🔵 NUMBER SYSTEM – 30 QUESTIONS (Options Horizontal)

Q1. Which of the following is an even number?

A) 17 B) 21 C) 42 D) 55

Q2. The smallest prime number is:

A) 0 B) 1 C) 2 D) 3

Q3. Which among these is a composite number?

A) 2 B) 3 C) 7 D) 9

Q4. What is the HCF of 18 and 24?

A) 2 B) 3 C) 6 D) 12

Q5. What is the LCM of 4 and 6?

A) 10 B) 12 C) 14 D) 18

Q6. A number divisible by 5 ends with:

A) 1 B) 2 C) 5 or 0 D) 3

Q7. Which is a perfect square?

A) 20 B) 25 C) 45 D) 55

Q8. Which number is divisible by 9?

A) 478 B) 729 C) 531 D) 228

Q9. 2^3 equals:

A) 6 B) 8 C) 9 D) 12

Q10. Which is an irrational number?

A) 4 B) 5/2 C) √7 D) 1.25

Q11. How many factors does 36 have?

A) 6 B) 7 C) 8 D) 9

Q12. Highest power of 2 in 48 is:

A) 2 B) 3 C) 4 D) 5

Q13. A number divisible by 11 has:

A) Alt sum = 0/11 B) Last digit 0 C) Sum div by 3 D) Last digit even

Q14. Largest 4-digit number divisible by 9:

A) 9999 B) 9990 C) 9981 D) 9900

Q15. Unit digit of 7^5 is:

A) 1 B) 3 C) 5 D) 7

Q16. HCF of 72 and 120:

A) 6 B) 12 C) 24 D) 48

Q17. LCM of 18, 24, 30:

A) 180 B) 240 C) 360 D) 720

Q18. Which is NOT prime?

A) 31 B) 37 C) 39 D) 41

Q19. Remainder when 125 ÷ 6:

A) 1 B) 3 C) 5 D) 2

Q20. Which is divisible by 18?

A) 288 B) 324 C) 270 D) 306

Q21. Trailing zeros in 100!:

A) 20 B) 22 C) 24 D) 25

Q22. HCF of 96, 144, 240:

A) 12 B) 24 C) 48 D) 72

Q23. Digits in 2^{100}:

A) 28 B) 31 C) 33 D) 35

Q24. Product = 2028, HCF = 6, LCM = ?

A) 338 B) 348 C) 360 D) 300

Q25. Smallest 5-digit number divisible by 72:

A) 10008 B) 10044 C) 10080 D) 10096

Q26. Remainder when $7^{100} \div 13$:

A) 1 B) 2 C) 7 D) 9

Q27. How many primes between 1-100?

A) 23 B) 24 C) 25 D) 26

Q28. Factors of $N = 2^4 \cdot 3^3 \cdot 5^2$:

A) 45 B) 60 C) 72 D) 90

Q29. Last two digits of 17^{10}:

A) 89 B) 49 C) 01 D) 87

Q30. Value of 999 × 1001:

A) 997001 B) 999999 C) 1001999 D) 1000001

🟠 PERCENTAGES — 30 QUESTIONS (No Blank Lines)

Q1. A man spends 35% of his income on rent and 15% on food. If he saves ₹18,000 which is 30% of his income, what is his total income?
A) ₹48,000 B) ₹50,000 C) ₹60,000 D) ₹65,000
Q2. A man donated 12% of his salary to charity and still had ₹17,600 left, which was 88% of his salary. What is his total salary?
A) ₹18,000 B) ₹19,000 C) ₹20,000 D) ₹22,000
Q3. A fruit seller sold 25% of his apples and still had 540 apples left. How many apples did he originally have?
A) 600 B) 640 C) 700 D) 720
Q4. A number increases from 750 to 900. What is the percentage increase?
A) 15% B) 18% C) 20% D) 25%
Q5. If 18% of A equals 27% of B, then A : B is:
A) 2:3 B) 3:2 C) 1:1 D) 4:3
Q6. A student scores 540 marks out of 900. By what percent should he increase his marks to reach 75%?
A) 10% B) 12.5% C) 15% D) 20%
Q7. The population of a town increases by 12% in one year and decreases by 8% in the next. What is the net percentage change?
A) Increase 2.4% B) Increase 3.6% C) Decrease 2.4% D) Decrease 3.6%
Q8. The price of sugar increases by 25%. By what percent must a man reduce consumption so that his expenditure remains constant?
A) 15% B) 20% C) 25% D) 30%
Q9. A shopkeeper sells an article for ₹1,890 after giving a discount of 30%. What is the marked price?
A) ₹2,200 B) ₹2,600 C) ₹2,700 D) ₹2,850
Q10. A student got 72 marks which is 90% of the total marks. What are the total marks?
A) 75 B) 78 C) 80 D) 82
Q11. A man's salary is first increased by 20% and then decreased by 10%. What is the net percentage change?
A) 6% increase B) 8% increase C) 8% decrease D) No change
Q12. If 40% of a number is 88, what is 30% of the number?
A) 48 B) 55 C) 60 D) 66
Q13. In a class, 30% of students are girls. If the number of boys is 175% of girls, what is the total number of students?
A) 60 B) 70 C) 80 D) 90
Q14. If a number is increased by 15% and then increased again by 20%, what is the total percentage increase?
A) 32% B) 35% C) 38% D) 42%
Q15. A population grows from 2,40,000 to 3,07,200 in 5 years. What is the average annual percent increase?
A) 4.8% B) 5% C) 5.2% D) 6%
Q16. A man saves ₹6,000 which is 20% of his salary. What is his salary?
A) ₹25,000 B) ₹28,000 C) ₹30,000 D) ₹32,000
Q17. A number is decreased by 25% and then increased by 40%. The final value is 21. What was the original number?
A) 20 B) 25 C) 28 D) 30

