

Year	Questions	Marks
2012	10	10
2013	10	10
2014	10	10
2015	10	10
2016	10	10
Total	50	50

1. Garima purchased a briefcase with an additional 10% discount on the reduced price after deducting 20% on the labelled price. If the labelled price was 1400, at what price did she purchase the briefcase?
 (A) 980 (B) 1008 (C) 1056 (D) 1120

Answer: B

Solution: Labelled price = Rs.1400

Price after 20% discount = $1400 - 280 = \text{Rs.}1120$

Price after additional 10 % discount = $1120 - 112 = \text{Rs.}1008$

[2012]

2. A man sold a chair and a table together for 760 thereby making a profit of 25% on chair and 10% on table. By selling them together for 767.50, he would have made a profit of 10% on chair and 25% on table. Find the cost price of the table?
 (A) ₹300 (B) ₹315 (C) ₹325 (D) ₹350

Answer: D

Solution: Let the cost price of chair be x and the cost price of table be y

If 25 % of profit on chair and 10% profit on table,

$x + 25\%$ of $x = x + 0.25 x = 1.25 x$ and $y + 10\%$ of $y = y + 0.10 y = 1.10 y$

Therefore, $1.25 x + 1.10 y = 760$ ----- (1)

Similarly, $1.10 x + 1.25 y = 767.50$ ----- (2)

Solving equation (1) and (2) we get $x = 327.50$ and $y = 349.50 \cong 350$

[2013]

3. A man walks a distance of 48 km in a given time. If he walks 2 km an hour faster, he will perform the journey 4 hours before. Find his normal rate of walking?
 (A) 4 km/hr. (B) 6 km/hr. (C) 3 km/hr. (D) 8 km/hr.

Answer: A

Solution: Let the speed of the man be x km/hr. and time taken to cover 48kms hrs.

So, $xt = 48$ (speed \times time = distance) - eq. (1)

With the second piece of information in the question, his speed increased by 2 km/hr. and it takes him 4hrs less to cover the same distance. Therefore, $(x+2)(t-4) = 48$ - eq. (2)

On solving the above two equations using quadratic formula, we find that $x = -6, 4$. Hence, his normal rate of walking is 4km/hr.

[2014]

4. Mohit has two coins, one of 1 denomination and the other of 2 denominations. He tosses the two coins simultaneously. What is the probability that he gets at least one head?

(A) $\frac{1}{4}$ (B) $\frac{1}{2}$ (C) $\frac{3}{4}$ (D) 0

Answer: C

Solution: As mohit has two coins when he tossed both the coins the possible events would be either both are head, 1st is head and 2nd is tail, 1st is tail and 2nd is Head or both are tail.

Total number of events = 4, number of at least one head = 3 hence the probability would be = $\frac{3}{4}$

[2015]

5. Six years hence, a man's age will be three times the age of his son and three years ago he was nine times as old as his son. The present age of the man is _____.
 (A) 28 years (B) 30 years (C) 32 years (D) 34 years

Answer: B

Solution: Three years ago, man's age was 27 years and his son's age was 3 years (nine times more)
 After 6 years, man's age will be 36 years and his son's age will be 9 years (three times)
 So, present age of a man is 30 years. Option B is the correct answer.

[2016]

6. A plot of land in the form of a rectangle has a dimension 240 m × 180 m. A drain let 10 m wide is dug all around it (on the outside) and the earth dug out is evenly spread over the plot, increasing its surface level by 25 cm. The depth of the drain let is _____.
 (A) 1.375 m (B) 1.5 m (C) 1.227 m (D) None of these

Answer: C

Solution: Volume of the earth spread over the plot is equal to Volume of drain let
 Volume of earth spread over the plot = (since earth dug spreads over plot we get a cuboid base is 240 × 180 and h = 25cm = 0.25 m) Assume the drain let depth be x m and the length, breadth and height of side 1 & Side 2 are respectively 260 , 10 , x & 180 , 10 , x
 Volume of drain let = 2 [Volume of side 1] + 2[Volume of side 2] = 8800 then we can write
 10800 = 8800x, x = 1.227 m.

