Find the percentage profit earned by the..

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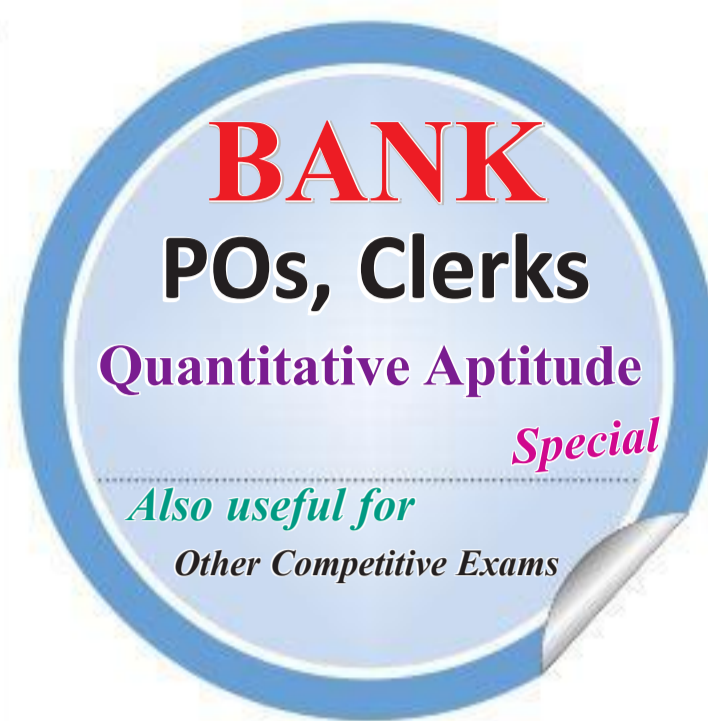*Director, IACE, Hyderabad.*

MODEL QUESTIONS

Directions (Q.No.1-5): What will come in place of the question mark (?) in the following question?

1. $\frac{3}{7}$ of $329 + \frac{4}{11}$ of $2530 = \sqrt{?} + 894$
   a) 28899   b) 29899
   c) 27789   d) 27889
   e) None of these

2. $4376 + 3209 - 1784 + 97 = 3125 + ?$
   a) 2713   b) 2743
   c) 2773   d) 2793
   e) 2737

3. $\sqrt{?} + 14 = \sqrt{2601}$
   a) 1521   b) 1369
   c) 1225   d) 961
   e) 1296

4. 85% of 420 +? % of 1080 = 735
   a) 25   b) 30
   c) 35   d) 40
   e) 45

5. $\frac{7}{5}$ of $58 + \frac{3}{8}$ of $139.2 = ?$
   a) 133.4   b) 137.2
   c) 127.8   d) 131.6
   e) None of these

6. Kishan has some hens and some cows. If the total number of animal-heads are 59 and the total number of feet are 190, how many cows does Kishan have?
   a) 36   b) 32
   c) 23   d) 42
   e) None of these

7. A train covers the first 160 km at a speed of 120 km/h, another 160 km at 140 km/h and the last 160 km at 80 km/h. Find the average speed of the train for the entire journey.
   a) $58\frac{17}{47}$ km/h
   b) $75\frac{15}{47}$ km/h   c) $97\frac{13}{47}$ km/h
   d) $107\frac{11}{47}$ km/h
   e) None of these

8. Rohit has some 50 paisa coins, some Rs. 2 coins, some Rs.1 coins and some Rs. 5 coins. The value of all the coins is 50. Number of 2 coins is 5 more than that of the 5 coins. 50 paise coins are double in number than Rs.1 coins. Value of 50 paise coins and 1 coins is Rs. 26. How many Rs. 2 coins does he have?
   a) 4   b) 2   c) 7
   d) Cannot be determined
   e) None of these

9. In 1 kg mixture of sand and iron, 20% is iron. How much sand should be added, so that the proportion of iron becomes 5%?
   a) 3 kg   b) 4 gm
   c) 5 gm   d) 6 kg

10. P, Q and R have a certain amount of money with themselves. Q has 25% more than what P has and R has 1/5th of what Q has. If P, Q and R together have Rs. 150, then how much money (in Rs.) does P alone have?
    a) 40   b) 70
    c) 80   d) 60
    e) 50

