

IBPS Clerk Previous Year Question Paper 2016

Quantitative Aptitude (Questions & Solutions)

Q. (1) A boat covers 50 km in 2 hours downstream and covers the same distance in 5 hours upstream. Then find the distance covered in 3 hours in still water?

1. 52.5 km
2. 62.5 km
3. 55 km
4. 58.7 km
5. None of these

Answer: 1 (52.5 km)

Solution:

Distance covered by the boat in both upstream and downstream (D_1) = 50 km

Total time taken by the boat to cover downstream (T_1) = 2 hours

Total time taken by the boat to cover upstream (T_2) = 5 hours

$$\begin{aligned} \text{Therefore, the speed of the boat in still water} &= D_1 / 2 [(1 / T_1) + (1 / T_2)] \\ &= 50 / 2 [(1/2) + (1/5)] = 25 \times 0.7 = 17.5 \text{ km / hr} \end{aligned}$$

$$\begin{aligned} \text{Hence, distance covered by the boat in still water } (D_2) &= \text{Speed} \times \text{Time} \\ &= 17.5 \times 3 = 52.5 \text{ km} \end{aligned}$$

Q. (2) A certain sum at certain time becomes Rs. 5000 at the rate of 12% per annum SI and the same sum amounts to Rs. 2000 at the rate of 4% per annum SI at the same duration. Find the sum and time.

1. Rs. 400, 60 years
2. Rs. 300, 75 years
3. Rs. 800, 55 years
4. Rs. 500, 75 Years
5. None of these

Answer: 4 (Rs. 500, 75 Years)

Solution:

Let A_1 and A_2 be the sum of money at the rate of 12% per annum SI and at the rate of 4% per annum SI respectively.

Therefore, $A_1 - A_2 = 5000 - 2000$

$$\Rightarrow [P + \{(P \times 12 \times T) / 100\}] - [P + \{(P \times 4 \times T) / 100\}] = 3000$$

$$\Rightarrow 8PT/100 = 3000$$

$$\Rightarrow PT = (3000 \times 100) / 8 = 37500$$

Now, at the rate of 12%, S.I. = $PTR / 100 = (37500 \times 12) / 100 = 4500$

Therefore, sum (P) = Rs. (5000 - 4500) = Rs. 500

Hence, time (T) = $37500 / P = 37500 / 500 = 75$ years

Q. (3) The average wage of a worker during a fortnight comprising 15 consecutive working days was Rs. 95 per day. During the first 7 days, his average was Rs. 92 per day and the average wage during the last 7 days was Rs. 97 per day. What was his wage on the 8th day?

1. Rs. 98
2. Rs. 100
3. Rs. 101
4. Rs. 99
5. Rs. 102

Answer: 5 (Rs. 102)

Solution: Given, the average wage of a worker during a fortnight comprising 15 consecutive working days was Rs. 95 per day.

Therefore, total wage he received in the fortnight = $15 \times 95 = \text{Rs. } 1425$

Also, during the first 7 days, his average was Rs. 92 per day

The average wage during the last 7 days = Rs. 97 per day.

Therefore, total wage received in the fortnight excluding the 8th day = $92 \times 7 + 97 \times 7 = 1323$

Hence, his wage on the 8th day = $\text{Rs. } 1425 - 1323 = \text{Rs. } 102$

Q. (4) P is thrice as good a workman as Q and is, therefore, able to finish a piece of work in 60 days less than Q. find the time in which they can do it working together.

1. $22\frac{3}{4}$ days
2. $25\frac{1}{2}$ days
3. $24\frac{1}{2}$ days
4. $22\frac{1}{2}$ days
5. $23\frac{1}{2}$ days

Answer: 4

Solution: Given, the ratio of efficiency of P and Q = 3:1

Therefore, the total efficiency of (P + Q) = 4

Ratio of time taken by P and Q is 1:3

Let, the time taken by P be X days and the time taken by Q be 3X days.