[2012]

7. 15 pastries and 12 biscuit packets have been donated for a school fete. These are to be packed in several smaller identical boxes with the same number of pastries and biscuit packets in each. How many biscuit packets and how many pastries respectively will each box contain?
 (A) 3, 3 (B) 3, 4 (C) 4, 5 (D) 5, 4

Answer: D

Solution: Given that,
 No. of Pastries = 15 and No. of Biscuits = 12
 No. of Identical boxes of pastries and biscuits = GCD of 15 and 12
 15 = 3 × 5 and 12 = 3 × 4 implies GCD of 15 and 12 = 3 Therefore,
 No. of Pastries in a box = 15 / 3 = 5
 No. of Biscuits in a box = 12 / 3 = 4

[2013]

8. Mohan ate half a pizza on Monday. He ate half of what was left on Tuesday and so on. He followed this pattern for one week. How much of the pizza would he have eaten during the week?
 (A) 99.22% (B) 95% (C) 98.22% (D) 100%

Answer: A

Solution:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
$\frac{1}{2}$	$\frac{1}{2 \times 2}$	$\frac{1}{2 \times 2 \times 2}$	$\frac{1}{2 \times 2 \times 2 \times 2}$	$\frac{1}{2 \times 2 \times 2 \times 2 \times 2}$	$\frac{1}{2 \times 2 \times 2 \times 2 \times 2 \times 2}$	$\frac{1}{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}$

So it becomes a Geometric Progression. Sum of n terms of a GP is given by the result $S_n = \frac{a(1-r^n)}{1-r}$

Here, $a = \frac{1}{2}$, $r = \frac{1}{2}$ and $n = 7$.

On substituting the values and solving we get, $S_n = \frac{127}{128} = 99.22\%$

[2014]

9. On a morning walk, three persons step off together and their steps measure 40 cm, 42 cm and 45 cm respectively. What is the minimum distance each should walk so that each can cover the same distance in complete steps?
 (A) 2520 cm (B) 5230 cm (C) 4296 cm (D) 3893 cm

Answer: A

Solution: The minimum distance each should walk so that each can cover the same distance in complete steps we need to get the Least common multiple of 40, 42 and 45 once we do the factorization we get

Factor	1 st number	2 nd Number	3 rd Number
2	40	42	45
2	20	21	45
2	10	21	45
5	5	21	45
3	1	21	9
3	1	7	3
7	1	7	1
	1	1	1

Hence the LCM would be = $2 \times 2 \times 2 \times 5 \times 3 \times 3 \times 7 = 2520$ cm

[2015]

10. A person earns 15% on an investment but losses 10% on another investment. If the ratio of the two investments be 3:5, then what is the gain or loss on the two investments taken together?
 (A) 1.625% loss (B) 13.125% gain (C) 13.125% loss (D) None of these

Answer: D

Solution: Taking the 2 investments to be 3x and 5x respectively

Total income of person = $(3x) \times 1.25 + (5x) \times 0.9 = 8.25$

Therefore, Gain% = $0.25/8 \times 100 = 3.125\%$.

So, option D is the right answer.

[2016]

11. There are three pipes fitted in a tank. First two pipes when operated simultaneously fill the tank in the same time as filled by the third pipe alone. The second pipe fills the tank 7 hours faster than the first pipe and 3 hours slower than the third pipe. The approximate time required by each pipe to fill the tank simultaneously is _____.
 (A) 12hrs, 7hrs, 3hrs (B) $15\frac{1}{2}$ hrs, $8\frac{1}{2}$ hrs, $5\frac{1}{2}$ hrs
 (C) 15hrs, 10hrs, 6hrs (D) 35hrs, 30hrs, 26hrs

Answer: B

Solution: Let x be the time for second pipe, given that first pipe requires time $x + 7$ & third pipe requires $x - 3$ we can assume $x = 8.5$ hrs. Then $x + 7 = 15$ hrs and $x - 3 = 5.5$ hrs. Therefore approximate time required by each pipe to fill the tank simultaneously is $15\frac{1}{2}$ hrs, $8\frac{1}{2}$ hrs, $5\frac{1}{2}$ hrs

[2012]

12. A person was asked to state his age in years. His reply was, "Take my age three years hence, multiply it by 3 and then subtract three times my age three years ago and you will know how old I am." What was the age of the person?
 (A) 18 years (B) 20 years (C) 24 years (D) 32 years

Answer: A

Solution: $(x + 3) \times 3 - 3(x - 3) = 3x + 9 - 3x + 9 = 18$ years

[2013]

13. The price of commodity X increases by 40 paisa every year, while the price of commodity Y increases by 15 paisa every year. If in [2014] the price of commodity X was 4.20 and that of Y was 6.30, in which year commodity X will cost 40 paisa more than the commodity Y?
 (A) 2024 (B) 2021 (C) 2022 (D) 2023

Answer: A

Solution: Let after 'x' years, commodity X costs 40 paisa more than commodity Y.

