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Inequalities Questions for IBPS RRB SCALE I Mains Exams.

Inequalities Quiz 21

Directions: In each of the following questions, read the given statement and compare the Quantity I and Quantity II on its basis. (only quantity is to be considered)

1. What is the interest obtained?

Quantity I : An amount of Rs. 64000 is invested at 12.5% p.a. compound interest for two years.
Quantity II : An amount of Rs. 40000 is invested at 10% simple interest for 4 years.

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

2. The cost price of a book is Rs. 480. What is the amount of profit (in Rs.)?

Quantity I : The book is marked up by 37.5% and sold after a discount of Rs. 110.
Quantity II : The book is marked up by 50% and sold after a discount of Rs. 160.

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

3. A, B, C and D are the only members of Group X and P, Q, R and S are members of group Y. The average age of X and Y is 34 years and 28 years respectively.

Quantity I : If D leaves, the new average of group X will not be more than 30 years. What is the age of D?
Quantity II : If P leaves the new average of group Y will not be more than 22 years. What is the age of P?

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

4. A and C starts a business with Rs. 16000 and 10000 respectively. 6 months later B joins with Rs X and 't' months after that C leaves the business. The total profit at the end of one year is Rs. 10800.

Quantity I : If X is Rs. 3000 less than the initial investment of A and t = 2, what is the profit share of B?
Quantity II : If X = 10000 and t = 3, what is the profit share of C?

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

5. The salary of B is 36000 and salary of A is 11.11% more than B. C spends Rs. 24000 and saves 42.85% salary. Total expenditure of B and C is Rs. 44000. A saves 40% salary.

Quantity I : What is the total savings of A and B?
Quantity II : What is the sum of expenditure of B and savings of C?

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

6. Quantity I : Cost price of an article is Rs. 2800 and the profit earned by the shopkeeper was 35%. If the discount given by the shopkeeper was 5.5% then find the marked price of the article.

Quantity II : Marked price of an article is Rs. 6400. If the discount given is 15% and profit earned is 36% then find the cost price of the article.

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

7. Quantity I : Farhan lent Rs. 18000 at 20% p.a. compound interest compounded annually for 2 years. Find total interest earned by him.

Quantity II : Ankit deposited Rs. 17600 at 15% p.a. simple interest. Find total interest earned by Ankit in 3 years.

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

8. Quantity I : A train can cross a pole and platform having length 330 m in 8 seconds and 23 seconds respectively. Find the speed of the train.

Quantity II : When the average speed of the car is decreased by 5 Km/h, it reaches its destination nine minutes late. Find the original average speed of the car if the destination is 180 Km far from the starting point.

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

9. Quantity I : A cylinder having curved surface area 2376 cm^2 is to be painted. The cost of painting per cm^2 is Rs. 7. If the radius of the cylinder is 14 cm, then find the total amount required to paint the total surface area of the cylinder.

Quantity II : The length, breadth and the height of a cuboid are 26 m, 19 m and 12 m, respectively. Find the cost of painting the cuboid at Rs. 12 per m^2.

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

10. Quantity I : A and B alone can do a work in 32 days and 24 days, respectively. A alone starts the work and does 50% of the work and leaves the work. If B does the remaining work, then in how many days will the work be completed?

Quantity II : A and B alone can do a work in 40 days and 60 days, respectively. If A starts the work and does 50% of work alone and then B joins A. In how many days will the work be completed?

A. Quantity I > Quantity II
B. Quantity I < Quantity II
C. Quantity I ≤ Quantity II
D. Quantity I ≥ Quantity II
E. Quantity I = Quantity II or relation cannot be established.

Correct Answers:

1	2	3	4	5	6	7	8	9	10
A	B	E	B	B	E	E	B	A	B

Explanation:

1. **Quantity I :** An amount of Rs. 64000 is invested at 12.5% p.a. compound interest for two years.

$CI = 64000 \times (1 + \frac{1}{8})^2 - 64000 = Rs.\ 17000$

Quantity II : An amount of Rs. 40000 is invested at 10% simple interest for 4 years.

$SI = 40000 \times (4 \times \frac{10}{100}) = Rs.\ 16000$

So, QI > QII

Hence, option A is correct.

2. CP = 480

Quantity I : The book is marked up by 37.5% and sold after a discount of Rs. 110

$MP = 480 \times (1 + \frac{3}{8}) = 660$

SP = 660 – 110 = 550

Profit = 550 – 480 = 70

Quantity II : The book is marked up by 50% and sold after a discount of Rs. 160

$MP = 480 \times (1 + \frac{1}{2}) = 720$

SP = 720 – 160 = 560

Profit = 560 – 480 = 80

So, QI < QII

Hence, option B is correct.

3. Total age of X = 4 × 34 = 136 years

Total age of Y = 4 × 28 = 112 years

Quantity I : If D leaves, the new average of group X will not be more than 30 years. What is the age of D?