11. Karan starts a business by investing Rs. 60000. Six months later, Shirish joins him by investing Rs. 1,00,000. At the end of one year from commencement of the business, they earn a profit of Rs. 1,51,800. What is the Shirish's share in the profit?
    a) Rs. 55200   b) Rs. 82800
    c) Rs. 62500   d) Rs. 96600
    e) None of these

12. The price of a jewel, passing through three hands, rises on the whole by 65%. If the first and the second sellers earned 20% and 25% profit respectively, find the percentage profit earned by the third seller?
    a) 8%   b) 20%
    c) 25%   d) 10%
    e) None of these

13. Naresh purchased a TV set for Rs. 11250 after getting discount of 10% on the labelled price. He spent Rs. 150 on transport and Rs. 800 on installation. At what price should it be sold, so that the profit earned would have been 15%, if no discount was offered?
    a) Rs. 12938
    b) Rs. 14030   c) Rs. 13450
    d) Rs. 15467   e) None of these

14. If it takes A, 4 days to dig a certain ditch, where as B can dig it in 8 days and A, B, C together can dig it in $2\frac{2}{7}$ days, how long C alone would take to dig it?
    a) 8 days   b) 4 days
    c) 6 days   d) 12 days
    e) 16 days

15. A invested in a certain scheme at the rate of 5% per annum and B at 3% each for 2 yr. If the total sum invested by A and B is Rs. 4000 and the simple interest received by both is same, then find the amount invested by A.
    a) Rs. 1300   b) Rs. 1500
    c) Rs. 2500   d) Rs. 2700
    e) Rs. 2100

Directions (Q.no.16-20): What will come in place of the question mark '?' in the following question?

16. 4000, 2000, 1000, 500, 250, 125,?
    a) 80   b) 65
    c) 62.5   d) 83.5
    e) None of these

17. 2, 14, 84, 420, 1680, 5040,?
    a) 9940   b) 7680
    c) 10080   d) 5040
    e) None of these

18. 22, 23, 27, 36, 52, 77, ?
    a) 111   b) 109
    c) 113   d) 117
    e) 115

19. 15, 16, 14, 17, 13, 18, ?
    a) 24   b) 20
    c) 16   d) 12
    e) None of these

20. 5, 10, 15, 20, 25, ?
    a) 35   b) 40
    c) 25   d) 20
    e) None of these

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Solutions

1. **d;**
   $\frac{3}{7}$ of $329 + \frac{4}{11}$ of $2530 = \sqrt{?} + 894$
   $\Rightarrow 141 + 920 = \sqrt{?} + 894$
   $\Rightarrow 1061 = \sqrt{?} + 894$
   $\Rightarrow \sqrt{?} = 1061 - 894 = 167$
   $\Rightarrow ? = 167 \times 167 = 27889$

2. **c;**
   $4376 + 3209 + 97 - 1784 = 3125 + ?$
   $\Rightarrow 7682 - 1784 = 3125 + ?$
   $\Rightarrow 5898 - 3125 + ?$
   $\therefore ? = 5898 - 3125 = 2773$

3. **b;**
   $\sqrt{?} + 14 = \sqrt{2601}$
   $\Rightarrow \sqrt{?} + 14 = 51$
   $\Rightarrow \sqrt{?} = 51 - 14 = 37$
   $\therefore ? = 37 \times 37 = 1369$

4. **c;**
   $\frac{420 \times 85}{100} + \frac{1080 \times ?}{100} = 735$
   $\Rightarrow 357 + \frac{108 \times ?}{10} = 735$
   $\Rightarrow \frac{108 \times ?}{10} = 735 - 357 = 378$
   $\therefore ? = \frac{378 \times 10}{108} = 35$

5. **a;**
   $81.2 + 52.2 = 133.4$

6. **a;**
   A hen has two legs whereas a cow has four legs. But both of them have one head each.
   Let Kishan has x cows.
   $\therefore$ Number of hens = $59 - x$
   According to the question,
   $4 \times x + (59 - x) \times 2 = 190$
   $4x + 118 - 2x = 190$
   $2x = 190 - 118 = 72$
   $x = \frac{72}{2} = 36$

7. **d;**
   Average speed
   $= \frac{3 \times 120 \times 140 \times 80}{120 \times 140 + 140 \times 80 + 80 \times 120}$
   $= \frac{3 \times 120 \times 140 \times 80}{16800 + 11200 + 9600}$
   $= \frac{4032000}{37600}$
   $= \frac{5040}{47} = 107\frac{11}{47}$ km / h