So, $4.2 + 0.4x = 6.3 + 0.15x + 0.4$

$x = 10$. Hence 2024 becomes the answer.

[2014]

14. A man travels 370 km partly by train and partly by car. If he covers 250 km by train and the rest by car, it takes him 4 hours. But, if he travels 130 km by train and the rest by car, he takes 18 minutes longer. Find the speed of the train and car respectively.
 (A) 80 km/hr, 100 km/hr (B) 98 km/hr, 100 km/hr
 (C) 100 km/hr, 98 km/hr (D) 100 km/hr, 80 km/hr

Answer: D

Solution: 370 km Let the speed of train is T km/hr. and speed of the car is C km/hr. It takes 4 hrs. When the train covers 250 km and the car covers $370 - 250 = 120$ km. It takes 18 minutes extra or $18/60 = 0.3$ hrs. Extra when the train covers 130 km and the car covers $370 - 130 = 240$ km.

Let's write the equation

$$250/T + 120/C = 4 \text{ ----- (1)}$$

$$130/T + 240/C = 4.3 \text{ ----- (2)}$$

$$\text{Multiply the first equation by 2 we get } 500/T + 240/C = 8 \text{ ----- (3)}$$

Subtract equation 2 from equation 3

$$370/T = 3.7 \text{ hence } T = 370/3.7 = 100 \text{ km/hr.}$$

$$\text{Plug } T = 100 \text{ in first equation we get } 2.5 + 120/C = 4$$

$$120/C = 1.5 \Rightarrow C = 120/1.5 = 80 \text{ km/hr.}$$

Hence speed of the Train is 100 km/hr. and speed of the Car is 80 km/hr.

[2015]

15. Amit can complete 14th of a work in 10 days, Varun can complete 13rd of the work in 13 days and Gaurav can complete 40% of the work in 15 days. Who will complete the work first, if they start working together?
 (A) Amit (B) Varun (C) Gaurav (D) all the three will complete at same time

Answer: C

Solution: Amit can complete 1/4th of a work in 10 days. It means he can complete his work in $10 \times 4 = 40$ days.
 Varun can complete 1/3rd of a work in 13 days. It means he can complete his work in $13 \times 3 = 39$ days
 Gaurav can complete 40% of a work in 15 days. It means he can complete his in 37.5 days.
 So, option C is the correct answer.

[2016]

16. Two customers are visiting a particular shop in the same week (Monday to Saturday). Each is equally likely to visit the shop on any one day as one another. Find the probability that both will visit the shop on (i) the same day, (ii) consecutive days?

- (A) $\frac{1}{6}, \frac{3}{18}$ (B) $\frac{1}{5}, \frac{5}{18}$ (C) $\frac{1}{6}, \frac{5}{18}$ (D) $\frac{1}{5}, \frac{3}{18}$

Answer: C

Solution: Total number of days = 6

The same day = $\frac{6}{36} = \frac{1}{6}$

The consecutive days = $\frac{2(\text{pair of days})}{36} = \frac{5 \times 2}{36} = \frac{5}{18}$

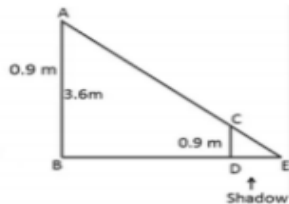
[2012]

17. A girl of height 90 cm is walking away from the base of a lamp-post at a speed of 1.2 m/sec. If the lamp is 3.6 m above the ground, find the length of her shadow after 4 seconds?

- (A) 1.6 m (B) 1.4 m (C) 4.2 m (D) 3.6 m

Answer: A

Solution:



Let lamp post height AB = 3.6 m, height of the girl CD = 90 cm = 0.9 m and walking speed = 1.2 m/sec

The girl walks BD distance in 4 sec, $\rightarrow \text{speed} = \frac{\text{Distance}}{\text{Time}} = \frac{BD}{4} = 1.2 \rightarrow BD = 4.8 \text{ m}$ $\angle ABE = \angle CDE = 90^\circ$

(Since lamp post and girl are standing vertical to the ground)

If two triangles are similar sides, their sides are in proportion

$$\frac{BE}{DE} = \frac{AB}{CD} \rightarrow \frac{BD+DE}{DE} = \frac{AB}{CD} \rightarrow \frac{4.8+DE}{DE} = \frac{3.6}{0.9} \times \frac{10}{10} = \frac{36}{9} = 4$$

$$\frac{4.8+DE}{DE} = 4 \rightarrow 4.8 + DE = 4DE \rightarrow 4.8 = 3DE \rightarrow DE = \frac{4.8}{3} = 1.6 \text{ m}$$

[2013]

18. The total monthly salary of 4 men and 2 women is ₹ 46,000. If a woman earns ₹ 500 more than a man, what is the monthly salary of a woman?

