# IBPS PO Pre 2016 <br> Quant Question Paper with Solution <br> (DOWNLOAD PDF) 

Directions: Study the following table and answer the questions that follow.

|  | Delhi | Mumbai |  |  | Kolkata |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Vehicles sold: | Two Wheelers | Vehicles sold | Two Wheelers | Vehicles sold | Two Wheelers |
| 2001 | 25000 | 14000 | 28000 | 15200 | 22000 | 8000 |
| 2002 | 39000 | 26000 | 33000 | 18600 | 26000 | 7500 |
| 2003 | 43000 | 28000 | 42000 | 28300 | 31000 | 9600 |
| 2004 | 52000 | 31000 | 55000 | 26500 | 38000 | 11500 |

1. What is the average number of two wheelers sold in Mumbai for all these years?
A. 21650
B. 22150
C. 22650
D. 23150
E. 23650
2.In 2003 if Bajaj sold $35 \%$ of the total two wheelers, then what is the total number of vehicles sold by Bajaj across these cities?
A. 22955
B. 23065
C. 23155
D. 23265
E. 22165
3.In 2003 if Bajaj sold $35 \%$ of the total two wheelers, then what is the approximate average number of vehicles sold by Bajaj across these cities?
A. 7700
B. 7500
C. 7400
D. 8700
E. 8100

4.Total number of two wheelers sold in Kolkata from 2001-2004 is what percent of total vehicles sold in Delhi from 2001 to 2003?
A. $32.5 \%$
B. $32.9 \%$
C. $33.3 \%$
D. $33.6 \%$
E. $34.2 \%$
2. What is the difference between percentages of two wheelers sold in Delhi and Kolkata from 2001 - 04? Here percentage is with respect to total number of vehicles in that city.
A. $15 \%$
B. $20 \%$
C. $25 \%$
D. $30 \%$
E. 35\%
6.The average marks in science subject of a class of 20 students is 68 . If the marks of two students were misread as 48 and 65 while the actual marks are72 and 61 respectively, then what would be the correct average?
A. 68.5
B. 69
C. 69.5
D. 70
E. 66
3. In a container, there is 960 ltr of pure milk from which 48 ltr of milk is replaced with 48 ltr of water, again 48 ltr milk is replaced by same amount of water, as this process is done once more. Now, what is the amount of pure milk?
A. 901.54 ltr
B. 821.54 ltr
C. 719.64 ltr
D. 823.08 ttr
E. 829.64 Itr

8.4 years ago, the ratio of $\frac{1}{2}$ of Anita's age at that time and four times of Bablu's age at that time was $5: 12$. Eight years hence, $\frac{1}{2}$ of Anita's age at that time will be less than Bablu's age at that time by 2 years. What is Bablu's present age?
A. 10 years
B. 24 years
C. 9 years
D. 15 years
E. 18 years
9.A, B \& C started a business and invested in the ratio 7:6:5. Next Year, they increased their investment by $25 \%, 20 \%$ and $15 \%$, respectively. In what ratio should profit earned only during $2^{\text {nd }}$ year be distributed?
A. $155: 144: 175$
B. $155: 124: 95$
C. $135: 147: 152$
D. $175: 144: 115$
E. None of the above
10.A shopkeeper gives $20 \%$ discount on the marked price of a book. He provides 1 pair of books free with the sale of 9 pair of books. In the whole transaction, he gets the profit of $26 \%$. By how much percent, the marked price is above the cost price?
A. $35 \%$
B. $65 \%$
C. $75 \%$
D. $26 \%$
E. None of these


Directions: What will come in the place of the question mark (?) in the following number series?
11. 305, 338, 404, 503, 635 , (?)
A. 820
B. 880
C. 800
D. 890
E. None of these

Direction: What should come in place of question mark (?) in the following number series?
12. $1,3,24,360,8640,302400$, ?
A. 1452510
B. 154151
C. 14515200
D. 1542510
E. 1542512

Direction: What should come in place of question mark (?) in the following number series
13. $8,14,26,44,68$, (?)
A. 94
B. 102
C. 96
D. 98
E. None of these

Direction: What will come in place of the question mark (?) in the following number series?
14. 14, 14, 8, 32, -28, ?
A. 121
B. 213
C. 92
D. 120
E. 240