8. **c;**
   Let the number of Rs. 2 coins = x,
   then number of Rs. 5 coins = $x - 5$
   According to the question,
   $2x + 5(x - 5) = 50 - 26$
   $2x + 5x - 25 = 24$
   $7x = 24 + 25 = 49$
   $x = \frac{49}{7} = 7$

9. **a;**
   Amount of iron in 1 kg mixture
   = 20% of 1000
   $= \frac{20 \times 1000}{100} = 200$ gm
   $\therefore$ Amount of sand in mixture
   $= (1000 - 200) = 800$ gm
   Now, let the total mixture is x kg
   According to the question, 5% of x = 200 gm
   $\Rightarrow \frac{5 \times x}{100} = 200$
   $\therefore x = \frac{200 \times 100}{5} = \frac{20000}{5}$
   = 4000 gm
   $\therefore$ Required answer
   = 4000 − 1000
   = 3000 gm
   = 3 kg

10. **d;**
    Amount with P = Rs. P (let)
    $\therefore$ Amount with
    Q = Rs. $\frac{125P}{100}$ = Rs. $\frac{5P}{4}$
    Amount with R = Rs.
    $\left(\frac{5P}{4} \times \frac{1}{5}\right)$ = Rs. $\frac{P}{4}$
    According to the question,
    $\therefore P + \frac{5P}{4} + \frac{P}{4} = 150$
    $\Rightarrow \frac{4P + 5P + P}{4} = 150$
    $\Rightarrow 10P = 150 \times 4$
    $\therefore P = \frac{150 \times 4}{10}$ = Rs. 60

11. **e;**
    Ratio of the profit = Ratio of the equivalent capitals of Karan and Shirish for 1 month
    = 60,000 × 12 : 1,00,000 × 6
    = 7,20,000 : 6,00,000 = 6 :5
    $\therefore$ Shirish's share in the profit
    = Rs. $\left(\frac{5}{11} \times 151800\right)$
    = Rs. 69000

12. **d;**
    Let the original price of the jewel be Rs. P and let the profit earned by the third seller be x%.
    Then, (100 + x)% of 125% of 120% of P.
    = 165% of P
    $= \left[\frac{(100 + x)}{100} \times \frac{125}{100} \times \frac{120}{100} \times P\right]$
    $= \left(\frac{165}{100} \times P\right)$
    $\Rightarrow (100 + x) = \left(\frac{165 \times 100 \times 100}{125 \times 120}\right) = 110$
    $\Rightarrow x = 10\%$

13. **b;**
    CP of TV for Naresh
    = 11250 + 150 + 800
    = Rs. 12200
    $\therefore$ Required selling price
    $= 12200 \times \frac{115}{100}$
    = Rs. 14030

14. **e;**
    According to the question,
    A's one day work = $\frac{1}{4}$
    B's one day work = $\frac{1}{8}$
    (A + B)'s one day work
    $= \frac{1}{4} + \frac{1}{8} = \frac{3}{8}$
    Similarly, (A + B + C)'s one day work = $\frac{7}{16}$
    $\therefore$ C's one day work
    $= \frac{7}{16} - \frac{3}{8} = \frac{1}{16}$
    Therefore, C can complete the whole work in 16 days.

15. **b;**
    A's investment = Rs. x
    B's investment = Rs. $(4000 - x)$
    $SI = \frac{Principal \times Time \times Rate}{100}$
    100 According to the question,
    $\frac{x \times 5 \times 2}{100} = \frac{(4000 - x) \times 3 \times 2}{100}$
    $\Rightarrow 5x = 12000 - 3x$
    $\Rightarrow 8x = 12000$
    $x = \frac{12000}{8}$ = Rs. 1500

16. **c;**
    4000 2000 1000 500 250 125 **62.5**
      ÷2   ÷2   ÷2   ÷2   ÷2   ÷2

17. **c;**
    2 14 84 420 1680 5040 **10080**
      ×7 ×6   ×5   ×4   ×3   ×2

18. **c;**
    22 23 27 36 52 77 **113**
      +1 +4 +9 +16 +25 +36
      +3 +5 +7 +9 +11

19. **d;**
      +1   +1
    15 16 14 17 13 18 **12**
      −1   −1   −1

20. **e;**
    5 10 15 20 25 **30**
      +5 +5 +5 +5 +5