 each and boxes of 12 pens for Rs. 48 each. The price per pen is what per cent less, when purchased in a box of 12 than in a box of 6?

A. 80 %

B. 75 %

C. 50 %

D. 20 %

Answer: D

24. A shopkeeper has a certain number of eggs

of which 5% are found t be broken. He sells

93% of het remainder and still has 266 eggs

left. How many eggs did he originally have?

3800 b. 4000 c. 4200 d. none of these

A. 3800

B. 4000

C. 4200

D. 4800

Answer: B

25. A spider climbed $62\dfrac{1}{2}\%$ of the height of the pole in one hour and in the next hour it covered $12\dfrac{1}{2}\%$ the remaining height. If the height of the pole is 192m, then distance climbed in second hour is $3m\ 5m\ 7m\ 9m$

    A. 3 m

    B. 5m

C. 7 m

D. 9 m

Answer: D

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26. There are two candidates Bhiku and Mhatre for an election. Bhiku gets 65% of the total valid votes. If the total votes were 6000, what is the number of valid votes that the

other candidate Mhatre gets, if 25% of the total votes were declared invalid?

A. 1575

B. 1625

C. 1675

D. 1525

Answer: A

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27. A person saves every year 20% of his income. If his income increases every year by 10%, then his savings increase every year by

A. 10 %

B. 5 %

C. 2 %

D. 1 %

Answer: A

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28. A rainy day occurs once in every 10 days. Half of the rainy days produce rainbows. What per cent of all the days do not produce rainbow?

A. 95 %

B. 10 %

C. 50 %

D. 5 %

Answer: A

29. A cube of white chalk is painted red, and then cut parallel to the sides to form two rectangular solids of equal volumes. What percent of the surface area of each of the new solids is not painted out? (a) 15% (b) $16\frac{2}{3}\%$ (c) 20% (d) 25%

    A. 50 %

    B. 25 %

    C. 20 %

D. 40 %

Answer: B

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30. A large watermelon weighs 20 kg with 96% of its weight being water. It is allowed to stand in the sun and some of the water evaporates so that only 95% of its weight is water. Its. reduced -weight will be $16 \, kg$ b. $16. \, 5 \, kg$ c. $17 \, kg$ d. $18 \, kg$

A. 18 kg

B. 17 kg

C. 16.5 kg

D. 16 kg

Answer: D

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31. The ratio of the prices of two houses A and B was 4 : 5 last year. This year the price of A increased by 25% and that of B by Rs. 50,000.

If their prices are now in the ratio 9 : 10, the price of A last year was,

A. Rs. 3,60,000

B. Rs. 4,50,000

C. Rs. 4,80,000

D. Rs. 5,00,000

Answer: A

32. When a train started from station A, there were certain number of passengers in it. On the next station, $\dfrac{1}{11}$ of these passengers got down and 20% of these got down passengers got into the train. Now if the number of passengers in the train is 510, how many passengers were there at station A?

   A. 600

   B. 580

   C. 560

D. 550

Answer: D

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33. In a test containing of 80 questions carrying one mark each Arpita answered 65% of the first 40 questions correctly. What per cent of the other 40 questions does she need to answer correctly for her grade in the entire exam to be 75%?

A. 60

B. 80

C. 85

D. 75

Answer: C

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34. If a number x is 10% less than another number y and y is 10% more than 12, then x is equal to 123. 75 b. 140. 55 c. 143 d. 150

A. 150

B. 143

C. 140.55

D. 123.75

Answer: D

35. In measuring the sides of a rectangle, errors of 5% and 3% in excess are made. The error per cent in the calculated area is

A. 8.35%

B. 7.15%

C. 8.15%

D. 6.25%

Answer: C

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Self Assessment Sheet 10

1. A number is mistakenly divided by 5 instead of being multiplied by 5 .Find the percentage change in the result due to this mistake

A. 96 %

B. 95 %

C. 2400 %

D. 200 %

Answer: C

2. What is 20% of 50% of 75% of 80 ?

A. 5.5

B. 6

C. 8

D. 6.5

Answer: B

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3. 25% of a number is less than 18% of 650 by 19. The number is

    A. 380.8

    B. 392

    C. 450

    D. 544

Answer: B

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4. In an examination, A got 10% marks less than B. B got 25% marks more than C. C got 20% marks less than D. If A got 360 marks out of 500, the percentage of marks obtained by D was

    A. 70

    B. 75

    C. 80

    D. 85

Answer: C

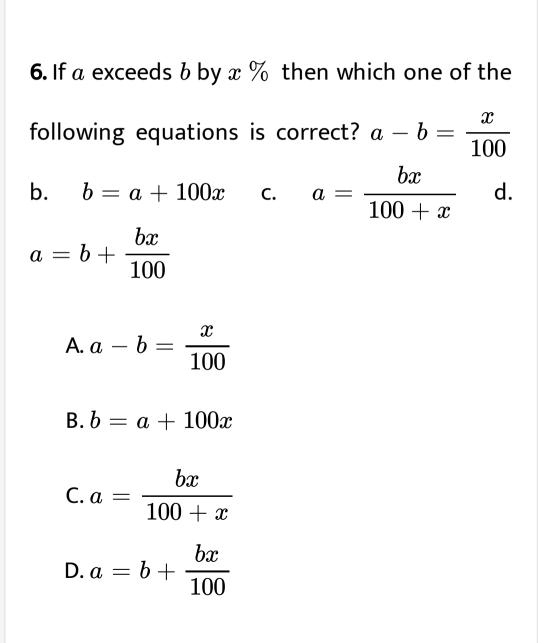**5.** If A's salary is 30% more than that of B, then how much per cent is B's salary less than that of A's?

    A. 30%

    B. 25%

    C. $23\dfrac{1}{3}\%$

    D. $33\dfrac{1}{3}\%$

Answer: C

6. If a exceeds b by $x\ \%$ then which one of the following equations is correct? $a - b = \dfrac{x}{100}$

b. $\quad b = a + 100x$ c. $\quad a = \dfrac{bx}{100 + x}$ d.

$a = b + \dfrac{bx}{100}$

A. $a - b = \dfrac{x}{100}$

B. $b = a + 100x$

C. $a = \dfrac{bx}{100 + x}$

D. $a = b + \dfrac{bx}{100}$

Answer: D

7. In an examination 35% of total students failed n Hindi, 45% failed in English and 20% in both. Find the percentage of those who passed in both the subjects.

A. 20

B. 30

C. 40

D. 80

Answer: C

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8. Half of 1 per cent written as a decimal is :

A. 0.2

B. 0.02

C. 0.05

D. 0.005

Answer: D

9. Salary of a person is first Increased by 20%, then it is decreased by 20%. Change in his salary is :

    A. 4% decrease

    B. 4% increase

    C. 8 % decrease

    D. 20 increase

Answer: A

10. In an examination, there are three papers and a candidate has to get 35% of the total to pass. In one paper, he gets 62 out of 150 and in the second 35 out of 150. How much must he get out of 180, in the third paper to just qualify for a pass? 60. 5 b. 70 c. 68 d. 71

A. 65

B. 62.5

C. 72

D. None of these

Answer: D

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