- (A) 6500 (B) 7500 (C) 8000 (D) 9000

Answer: C

Solution: 4men + 2women = 46000 - eq. (1)

Woman = 500 + man - eq. (2)

Solving the two equations, we get woman = 8000.

[2014]

19. The foot of a ladder is 6 m away from a wall and its top reaches a window 8 m above the ground. If the ladder is shifted in such a way that its foot is 8 m away from the wall, to what height does its top reaches?
 (A) 6 m (B) 4 m (C) 5 m (D) 3 m

Answer: A

Solution: A right angled triangle will be formed with the wall and ladder.

Using Pythagoras theorem, the length of the ladder will be $L = \sqrt{(6^2 + 8^2)} = 10m$

Hence if the foot of the ladder is 8 m away from the wall, its top will be reaching $H = \sqrt{(10^2 - 8^2)} = 6m$

[2015]

20. A shopkeeper allows a discount of 10% on the marked price of an item but charges a sales tax of 8% on the discounted price. If the customer pays 680.40 as the price including the sales tax, then what is the marked price of the item?
 (A) 630 (B) 700 (C) 780 (D) None of these

Answer: B

Solution: Formula is $0.9 \times 1.08 \times \text{Price}$ $0.9 \times 1.08 \times 680.40 = \text{Rs.}700$

So, option B is the correct answer.

[2016]

21. A cake of 6 cm radius is divided into 3 sectors with central angles 120° , 150° and 90° respectively. The ratio of the areas of the three sectors is _____.
 (A) 4:3:5 (B) 5:3:4 (C) 3:4:5 (D) 4:5:3

Answer: D

Solution: Ratio of areas = 120:150:90

Dividing by 30 then ratios is 4:5:3

[2012]

22. A person can row boat at the rate of 5 km/hr. in still water. He takes thrice as much time in going 40 km upstream as in going 40 km downstream. Find the speed of the stream?
 (A) 3.4 km/hr. (B) 2 km/hr. (C) 5 km/hr. (D) 2.5 km/hr.

Answer: D

Solution: Let x be the water flow and boat at the rate of 5 km/hr. in water.

Therefore, $(5 + x)$ be the boat at downstream and $(5 - x)$ be the boat at upstream and also d be the distance boat travelling one way. Time for travelling upstream = 3 time for travelling downstream

$$\text{Time} = \frac{\text{distance}}{\text{speed}} = \left(\frac{d}{5-x}\right) = 3 \left(\frac{d}{5+x}\right)$$

$$\text{Time} = d(5 + x) = 3d(5 - x) = 5d + xd - 15d + 3xd = 0$$

$$4xd - 10d = 0$$

$$(4x - 10) d = 0$$

$$\rightarrow (4x - 10) = 0$$

$$4x = 10 \Rightarrow x = \frac{10}{4} = 2.5 \text{ km/hr.}$$

[2013]

23. The members in a welfare committee decided to collect as many paisa' from each member of the committee as is the number of members. If the total collection amounts to ` 96.04, then the number of members in the committee is _____.
 (A) 84 (B) 98 (C) 102 (D) 92

Answer: D

Solution: Let the number of members be x. Then $(x) \times (x) = 96.04$

$$\Rightarrow X^2 = 96.04$$

$$\Rightarrow x = 92$$

[2014]

24. There is a square field whose side is 44 m. A square flower bed is prepared in its Centre leaving a gravel path all around the flower bed. The total cost of laying the flower bed and gravelling the path at 2.75 and 1.50 per square meter respectively, is 4904. Find the width of the gravel path?

(A) 1 m

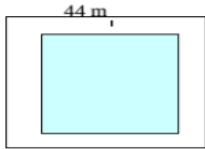
(B) 2 m

(C) 4 m

(D) 6 m

Answer: B

Solution:



Let the squared flower bed is of size x m.

$$\text{Area of the squared field} = 44 \times 44 = 1936 \text{ m}^2$$

$$\text{Area of the flower bed} = x^2 \text{ m}^2$$

$$\text{We can write the cost of laying flower bed and gravelling the path as} = 2.75 \times x^2 + 1.5(1936 - x^2) = 4904$$

$$2.75 x^2 - 1.5 x^2 + 2904 = 4904$$

$$1.25 x^2 = 2000$$

$$X^2 = 2000/1.25 = 1600 \Rightarrow x = 40 \text{ m}$$

$$\text{The width of the gravel path} = (\text{side of square field} - \text{side of flower bed})/2 = (44 - 40) / 2 = 2 \text{ m.}$$

[2015]

25. A father said to his son, "I was as old as you are at present at the time of your birth" If the father's age is 38 years now, the son's age five years back was _____.