Direction: What value should come at the place of question mark (?) in the given number series?
15. $11,19,40,87,173$, ?
A. 301
B. 311
C. 304
D. 294
E. 350
16.In a single throw with 2 dices, what is probability of neither getting an even number on one and nor a multiple of 3 on other?
A. $11 / 36$
B. $25 / 36$
C. 5/6
D. $1 / 6$
E. None of these
17.8 men can complete a work in 16 days. 16 women can complete the same work in 24 days. In how many days can 4 men and 8 women complete the same work?
A. 8
B. 20
C. 19.2
D. 55
E. 40
18.Both S.I. and C.I. is calculated with a similar rate of $10 \%$ per annum on a sum of rupees. If C.I. is calculated yearly for two years, then for what period must S.I. be evaluated such that S.I. will be equal to C.I.?
A. 4.2 years
B. 2.1 years
C. 1.6 years
D. 1.4 years
E. None of the above

19.A uniformly moving train of length 480 m takes 3 minutes to completely cross a platform. If the same train, with the same speed crosses a pole completely in 30 sec , then the length of the platform is -
A. 1 km
B. 600 m
C. 4.8 km
D. 1.2 km
E. 2.4 km
20.The perimeter of a rectangle whose length is 6 metre more than its breadth is 84 metre. What is the area of the triangle whose base is equal to the diagonal of the rectangle and height is equal to the length of the rectangle?
A. 360 sq metre
B. 380 sq metre
C. 300 sq metre
D. 400 sq metre
E. None of these

Directions: In the following question, two equations numbered I and II are given. You have to solve both the equations and establish the relationship between the given variables:
21. I. $5 x^{2}+28 x=-15$
II. $3 y^{2}+11 y+6=0$
A. $X>Y$
B. $X \geq Y$
C. $X<Y$
D. $X \leq Y$
E. $X=Y$ or the relationship cannot be established


Direction: In the following question, two equations are given in variables $x$ and $y$. You have to solve these equations and determine relation between $x$ and $y$.
22. I. $x^{2}+30 x+81=0$
II. $y^{2}-9 y-162=0$
A. $x>y$
B. $x \geq y$
C. $x<y$
D. $x \leq y$
E. $x=y$ or the relationship can't be established

Direction: In the following question, two equations are given. You have to solve both the equations and give the answer accordingly:
23. I. $2 x^{2}-21 x+54=0$
II. $y^{2}-14 y+49=0$
A. $x=y$ or relation can't be established between $x$ and $y$
B. $x>y$
C. $x<y$
D. $x \geq y$
E. $x \leq y$

Direction: In the following question two equations are given in variables x and $y$. You have to solve these equations and determine the relation between $x$ and $y$.
24. I. $x^{2}-5 x-24=0$
II. $2 y^{2}+19 y+35=0$
A. $x>y$
B. $x \geq y$
C. $x<y$
D. $x \leq y$
E. $x=y$ or relationship between $x$ and $y$ cannot be determined


Directions: In each on the following question two equations are given. You have to solve the equations.
25. I. $x^{2}=529$
II. $y=\sqrt{529}$
A. $x>y$
B. $x \geq y$
C. $x<y$
D. $x \leq y$
E. $x=y$ or relation can't be established.

Direction: Study the following graph carefully and answer the questions given below it.

The graph given below shows the consumption(in thousand tons) of two kinds of Wheat represented by ABC and XYZ in the given years by a village.

26. What was the difference in consumption of ABC and XYZ in 2014?
A. 5 tons
B. 500 tons
C. 600 tons
D. 5000 tons
E. None of these

27.In which of the following years, the consumption of both the types of wheat together was $2^{\text {nd }}$ lowest?
A. 2010
B. 2012
C. 2013
D. 2014
E. None of these
28.In which of the following pair of years, the consumption of type ABC was equal to the consumption of both types of wheat in 2015?
A. 2010 and 2011
B. 2011 and 2015
C. 2010 and 2015
D. 2013 and 2015
E. None of these
29.In how many years, the consumption of Wheat of type $A B C$ was less than the average consumption of Wheat of type XYZ in all the given years?
A. 1
B. 2
C. 3
D. 4
E. 5
30. What is the percent decrease in consumption of ABC in 2014 in comparison to 2012?
A. $25 \%$
B. $10 \%$
C. 8\%
D. $12.5 \%$
E. None of these