New total age of X ≤ 3 × 30 or 90

So, age of D ≥ 136 – 90

D ≥ 46 years

Quantity II : If P leaves the new average of group Y will not be more than 22years. What is the age of P?

New total age of Y ≤ 3 × 22 or 66

So, age of P ≥ 112 – 66

P ≥ 46 years

So, QI = QII

Hence, option E is correct.

4. Ratio of time investment of A : B : C = 16000 × 12 : X × 6 : 10000 × (6 + t)

Quantity I : If X is Rs. 3000 less than the initial investment of A and t = 2, what is the profit share of B?

A : B : C = 16000 × 12 : 13000 × 6 : 10000 × (6 + 2)

= 16 × 12 : 13 × 6 : 10 × 8

= 96 : 39 : 40

Profit share of B = $\frac{39}{39 + 96 + 40} = \frac{39}{175} = 0.22$

Quantity II : If X = 10000 and t = 3, what is the profit share of C?

A : B : C = 16000 × 12 : 10000 × 6 : 10000 × (6 + 3)

= 16 × 12 : 10 × 6 : 10 × 9

= 96 : 30 : 45

Profit share of C = $\frac{45}{96 + 30 + 45} = \frac{5}{19} = 0.26$

So, QI < QII

Hence, option B is correct.

5. The salary of B is 36000 and salary of A is 11.11% more than B. C spends Rs. 24000 and saves 42.85% salary. Total expenditure of B and C is Rs. 44000. A saves 40% salary.

	A	B	C
Salary	40000	36000	42000
Expenditure	24000	20000	24000
Savings	16000	16000	18000

Quantity I : What is the total savings of A and B?

Savings (A + B) = 16000 + 16000 = 32000

Quantity II : What is the sum of expenditure of B and savings of C?

Sum = 20000 + 18000 = 38000

So, QI < QII

Hence, option B is correct.

6. **Quantity I :**

Selling price of the article = 135% of 2800 = Rs. 3780

Marked price of the article = $\frac{3780}{94.5} \times 100$ = Rs. 4000

Quantity II :

Selling price of the article = 85% of 6400 = Rs. 5440

Cost price of the article = $\frac{5440}{136} \times 100$ = Rs. 4000

So, Quantity-I = Quantity-II

Hence, option E is correct.

7.

Quantity I :

Total interest earned = $18000 \times \{(1.2)^2 - 1\}$ = Rs. 7920

Quantity II :

Total interest earned = $\frac{17600 \times 15 \times 3}{100}$ = Rs. 7920

So, Quantity-I = Quantity-II

Hence, option E is correct.

8. **Quantity I :**

Let the length of the train be x m.

So the speed of the train = $\frac{x}{8}$

Also the speed of train = $\frac{x + 330}{23}$

So, $\frac{x}{8} = \frac{x + 330}{23}$

$23x = 8x + 2640$

$15x = 2640$

$x = 176$

So the speed the train = $\frac{176}{8}$ = 22 m/s = 79.2 Km/h

Quantity II :

Let the original average speed of the car be x Km/h.

According to question,

$\frac{180}{(x - 5)} - \frac{180}{x} = \frac{9}{60}$

$x^2 - 5x - 6000 = 0$

$x^2 - 80x + 75x - 6000 = 0$

$x (x - 80) + 75 (x - 80) = 0$

$(x - 80) (x + 75) = 0$

$x = 80, -75$

Speed can't be negative. So, the value of $x = 80$

So the original average speed of the car = 80 Km/h

Hence, option B is correct.

9. **Quantity I:**

Let height of the cylinder = h cm

So, $2 \times \frac{22}{7} \times 14 \times h = 2376$

$h = \frac{(2376 \times 7)}{(2 \times 22 \times 14)}$

h = 27 cm

Therefore, total surface area of the cylinder

$= 2 \times \frac{22}{7} \times 14 \times (14 + 27) = 3608\ cm^2$

Required cost = 3608 × 7 = Rs. 25256

Quantity II :

Total surface area of the cuboid = 2 × (26 × 19 + 19 × 12 + 12 × 26)

= 2 × (494 + 228 + 312)

= 2 × 1034

$= 2068\ m^2$

Required cost = 2068 × 12 = Rs. 24816

So, Quantity-I > Quantity-II

Hence, option A is correct.

10. **Quantity I :**

Let the total work = LCM of (32 and 24) = 96 units

Number of units completed per day of A

$= \frac{96}{32} = 3$

Number of units completed per day of B

$= \frac{96}{24} = 4$

Reqd. number of days = $\frac{48}{3} + \frac{48}{4}$

= 16 + 12 = 28 days

Quantity II :

Let the total work = LCM of (40 and 60) = 120 units

Number of units completed per day of A

$= \frac{120}{40} = 3$ units

Number of units completed per day of B

$= \frac{120}{60} = 2$ units

Reqd. number of days = $\frac{60}{3} + \frac{60}{5}$

= 20 + 12 = 32 days

So, Quantity-I < Quantity-II

Hence, option B is correct.


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