(A) 14 years

(B) 19 years

(C) 12 years

(D) 17 years

Answer: A

Solution: Father's age is 38 years now. His age was 19 years at the time of child's birth.

Now, son's age is 19 years and five years back son's age was 14 years old.

So, option A is correct answer.

[2016]

26. A, B, C starts cycling around a circular path in the same direction at same time. The circumference of the path is 2400 m. If the speed of A is 300 m/min, speed of B is 480 m/min and C is 150 m/min and they start from the same point, then after what time interval they will be together at the starting point?

(A) $1\frac{2}{3}$ hrs

(B) $1\frac{1}{3}$ hrs

(C) $3\frac{1}{3}$ hrs

(D) $3\frac{2}{3}$ hrs

Answer: B

Solution: Circumference = 2400m

$$\text{Time for A to complete one round} = \frac{2400}{300} = 8 \text{ min}$$

$$\text{Time for B to complete one round} = \frac{2400}{480} = 5 \text{ min}$$

$$\text{Time for C to complete one round} = \frac{2400}{150} = 16 \text{ min}$$

Time LCM of 16, 8, and 5 are 80m

Therefore A, B, C will be together at the starting point after 80 min = $1\frac{1}{3}$

[2012]

27. A man repays a loan of 3250 by paying 20 in the first month and then increases the payment by 15 every month. How long will it take him to clear the loan?
 (A) 60 months (B) 20 months (C) 15 months (D) 25 months

Answer: B

Solution: $20 + 35 + 50 + 65 + 80 + \dots = 3250$

$$S_n = \left(\frac{n}{2}\right) [2a + (n - 1) d]$$

$$3250 = \left(\frac{n}{2}\right) [2 \times 20 + (n-1)15]$$

$$6500 = n (15n - 25)$$

$$15 n^2 - 25n - 6500 = 0 \ (\div 5)$$

$$n^2 - 5 n - 1300 = 0$$

This implies, $n = -\left(\frac{65}{3}\right) \text{ or } \left(\frac{60}{3}\right)$

We do not consider negative values for months so $n = \left(\frac{60}{3}\right) = 20$ months

[2013]

28. A company produces on an average 4000 items per month for the first 3 months. How many items it must produce on an average per month over the next 9 months, to average 4375 items per month over the whole?
 (A) 4500 (B) 4600 (C) 4680 (D) 4710

Answer: A

Solution: Production in first three months = $4000 \times 3 = 12000$ units.

Let 'x' items be produced over the period of next nine months. So, production = 9x units.

The total average of 12 months = 4375 (given)

Therefore, $\frac{12000+9x}{12} = 4375$ or $x = 4500$.

[2014]

29. A man repays a loan of 3250 by paying 20 in the first month and then increases the payment by 15 every month. How long will it take him to clear the loan?
 (A) 1 year 3 months (B) 1 year 8 months (C) 1 year (D) 1 year 5 months

Answer: B

Solution: In First month he pays INR 20, in 2nd month $20+15 = 35$, in 3rd month $35+15 = 50$

This becomes an arithmetic progression where the first term is $a = 20$

And common difference $d = 50-35 = 35-20 = 15$

The man has to repay a loan of INR 3250. So we can apply the sum formula of A.P.

$$S = n/2 (2a + (n-1) \times d)$$

$$3250 = n/2 (40 + (n-1) \times 15)$$

Multiply both side by 2, we get $6500 = 40n + 15n^2 - 15n = 15n^2 + 25 n$

We can write $15n^2 + 25n - 6500 = 0$ or $3n^2 + 5n - 1300 = 0$

$$3n^2 - 60 n + 65n - 1300 = 0$$

$$3n (n-20) + 65(n-20) = 0, (n-20) (3n+65) = 0$$

So $n = 20$ or $n = -65/3$ as months can't be negative hence it will take 20 months = 1

Year 8 months to repay the loan

[2015]

30. 85 kg of a mixture contains milk and water in the ratio 27:7. How much more water is to be added to get a new mixture containing milk and water in the ratio 3:1?
 (A) 5 kg (B) 6.5 kg (C) 7.25 kg (D) 8 kg