Direction: What approximate value should come in place of the question mark (?) in the following equation (Note: You are not expected to calculate the exact value)?
31. $\sqrt{ } 573.987 \times(515)^{1 / 3}+39.969 \times 4.999+6.9891 .987 \times 55.99=?+$ $195.987^{2.989 \div 1.993}$
A. 384
B. 392
C. 410
D. 372
E. 402

Directions : What approximate value should come in place of the question mark (?) in the following equation (Note: You are not expected to calculate the exact value)?
32. $(\mathbf{5 5 . 0 1}+\mathbf{1 6 . 0 0 0 3}) \times \mathbf{2 2 . 0 1} \div \mathbf{1 0 . 9 9 8}=$ ?
A. 190
B. 130
C. 110
D. 142
E. 175

Direction: What approximate value should come in place of the question mark (?) in the following question (Note: You are not expected to calculate the exact value)?
33. $499.99+1999 \div 39.99 \times 50.01=$ ?
A. 3200
B. 2700
C. 3000
D. 2500
E. 2400


Direction: You are required to calculate approximate value of the sums given below
34. $\left[(7.99)^{2}-(13.001)^{2}+(4.01)^{3}\right]^{2}=$ ?
A. -1800
B. 1450
C. -1660
D. 1681
E. -1450

Direction: What approximate value should come in place of the question mark (?) in the following questions? (You are not expected to calculate the exact value.)
35. $21.003 \times 39.998-209.91=126 \times$ ?
A. 5
B. 4
C. 3
D. 2
E. 6


## ANSWERS

1. Ans. B.

Vehicles stored in $2001=15200$
Vehicles stored in $2002=18600$
Vehicles stored in $2003=28300$
Vehicles stored in $2004=26500$
Total vehicles sold $=15200+18600+28300+26500=88600$
Average sale $=88600 / 4=22150$
2. Ans. B.

Vehicles sold in Delhi $=28000$
Vehicles sold in Mumbai $=28300$
Vehicles sold in Kolkata $=9600$
Total Vehicles(two wheelers) Sold $=28000+28300+9600=65900$
Vehicles sold by Bajaj $=35 \%$ of $65900=35 / 100 * 65900=23065$
3. Ans. A.

Vehicles(two wheelers) sold in Delhi $=28000$
Vehicles(two wheelers) sold in Mumbai $=28300$
Vehicles(two wheelers) sold in Kolkata $=9600$
Total Vehicles Sold(two wheelers) $=28000+28300+9600=65900$
Vehicles(two wheelers) sold by Bajaj $=35 \%$ of $65900=35 / 100 * 65900=$ 23065
Average $=23065 / 3=7688.33$
=7700(approx.)
4. Ans. E.

Two wheelers sold in Kolkata in $2001=8000$
Two wheelers sold in Kolkata in $2002=7500$
Two wheelers sold in Kolkata in $2003=9600$
Two wheelers sold in Kolkata in $2004=11500$
Total two wheelers sold in Kolkata $=8000+7500+9600+11500=36600$
Vehicles sold in Delhi in $2001=25000$
Vehicles sold in Delhi in $2002=39000$
Vehicles sold in Delhi in $2003=43000$
Total vehicles sold in Delhi from 2001-03 = 107000
Percentage $=(36600 / 107000) * 100=34.20 \%$

5. Ans. D.

Two wheelers sold in Kolkata in $2001=8000$
Two wheelers sold in Kolkata in $2002=7500$
Two wheelers sold in Kolkata in $2003=9600$
Two wheelers sold in Kolkata in $2004=11500$
Total two wheelers sold in Kolkata $=8000+7500+9600+11500=36600$
Vehicles sold in Kolkata in $2001=22000$
Vehicles sold in Kolkata in $2002=26000$
Vehicles sold in Kolkata in $2003=31000$
Vehicles sold in Kolkata in $2004=38000$
Total vehicles sold in Kolkata $=22000+26000+31000+38000=117000$
Percentage of two wheelers sold in kolkata $=31.28 \%$
Two wheelers sold in Delhi in $2001=14000$
Two wheelers sold in Delhi in $2002=26000$
Two wheelers sold in Delhi in $2003=28000$
Two wheelers sold in Delhi in $2004=31000$
Total two wheelers sold in Delhi $=14000+26000+28000+31000=99000$
Vehicles sold in Delhi in 2001 $=25000$
Vehicles sold in Delhi in $2002=39000$
Vehicles sold in Delhi in $2003=43000$
Vehicles sold in Delhi in $2004=52000$
Total vehicles sold in Delhi $=25000+39000+43000+52000=159000$
Percentage of two wheelers sold in delhi= $62.26 \%$
Difference between percentages $=62.26-31.28=30.98$ Ã 30
6. Ans. B.