Therefore, the time taken by P alone to complete the work = (time taken by Q alone) – 60 days

$$\Rightarrow X = 3X - 60$$

$$\Rightarrow 2X = 60$$

$$\Rightarrow X = 30 \text{ days}$$

Efficiency of (P+Q) x Time taken by (P+Q) = Efficiency of P x Time taken by P alone

$$\Rightarrow 4 \times \text{Time taken by (P+Q)} = 3 \times 30$$

$$\Rightarrow \text{Time taken by (P+Q)} = (90 / 4) \text{ days} = 22\frac{1}{2} \text{ days}$$

Q. (5) If the numerator of a fraction is increased by 150% and the denominator of the fraction is increased by 350%, the resultant fraction is $\frac{25}{51}$. What is the original fraction?

1. $\frac{11}{17}$
2. $\frac{11}{15}$
3. $\frac{15}{17}$
4. $\frac{13}{15}$
5. None of these

Answer: 3

Solution: Let, the numerator be a and the denominator be b.

According to the question,

$$(5a / 2) / (9b / 2) = 25 / 51$$

$$\Rightarrow 5a / 9b = 25 / 51$$

$$\Rightarrow a / b = (25 / 51) \times (9 \times 5)$$

$$\Rightarrow a / b = 15 / 17$$

Hence, the original fraction = 15 / 17

Directions Q. (6 - 10): What will come in place of the question mark (?) in the following question below?

Q. (6) 97 98 90 117 (?) 178

1. 51
2. 49
3. 53
4. 57
5. None of these

Answer: 3

Solution: The pattern of the given series is as follows:

- $98 = 97 + 1^3$
- $90 = 98 - 2^3$
- $117 = 90 + 3^3$
- $(?) = 117 - 4^3$

Therefore, $(?) = 53$

$$178 = 53 + 5^3$$

Q. (7) 8 11 20 47 (?) 371

1. 128
2. 125
3. 133
4. 129

5. 137

Answer: 1

Solution: The pattern of the given series is as follows:

- $11 = 8 + 3^1$
- $20 = 11 + 3^2$
- $47 = 20 + 3^3$
- $(?) = 47 + 3^4$

Therefore, $(?) = 128$

Now, $371 = 128 + 3^5$

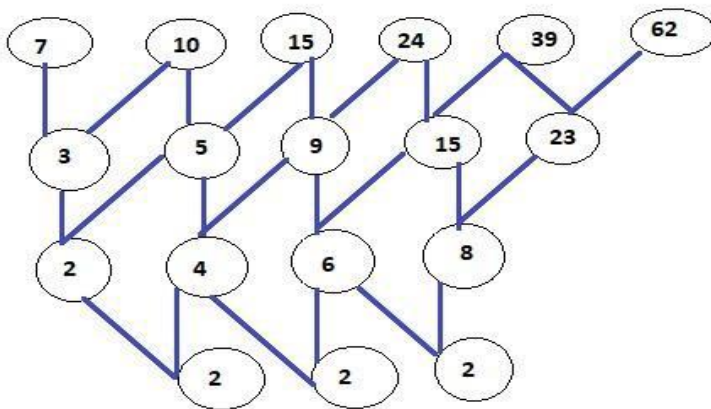
Hence, the required number = 128

Q. (8) 7 10 15 24 39 (?)

1. 57
2. 62
3. 67
4. 58
5. None of these

Answer: 2

Solution:



Q. (9) 5 14 41 122 (?) 1094

1. 361
2. 327

3. 365
4. 348
5. 344

Answer: 3

Solution: The pattern of the given series is as follows:

- $14 = (5 \times 3) - 1$
- $41 = (14 \times 3) - 1$
- $122 = (41 \times 3) - 1$
- $(?) = (122 \times 3) - 1$, i.e. $(?) = 365$

Hence, $1094 = (365 \times 3) - 1$

Q. (10) 18 9 9 13.5 (?) 67.5

1. 21
2. 34
3. 41
4. 27
5. 23

Answer: 4

Solution: The pattern of the given series is as follows:

- $18 \times 0.5 = 9$
- $9 \times 1 = 9$
- $9 \times 1.5 = 13.5$
- $13.5 \times 2 = (?) = 27$
- $27 \times 2.5 = 67.5$

Hence, the required number = 27

Q. (11) 40% of 60% of $\frac{3}{5}$ th of a number is 504. What is 25% of the $\frac{2}{5}$ th of that number?

1. 180
2. 175
3. 360
4. 350
5. None of these

Answer: 350

Solution: Let, the number be y

Therefore, 40% of 60% of $\frac{3}{5}y = 504$

$$\Rightarrow (40/100) \times [(60/100) \times \frac{3}{5}y] = 504$$

$$\Rightarrow y = 3500$$

Hence, 25% of $\frac{2}{5}y = (25/100) \times (\frac{2}{5} \times 3500)$

$$= \frac{1}{4} \times 2 \times 700 = 350$$

Q. (12) At present, Tarun is twice the age of Vishal and half the age of Tanvi. After four years, Tarun will be 1.5 times Vishal's age and Tanvi will be 2.5 times of Vishal's age. What is Tanvi's present age?