Answer: A

Solution: Milk: water = 27:7

$$85\text{kg} = 27x + 7x$$

$$85 = 34x$$

$$x = 85/34$$

$$x = 2.5$$

$$\text{Milk} = 27x = 27 \times 2.5 = 67.5\text{kg}$$

$$\text{Water} = 7x = 7 \times 2.5 = 17.5\text{kg}$$

$$\text{Now } x = 2.5 \text{ kg}$$

$$2x = 5 \text{ kg}$$

Add 2x to water

$$7x + 2x = 9x$$

Now the ratio of milk and water is 27:9 = 3:1

So 5 kg of water is required. Option A is correct answer

[2016]

31. A trader marks his goods at 20% above the cost price. He sold half the stock at the marked price, one quarter at a discount of 20% on the marked price and the rest at a discount of 40% on the marked price. His total gain is _____.
 (A) 2 % (B) 4.5 % (C) 13.5 % (D) 15 %

Answer: A

Solution: Total Selling price = 60 + (80 % of 30) + 60 % of 30 = 60 + 24 + 18 = Rs.102

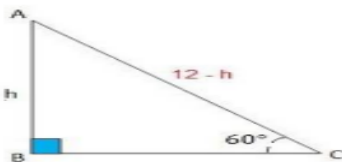
Total gain = 102 – 100 = 2 % (Assuming the cost price of whole stock is 100)

[2012]

32. A tree 12 m high is broken by the wind in such a way that its top touches the ground and makes an angle 60° with the ground. At what height from the bottom the tree is broken by the wind?
 (A) 5.569 m (B) 1.732 m (C) 5.916 m (D) 2.456 m

Answer: A

Solution:



Let the height of the tree be 12 m and height from the bottom where the tree is broken be 'h'. This implies AC = (12 – h). In $\triangle ABC$,

$$\sin 60^\circ = \frac{\text{opp}}{\text{hyp}} \rightarrow \left(\frac{\sqrt{3}}{2}\right) = \left(\frac{h}{12-h}\right)$$

$$\sqrt{3}(12 - h) = 2h \rightarrow (\sqrt{3} + 2)h = 12\sqrt{3}$$

$$h = \frac{12\sqrt{3}}{(\sqrt{3}+2)} = 5.569 \text{ m}$$

[2013]

33. A housewife saved 2.50 in buying an item on sale. If she spent 25 for the item, then how much percent she saved in the transaction approximately?
 (A) 8% (B) 9% (C) 10% (D) 11%

Answer: B

Solution: Percentage saved = $\frac{2.5}{27.5} \times 100 = 9\%$

[2014]

34. A merchant purchases a wrist watch for 450 and fixes the list price in such a way that after allowing a discount of 10% he earns a profit of 20%. The list price of the watch is
 (A) 500 (B) 600 (C) 700 (D) 750

Answer: B

Solution: Cost price of the Wrist watch is = 450 Rupee

The merchant earned a profit of 20%, hence selling price = $450 \times 1.2 = 540$ Rupee

The selling price is 90% of the listed price as the merchant gave the discount of 10%

Hence the Listed price can be calculated as $0.9L = 540 \Rightarrow L = 540/0.9 = 600$ Rupees

[2015]

35. A bank offers 5% p.a. compound interest calculated on half-yearly basis. A customer deposits 1600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is _____.
 (A) 120 (B) 121 (C) 122 (D) 123

Answer: B

Solution: Amount = Rs $[1600 \times (1+5/2 \times 100)^2 + 1600 \times (1+5/2 \times 100)]$

Rs. $[1600 \times 41/40 \times 41/40 + 1600 \times 41/40]$

Rs. $[1600 \times 41/40 (41/40+1)]$

Rs. $[1600 \times 41 \times 81 / 40 \times 40]$

Rs. 3321

Therefore, C.I. = $3321 - 3200 =$ Rs. 121

So, Option B is the correct answer.

[2016]

36. Mohit went from Delhi to Shimla via Chandigarh by car. The distance from Delhi to Chandigarh is 3/4 times the distance from Chandigarh to Shimla. The average speed from Delhi to Chandigarh was one and a half times that from Chandigarh to Shimla. If the average speed for the entire journey was 49 km/hr., what was the average speed from Chandigarh to Shimla?
 (A) 39.2 km/hr. (B) 63 km/hr. (C) 42 km/hr. (D) 35 km/hr.