Difference of marks $=72+61-48-65=20$
$\therefore$ Correct average marks $=68+\frac{20}{20}=69$
Hence, option B is correct.
7. Ans. D.

Amount of pure milk
$=a(1-b / a)^{n}(\mathrm{n}=3, \mathrm{a}=$ pure milk and $\mathrm{b}=$ amount replaced $)$
$=960(1-48 / 960)^{3}=960(1-1 / 20)^{3}$
$=960 * 19 / 20 * 19 / 20 * 19 / 20$
$=823.08 \mathrm{lt}$.

8. Ans. A.

Let present age of Anita= ' $x$ ' years
And present age of Bablu= ' $y$ ' years
Now, $\frac{\frac{x-4}{2}}{4(y-4)}=5 / 12$
$12 x-48=40 y-160$
$3 x-10 y+28=0$
And,
$\frac{1}{2}(x+8)=(y+8)-2$
$x+8=2 y+12$
$x-2 y=4$
Now, from eqn. (i) \& (ii)
Bablu present age, $\mathrm{y}=10$ years
9. Ans. D.

Let A's investment be=7a
Let B's investment be=6a
Let C's investment be=5a
The profit will be shared in the similar ratio to their investment in 2nd year of partnership.
Hence, their profit for $2^{\text {nd }}$ year $=(125 \%$ of $7 a):(120 \%$ of $6 a):(115 \%$ of $5 a)$
= 175 : 144 : 115
10. Ans. C.

Let us suppose he has to sell 18 books.
Then he will give 1 pair of books extra.
Total books sold is 20 .
CP of 20 books $=20 \mathrm{C} . \mathrm{P}$.
Now since, he gains 26\% in transaction, therefore, SP of 20 books = 1.26* 20
C. $P=25.2 \mathrm{CP}$

Now, actually, the customer paid the price for 18 books only.
So, MP of 18 books $=25.2$ C.P./0.8 $=31.5 \mathrm{CP}$
Now, \% above CP $=(31.5-18) / 18 * 100=13.5 / 18 * 100=75 \%$ ans.


Aliter
Given,
Let the cost price of a single book be Rs. 100.
The cost price of $(9+1)=10$ pair i.e. 20 books = Rs. $(100 \times 20)=$ Rs. 2000. He gets a profit of $26 \%$.
So, the selling price of 9 pair i.e. 18 books $=$ Rs. $2000 \times(126 / 100)=$ Rs. 2520
Then, the selling price of a single book = Rs. $2520 / 18=$ Rs. 140 He gives $20 \%$ discount on the marked price of a book.
That means, when the selling price is Rs. 80 then the marked price is Rs. 100.
$\therefore$ When the selling price of single book is Rs. 140, the marked price $=$ Rs. 140 $\times(100 / 80)=$ Rs. 175
$\therefore$ The percentage increase in marked price from the cost price $=(175-100) \%$ = 75\%.
11. Ans. C.

305, 338, 404, 503, 635, (800) $+33+66+99+132+165$
12. Ans. C.


So, ? = 14515200
13. Ans. D.

The pattern is $+6,+12,+18,+24$ $\qquad$
So the missing term is $=68+30=98$
14. Ans. C.

The pattern of given series is:
$\rightarrow 14+\left(1^{3}-1\right)=14$,
$\rightarrow 14-\left(2^{3}-2\right)=8$,
$\rightarrow 8+\left(3^{3}-3\right)=32$,

$\rightarrow 32-\left(4^{3}-4\right)=-28$,
$\rightarrow-28+\left(5^{3}-5\right)=?=92$,
Thus, the missing number is 92
15. Ans. B.