1. 12 years
2. 8 years
3. 20 years
4. 16 years
5. None of these

Answer: 4 (16 years)

Solution: Let Tanvi's age be x years.

$$\therefore \text{Tarun's age} = x/2$$

$$\therefore \text{Vishal's age is } x/4 \text{ years}$$

After four years,

$$x + 4 = [(x/4) + 4] \cdot 2.5$$

$$\Rightarrow x + 4 = (2.5x/4) + 10$$

$$\Rightarrow 4x + 16 = 2.5x + 40$$

$$\Rightarrow x = 24/1.5$$

$$\Rightarrow x = 16$$

Q. (13) Two pipes can fill a cistern separately in 24 min and 40 min respectively. A waste pipe is opened which can drain the cistern at 30 liters/minute. If all the pipe are opened together then the cistern fills in one hour. The capacity (in liters) of the cistern is?

1. 800
2. 400
3. 600

4. 500
5. None of these

Answer: 3

Solution: Suppose a waste pipe can drain the cistern in x min. Then,

$$(1/24) + (1/40) - (1/x) = 1/60$$

$$\Rightarrow 1/x = (1/24) + (1/40) - (1/60)$$

$$\Rightarrow 1/x = 6/120$$

$$\Rightarrow 1/x = 1/20$$

$$\Rightarrow x = 20$$

Given, the waste pipe can drain the cistern at 30 L/min.

Hence, capacity of the cistern = $30 \times 20 = 600$ L

Q. (14) Ms. Deepti Jain invests 11% of her monthly salary, i.e., ₹ 5236 in Fixed Deposits. She invests 19% of her monthly salary on Life Insurance Policies, also she invests another 7% of her monthly salary on Mutual Funds. What is the total annual amount invested by Ms. Deepti Jain if the monthly investment for each month is equal?

1. ₹ 211344
2. ₹ 17612
3. ₹ 105672
4. ₹ 35224
5. None of the above

Answer: 1 (₹ 211344)

Solution: Let, the monthly salary of Ms. Deepti be y

Therefore, $y \times (11/100) = 5236$

$$\Rightarrow y = (5236 \times 100) / 11$$

$$\Rightarrow y = 47600$$

Now, the total monthly investment = $47600 \times [(11/100) + (19/100) + (7/100)] \times 12$

$$= 47600 \times (37/100) \times 12$$

$$= 476 \times 37 \times 12$$

$$= 211344$$

Q. (15) Ramlal is a dishonest shopkeeper. The 1 kg weight that he uses actually weighs 600g. How much % profit does he gain on the sale of the item?

1. 50%
2. 25%
3. 20%
4. 66.7%
5. 12.5%

Answer: 4 (66.7%)

Solution: Let the cost price of a 1 kg item be a.

Therefore, the cost price of 600g item = 0.6a.

According to the question, the selling price of 600g of item = Cost price of 1 kg item = a

So, Profit % = $[(a - 0.6a)/0.6a] \times 100$

$$= (0.4a/0.6a) \times 100$$

$$= 66.7\%$$

Directions Q. (16-25): What will come in place of question mark (?) in each of the given series in the following questions?