Answer: C

Solution: Let the distance from Chandigarh to Shimla is x km then the distance from Delhi to Chandigarh

is $\frac{3}{4}x$ km. Let the average speed from Delhi to Chandigarh is $1\frac{1}{2}y = \frac{3}{2}y$

Given average speed for the entire journey is 49 km/hr.

Therefore total distance travelled = $x + \frac{3}{4}x = \frac{7}{4}x$, Total time = $\frac{3x}{2y} \times \frac{2y}{3x} = 49$ then $y = 42$

Thus the average speed from Chandigarh to Shimla is 42 km/hr.

[2012]

37. Along a yard 225 meters long, 26 trees are planted at equal distances, one tree being at each end of the yard. What is the distance between two consecutive trees?
 (A) 8 meters (B) 9 meters (C) 10 meters (D) 15 meters

Answer: B

Solution: The distance between two consecutive trees = $\frac{225}{26} = 8.654 = 9 \text{ m}$

[2013]

38. Rajeev buys goods worth ` 6650. He gets a rebate of 6% on it. After getting the rebate, he pays sales tax @ 10%. Find the amount he will have to pay for the goods?
 (A) 6876.10 (B) 6999.20 (C) 6654 (D) 7000

Answer: A

Solution: Rebate = 6% of 6650 = Rs.399

So, net amount = 6650 – 399 = Rs.6251

Sales tax is charged at 10%, i.e.: Rs.6251 + Rs.625.1

So, final amount paid is Rs.6876.10.

[2014]

39. A man bought 5 shirts at 450 each, 4 trousers at 750 each and 12 pairs of shoes at 750 each. What is the average expenditure per article?
 (A) 678.57 (B) 800 (C) 900 (D) 1000

Answer: A

Solution: Average expenditure per article = Total expenditure / number of articles

$$= (5 \times 450 + 4 \times 750 + 12 \times 750) / (5 + 4 + 12)$$

$$= (2250 + 3000 + 9000) / 21 = 14250 / 21 = 678.57 \text{ Rupees}$$

[2015]

40. Amar has some notes of 10 and 20. The total numbers of notes are 70 and the total amount of money with him is 1,050. Find the number of notes of 10 and 20 with him?
 (A) 30 and 40 (B) 35 and 35 (C) 40 and 30 (D) 45 and 25

Answer: B

Solution: Let the number of Rs. 10 note be x. So, the number of Rs. 20 note is 70-x and total amount is Rs.1050

We have, $10x + 20(70 - x) = 1050$

$$10x + 1400 - 20x = 1050$$

$$10x = 350, x = 35$$

So, Rs. 10 notes are 35 and Rs. 20 notes are 70-x which is 35

Option B is the correct answer.

[2016]

41. In a Printing House, machine P can print one lakh books in 8 hours; machine Q can print the same number of books in 10 hours while machine R can print them in 12 hours. All the machines are started at 9 a.m. While machine P is closed at 11 a.m. and the remaining two machines complete the work. Approximately at what time will the work be finished?
 (A) 11:30 a.m. (B) 12 noon (C) 12:30 p.m. (D) 1 p.m.

Answer: D

Solution: Given P's, Q's & R's one hour work is $\frac{1}{8}, \frac{1}{10}, \frac{1}{12}$ then $P + Q + R = \frac{37}{120}$

Work done by P, Q & R in 2 hrs = $\frac{37}{120} \times 2 = \frac{37}{60}$ Remaining work left = $1 - \frac{37}{60} = \frac{23}{60}$

(Q + R)'s one hour work = $\frac{1}{10} + \frac{1}{12} = \frac{11}{60}$

$\frac{11}{60}$ Work is done by Q & R = 1 hrs. Implies $\frac{23}{60}$ work be done by Q & R = $\frac{60}{11} \times \frac{23}{60} = \frac{23}{11}$ hrs

Therefore the work will be finished approximately two hours after 11am that is 1 pm.

[2012]

42. A lot of 24 bulbs contain 25% defective bulbs. A bulb is drawn at random from the lot. It is found to be not defective and it is not put back. Now, one bulb is drawn at random from the rest. What is the probability that this bulb is not defective?

(A) 18/23 (B) 15/24 (C) 17/23 (D) 20/23

Answer: C

Solution: Out of 24 bulbs 1 bulb is randomly taken that is not defective one. 25% defective bulb among remaining 23 bulbs Probability of getting one bulb from the rest is 25 % of 23 is 17 Probability = 17 /23

[2013]

43. Twenty women can do a work in sixteen days and sixteen men can complete the same work in fifteen days. What is the ratio between the capacity of a man and a woman?