The pattern of the series is:


Hence, the missing number is 311 .
16. Ans. B.

We first calculate the probability of getting an even number on one and a multiple of 3 on other,
Here, $\mathrm{n}(\mathrm{s})=6 \times 6=36$ and
$\mathrm{E}=(2,3)(2,6)(4,3)(4,6)(6,3)(6,6)(3,2)(3,4)(3,6)(6,2)(6,4)$
$\mathrm{n}(\mathrm{E})=11$
$P(E)=11 / 36$
Required probability $=1-11 / 36=25 / 36$
17. Ans. C.

8 men $* 16$ days $=16$ women $* 24$ days $=$ work
1 men $=3$ women (by equivalence)
Work $=8 \mathrm{men} * 16$ days $=(4 \mathrm{men}+8$ women $) *$ 'k' days
128 man days $=\left(4 \text { men }+8^{*}(1 / 3) \text { men }\right)^{*}$ ' $k$ ' days
128 mandays $=(20 / 3) \mathrm{k}$ mandays
$\mathrm{k}=19.2$ days
18. Ans. B.

Let time period of S.I. be T years. Then for a principal amount, say P,
ATQ, as, S.I. $=$ C.I. for rate $=10 \%$ p.a. and time for C.I. $=2$
$(P \times 10 \times T) / 100=P\left\{[(100+10) / 100]^{2}-1\right\}$
$\mathrm{T} / 10=\left\{[110 / 100]^{2}-1\right\}=\left[(11 / 10)^{2}-1\right]=(121-100) / 100$
$\mathrm{T} / 10=21 / 100$
$\mathrm{T}=21 / 10=2.1$ years

19. Ans. E.

Let length of platform be ' $y$ 'metres.
Then, at the platform,
Distance travelled $=y+$ (length of train) $=(y+480) m$
Then, Speed of train $=(y+480) m /(3 x 60) \sec =(y+480) / 180$
Also, at the pole,
Distance travelled $=$ length of train $=480 \mathrm{~m}$
Then, Speed of train $=480 \mathrm{~m} / 30 \mathrm{sec}=16 \mathrm{~m} / \mathrm{s}$
Equating eq.(1) \& eq.(2), we get,
$(y+480) / 180=16$
$(y+480)=16 \times 180=2880$
$y=2880-480=2400 \mathrm{~m}$ or 2.4 km long platform.
20. Ans. A.

Let the breadth of rectangle be $x \mathrm{~m}$. Then, the length of rectangle $=(x+6)$ m
Perimeter of rectangle $=2(x+x+6) \mathrm{m}$
Therefore, $2(x+x+6)=84 \mathrm{~m}$
$4 x+12=84$
$4 x=84-12$
$4 x=\frac{72}{4}=18$
Therefore, length of rectangle $=18+6=24 \mathrm{~m}=$ height of triangle
Diagonal of rectangle $=\sqrt{18^{2}+24^{2}}=\sqrt{324+576}=\sqrt{900}=30 \mathrm{~m}$
$=$ base of triangle
Therefore, are of triangle $=\frac{1}{2} \times$ base $\times$ height $=\frac{1}{2} \times 24 \times 30=360$ sq. m Hence, option A is correct.
21. Ans. E.

## Ans. E

I. $5 x^{2}+28 x=-15$
$x=(-3 / 5,-5)=(-0.6,-5)$
II. $3 y^{2}+11 y+6=0$
$y=(-3,-2 / 3)=(-3,-0.66)$
So Relationship cannot be established as $x 1>y 1$ but $x 2<y 1$