Q. (16) $73.96 - 18.19 + 17.47 = (?) + 10.91$

1. 62.33
2. 61.43
3. 56.33
4. 54.53
5. None of these

Answer: 1

Solution: $73.96 - 18.19 + 17.47 = (?) + 10.91$

$$\Rightarrow (?) = 73.96 - 18.19 + 17.47 - 10.91$$

$$\Rightarrow (?) = 55.77 + 6.56$$

$$\Rightarrow (?) = 62.33$$

Q. (17) $345 + 25 \times 0.80 - 11 = (?)$

1. 354

2. 666
3. 324
4. 600
5. None of these

Answer: 1

Solution: $(?) = 345 + 20 - 11 = 354$

Q. (18) 26% of 450 - (?) = 12% of 150

1. 101
2. 135
3. 89
4. 99
5. None of these

Answer: 4

Solution: 26 % of 450 = $26 \times 450 / 100$
 $= 26 \times 4.5$
 $= 117.0$

12 % of 150 = $12 \times 150 / 100$
 $= 12 \times 1.5$
 $= 18.0$

Hence, 26% of 450 - (?) = 12% of 150

$\Rightarrow 117 - (?) = 18$

$\Rightarrow (?) = 117 - 18 = 99$

Q. (19) 36% of 650 – 14% of 560 = (?)

1. 147.6
2. 154.7
3. 149.7
4. 155.6
5. None of these

Answer: 4

Solution: 36% of $650 = (36/100) \times 650 = 234$

14% of $560 = (14/100) \times 560 = 78.4$

Hence, 36% of $650 - 14\%$ of $560 = 155.6$

Q. (20) $27 \times 5 + 167 - 32 = (?) - 113$

1. 348
2. 382
3. 383
4. 358
5. None of these

Answer: 3

Solution: $27 \times 5 + 167 - 32 = (?) - 113$

$\Rightarrow 135 + 135 + 113 = (?)$

$\Rightarrow (?) = 383$

Q. (21) $7878 - 4545 + 5454 = (?) + 4444$

1. 4334
2. 3434
3. 4242
4. 4343
5. None of these

Answer: 4

Solution: $7878 - 4545 + 5454 = (?) + 4444$

$\Rightarrow 3333 + 5454 = (?) + 4444$

$\Rightarrow 8787 - 4444 = (?)$

$\Rightarrow (?) = 4343$

Q. (22) $264 \div \sqrt{576} + (11)^2 + 12 = (?)^2$

1. $\sqrt{12}$
2. 14

3. 12
4. $(132)^2$
5. None of these

Answer: 3

Solution: $264 \div \sqrt{576} + (11)^2 + 12 = (?)^2$

$$\Rightarrow 11 + 121 + 12 = (?)^2$$

$$\Rightarrow 144 = (?)^2$$

$$\Rightarrow (?) = 12$$

Q. (23) $92 \times 576 \div 2 \sqrt{1296} = (?)^3 + \sqrt{49}$

1. 3
2. $(9)^2$
3. 9
4. 27
5. None of these

Answer: 3

Solution: $92 \times 576 \div 2 \sqrt{1296} = (?)^3 + \sqrt{49}$

$$\Rightarrow 52992 \div 72 - 7 = (?)^3$$

$$\Rightarrow 729 = (?)^3$$

$$\Rightarrow (9)^3 = (?)^3$$

$$\Rightarrow (?) = 9$$

Q. (24) $(15)^2 - (5)^3 + \sqrt{625} + 44 = (?)$

1. $\sqrt{17}$
2. $\sqrt{13}$
3. 17
4. 13
5. $\sqrt{269}$

Answer: 4

Solution: $(15)^2 - (5)^3 + \sqrt{625} + 44 = (?)^2$

$$\Rightarrow 225 - 125 + 25 + 44 = (?)^2$$

$$\Rightarrow 169 = (?)^2$$

$$\Rightarrow (?) = 13$$

Q. (25) $7960 + 2956 - 8050 + 4028 = (?)$

1. 6984
2. 6884
3. 6894
4. 6954
5. None of these

Answer: 3

Solution: $7960 + 2956 - 8050 + 4028 = (?)$

$$\Rightarrow 10916 - 4022 = (?)$$

$$\Rightarrow (?) = 6894$$

Directions Q. (26 - 30): Study the following table carefully and answer the questions given below:

	Organizations				
Departments	A	B	C	D	E
HR	1050	1015	976	888	1004
Finance	1017	960	786	1025	965
Marketing	1382	1384	1275	1300	1290
Production	1542	1545	1550	1570	1580
Account	786	745	801	800	735
Legal	48	54	36	30	53

Q. (26) The total number of employees working in the legal department is approximately what percent of the total number of employees working in the HR department of all the organizations together?