(A) 3:4 (B) 4:3 (C) 5:3 (D) Data inadequate

Answer: B

Solution: 20 women -> 16 days, so 1 woman = 20 x 16 = 320 days

16 men -> 15 days, so 1 man = 16 x 15 = 240 days.

Therefore, ratio of capacity of man and woman = 320:240 = 4:3

[2014]

44. When the capacity of the bucket is 13.5 liter's, 12 buckets of water will fill a tank. How many buckets will be needed to fill the same tank, if the capacity of each bucket is 9 liter's?

(A) 8 (B) 15 (C) 16 (D) 18

Answer: D

Solution: Capacity of the tank = number of bucket x capacity of the bucket = 13.5x12 = 162 liters

As the capacity of the bucket changes to 9 liters

Number of buckets needed = capacity of the tank / capacity of the bucket = 162/9 = 18

[2015]

45. Two pens and three pencils cost ` 86. Four pens and a pencil cost ` 112. Find the cost of a pen and that of a pencil respectively.

(A) 12, 25 (B) 25, 12 (C) 14, 22 (D) 22, 14

Answer: B

Solution: Let the cost of pen and pencil be rs x and rs y respectively

Then, 2x+3y=86..... (1)

4x+y= 112..... (2)

Solving (1) and (2), we get

x=25 and y=12

Cost of a pen is Rs. 25 and cost of pencil is Rs. 12
 Option B is the correct answer.

[2016]

46. A railway half ticket costs half the full fare. But, the reservation charges are the same on the half ticket as on the full ticket. One reserved first class full ticket from Mumbai to Ahmedabad costs 216 while one full and one half reserved ticket costs 327. What is the value of the first class? Full ticket and what is the reservation charge respectively?
 (A) 3, 210 (B) 210, 210 (C) 6, 220 (D) 210, 6

Answer: D

Solution: Let x and y be the ticket cost and reservation cost respectively then $x + y = 216$ (1)

Also $\frac{3}{2}x + 2y = 327$ (2) Since one full and one half first class reserved ticket cost Rs.327

$3x + 4y = 654$ (3)

$3x + 3y = 648$ (4)

Solving above equations $y = 6$ & $x = 210$

Therefore ticket cost and reservation charges are Rs.210 and Rs.6 respectively.

[2012]

47. The mean height of the 10 girls of a class is 1.4 m and the mean height of the 30 boys of the class is 1.45 m. Find the approximate mean height of the 40 students of the class.
 (A) 1.39 m (B) 1.46 m (C) 1.42 m (D) 1.44 m

Answer: D

Solution: Mean height of 40 students of the class = $\frac{1.4 \times 10 + 1.45 \times 30}{40} = 1.4375 \cong 1.44$

[2013]

48. A sum of money is borrowed and paid back in two annual installments of 882 each allowing 5% compound interest. The sum borrowed was _____.
 (A) 1620 (B) 1640 (C) 1680 (D) 1700

Answer: B

Solution: For the first year the interest will be Rs 82 for borrowing the amount Rs 1640.

The person is paid Rs 882 as installment and so the new principal for second year = $1640 + 82 - 882 =$ Rs 840

Now for second year the interest = $840 \times (5/100) =$ RS 42

So the amount = $Rs\ 840 + Rs\ 42 = Rs\ 882$ that is being paid in installment.

[2014]

49. From the salary of a worker, 10% is deducted as house rent, 15% of the rest he spends on children's education and 10% of the balance he spends on clothes. Now, he is left with 1377. His salary is _____.
 (A) ₹2000 (B) ₹2040 (C) ₹2100 (D) ₹2200

Answer: A

Solution: Let's say the salary of the worker is 100 x.

As per given information

Remaining amount after Rent = $100x - 10x = 90x$

Remaining amount after children's education = $90x - 90x \times 15 = 76.5x$

Remaining amount after spending on cloths $76.5x - 7.65x = 68.85x = 1377$

$$x = 1377/68.85 = 20$$

Hence salary of the worker = $100x = 100 \times 20 = 2000$ Rupees

[2015]

50. In a camp, there is a meal for 120 men or 200 children. If 150 children have taken the meal, how many men will be catered to with the remaining meal?

(A) 20

(B) 30

(C) 40

(D) 50

Answer: B

Solution: There is meal for 200 children. 150 children have taken the meal.

Remaining meal is to be catered to 50 children.

Now, 200 children = 120 men

So, 50 Children = $120/200 \times 50 = 30$ men

Option B is the correct answer.

[2016]