22. Ans. E.
I. $x^{2}+30 x+81=0$
$\Rightarrow x^{2}+27 x+3 x+81=0$
$\Rightarrow x(x+27)+3(x+27)=0$
$\Rightarrow(x+3)(x+27)=0$
$\Rightarrow x=-3,-27$
II. $y^{2}-9 y-162=0$
$\Rightarrow y^{2}-18 y+9 y-162=0$
$\Rightarrow y(y-18)+9(y-18)=0$
$\Rightarrow(y+9)(y-18)=0$
$\Rightarrow y=-9,18$
Hence, no relationship can be established between $x$ and $y$.
23. Ans. C.
I. $2 x^{2}-21 x+54=0$
$(x-6)(2 x-9)$
$x=+6,+9 / 2$
II. $y^{2}-14 y+49=0$
$(y-7)(y-7)$
$y=+7,+7$
y > x
24. Ans. E.
I. $x^{2}-5 x-24=0$
$\Rightarrow x^{2}-8 x+3 x-24=0$
$\Rightarrow x(x-8)+3(x-8)=0$
$\Rightarrow(x-8)(x+3)=0$
$\Rightarrow x=-3,8$
II. $2 y^{2}+19 y+35=0$
$\Rightarrow 2 y^{2}+14 y+5 y+35=0$
$\Rightarrow 2 y(y+7)+5(y+7)=0$
$\Rightarrow(2 y+5)(y+7)=0$
$\Rightarrow y=-7,-2.5$
So, relationship can't be established.

25. Ans. D.
$x= \pm 23$
And, $y=23$ hence, $x \leq y$
26. Ans. E.

From the Graph,
Consumption of Rice ABC in $2014=21$ thousand tons
Consumption of Rice XYZ in $2014=27$ thousand tons
Required Difference $=(27-21)=6$ thousand tons
27. Ans. B.

As it can be seen from the graph given in question,

| Year | Consumption of type <br> ABC | Consumption of type <br> B | Total Consumption of <br> both types |
| :---: | :---: | :---: | :---: |
| 2010 | 19 | 24 | 43 |
| 2011 | 16 | 18 | 34 |
| 2012 | 24 | 18 | 42 |
| 2013 | 30 | 27 | 57 |
| 2014 | 21 | 27 | 48 |
| 2015 | 18 | 30 | 48 |

Clearly, the consumption of both the types of rice together was $2^{\text {nd }}$ lowest in 2012.
28. Ans. D.

Consumption of both types of rice in $2015=(18+30)$ thousand tons $=48$ thousand tons
Now, let's check the options one by one

## For Option A

Consumption $=(19+16)$ thousand tons $=35$ thousand tons

## For Option B

Consumption $=(16+18)$ thousand tons $=34$ thousand tons

## For Option C

Consumption $=(19+18)$ thousand tons $=37$ thousand tons

## For Option D

Consumption $=(30+18)$ thousand tons $=48$ thousand tons
As it can be seen clearly, option D matches with the consumption amount of 2015.
29. Ans. D.

Average consumption of wheat of type $X Y Z=\frac{24+18+18+27+27+30}{6}=$ $\frac{144}{6}=24$ thousand tons
As it can be seen from the given graph, consumption of wheat of type ABC was less than 24 thousand tons in 4 years, i.e. 2010, 2011, 2014, 2015.
30. Ans. D.

From the graph,
Consumption of type $A B C$ in $2014=21$ thousand tons
Consumption of type $A B C$ in $2012=24$ thousand tons
Difference between consumption of ABC in 2014 in comparison to $2012=(24$ - 21) $=3$ thousand tons

Percentage decrease in consumption of ABC in 2014 in comparison to 2012 $=\frac{3}{24} \times 100 \approx 12.5 \%$
31. Ans. B.

Take nearest values
$\sqrt{ } 570 \times(515)^{1 / 3}+40 \times 5+7^{2} \times 56-196^{3 \div 2}=$ ?
$24 \times 8+200+49 \times 56-14^{3}$
$192+200+2744-2744=392$
32. Ans. D.

## Take nearest values

$(55.01+16.0003) \times 22.01 \div 10.998=$ ?
$71 \times 2=142$
33. Ans. C.

By approximation, we get:

$$
\begin{aligned}
& ?=500+2000 \div 40 \times 50 \\
& =500+(2000 \div 40) \times 50 \\
& =500+50 \times 50 \\
& =500+2500 \\
& =3000
\end{aligned}
$$


34. Ans. D.
$\left[(7.99)^{2}-(13.001)^{2}+(4.01)^{3}\right]^{2}=X$
$X=\left[8^{2}-13^{2}+4^{3}\right]^{2}$
$X=[64-169+64]^{2}$
$X=[-41]^{2}$
X=1681
35. Ans. A.

Take nearest values
$21.003 \times 39.998-209.91=126 \times$ ?
$630=126 \times$ ?
? $=5$ (approx)