1. 4
2. 8

3. 12
4. 6
5. 10

Answer: 1

Solution: Total number of employees working in the legal department
 $= 48 + 54 + 36 + 30 + 53 = 221$

Total number of employees working in the HR department
 $= 1050 + 1015 + 976 + 888 + 1004 = 4933$

Therefore, required % = $(221 \times 100) / 4933 = 4$ (approx.)

Q. (27) What is the approximate difference between the average number of people working in the Marketing and Production departments from all the organizations together?

1. 578
2. 231
3. 330
4. 1156
5. 300

Answer: 2

Solution: Average number of people working in the marketing department = 1326.2

Average number of people working in the production department = 1557.4

Therefore, required difference = $1557.4 - 1326.2 = 231$ (approx.)

Q. (28) What is the respective ratio of the total number of employees working in organization A to the total number of employees working in organization E?

1. 225 : 233
2. 71 : 75
3. 75 : 71
4. 233 : 215
5. None of these

Answer: 4

Solution: Total number of employees working in organisation A

$$= 1050 + 1017 + 1382 + 1542 + 786 + 48$$
$$= 5825$$

Total number of employees working in organization E

$$= 1004 + 963 + 1290 + 1580 + 735 + 53$$
$$= 5625$$

Therefore, required ratio = 5825 : 5625

$$= 233 : 225$$

Q. (29) What is the total number of employees from all the departments working in all the organizations together?

1. 26960
2. 28910
3. 28190
4. 29660
5. None of these

Answer: 3

Solution: Total number of employees from all the departments

$$= 5825 + 5703 + 5424 + 5613 + 5625$$
$$= 28190$$

Q. (30) The number of people working in the Finance department from organization B is approximately what percent of the total number of employees working in organization B?

1. 12
2. 15
3. 20
4. 17
5. 25

Answer: 4

Solution: Required % = $(960 \times 100) / 5703 = 17$ (approx.)

Directions Q. (31): What will come in place of question mark (?) in the following question?

$$64\% \text{ of } 750 \div 4 = (?) \div 5$$

1. 24
2. 48
3. 300
4. 600
5. None of these

Answer: 4

Solution: $64\% \text{ of } 750 \div 4 = (?) \div 5$

$$\Rightarrow [(64/100) \times 750] \div 4 = (?)$$

$$\Rightarrow (?) = 120 \times 5 = 600$$

Direction Q. (32): What should come in place of the question mark (?) in the following question?

$$68 \times \sqrt{(?)} - 3421 = 591$$

1. 3249
2. 3481
3. 3364
4. 3136
5. None of these

Answer: 2

Solution: $68 \times \sqrt{(?)} - 3421 = 591$

$$\Rightarrow 68 \times \sqrt{(?)} = 4012$$

$$\Rightarrow \sqrt{(?)} = 4012/68 = 59$$

$$\Rightarrow (?) = 59 \times 59 = 3481$$

Direction Q. (33): What value should come in place of the question mark (?) in the following equation?

$$\sqrt{18} + \sqrt{32} - \sqrt{50} = (?)$$

1. $2\sqrt{2}$
2. $4\sqrt{2}$
3. $3\sqrt{2}$

4. $\sqrt{2}$

Answer: 1

Solution: $\sqrt{18} + \sqrt{32} - \sqrt{50} = (?)$

$$\Rightarrow (\sqrt{9} \times \sqrt{2}) + (\sqrt{16} \times \sqrt{2}) - (\sqrt{25} \times \sqrt{2}) = (?)$$

$$\Rightarrow 3\sqrt{2} + 4\sqrt{2} - 5\sqrt{2} = (?)$$

$$\Rightarrow (?) = 2\sqrt{2}$$

Direction Q. (34): What value should come in place of the question mark (?) in the following equation?

$$41 \times 72 \div 8 \div 3 = (?)$$

1. 133
2. 121
3. 113
4. 131
5. None of these

Answer: 5

Solution: $41 \times 72 \div 8 \div 3 = (?)$

$$\Rightarrow (?) = (41 \times 72) / (8 \times 3) = 123$$

Direction Q. (35): What value should come in place of the question mark (?) in the following equation?

$$31 + 48 \div 8 - 3 \times 6 = (?)$$

1. 204
2. 19
3. 18
4. 194
5. None of these

Answer: 2

Solution: $(?) = 31 + (48/8) - 18$

$$= 31 + 6 - 18$$

$$= 19$$