Q18. A shopkeeper buys goods for ₹6,800 and gets a discount of 8%. After rebate, he pays GST @ 12%. What amount does he pay?
A) ₹6800 B) ₹7056 C) ₹7200 D) ₹7600
Q19. In an election, 40% of the total 18,000 votes were invalid. The winning candidate got 55% of the valid votes. How many votes did he get?
A) 6,000 B) 7,200 C) 8,100 D) 9,900
Q20. A quantity becomes 1.44 times itself after 2 years. What is the annual percentage increase?
A) 20% B) 22% C) 40% D) 44%
Q21. The price of a laptop decreases from ₹50,000 to ₹42,500. What is the percent decrease?
A) 10% B) 12% C) 15% D) 18%
Q22. A shopkeeper marks a product at 40% above cost and gives a discount of 25%. What is the net profit percent?
A) 5% B) 10% C) 12% D) 15%
Q23. If 15% of A = 9% of B, find A : B.
A) 3:5 B) 5:3 C) 4:5 D) 5:4
Q24. A student secures 192 marks out of 320. What percentage did he score?
A) 50% B) 55% C) 60% D) 65%
Q25. A shopkeeper offers two successive discounts of 10% and 20%. What is the effective discount?
A) 28% B) 30% C) 32% D) 35%
Q26. If 25% of a number is 45, what is 80% of the number?
A) 120 B) 135 C) 140 D) 144
Q27. A student increases his score from 240 to 300. What percent increase is this?
A) 20% B) 22% C) 25% D) 30%
Q28. If B is 40% less than A, then A is how much more than B?
A) 40% B) 50% C) 66.66% D) 75%
Q29. A sum of money becomes 135% of itself after one year. What is the percentage increase?
A) 25% B) 30% C) 35% D) 45%
Q30. A shopkeeper sells an article at 80% of its marked price and gets a loss of 10%. What percent was the marked price above the cost price?
A) 15% B) 20% C) 25% D) 30%

🟣 RATIO & PROPORTION — 30 QUESTIONS (Aptitude Style, No Line Breaks)

Q1. If 25% of x = 40% of y, then x : y is equal to:
A) 5 : 8 B) 2 : 5 C) 8 : 5 D) 5 : 2
Q2. Two numbers are in the ratio 3 : 5. If each number is increased by 10, the new ratio becomes 7 : 9. What is the larger number?
A) 15 B) 25 C) 30 D) 35
Q3. The monthly incomes of Arun and Ramesh are in the ratio 7 : 9 and their monthly expenditures are in the ratio 4 : 5. If Arun saves ₹4,200 and Ramesh saves ₹6,000, what is Arun's income?
A) 9,800 B) 10,500 C) 11,200 D) 12,600
Q4. A mixture contains milk and water in the ratio 5 : 3. If 16 liters of water is added, the ratio becomes 5 : 4. Find the quantity of milk in the mixture.
A) 40 L B) 50 L C) 60 L D) 80 L
Q5. The ratio between the ages of A and B is 7 : 11. Five years later the ratio becomes 9 : 13. What is B's present age?
A) 22 B) 33 C) 44 D) 55

Q6. The incomes of Ram, Shyam, and Raju are in the ratio 6 : 9 : 14 and their expenditures are in the ratio 4 : 5 : 7. If Ram saves ₹6,000 and Shyam saves ₹9,000, what is Raju's saving?
A) 10,000 B) 12,000 C) 15,000 D) 20,000
Q7. 4 men and 6 women can do a piece of work in 8 days. The ratio of 1 man's work to 1 woman's work is 3 : 2. In how many days can 10 women alone do the work?
A) 12 B) 16 C) 18 D) 20
Q8. A sum of money is divided among A, B, and C in the ratio 3 : 7 : 9. If C receives ₹2,250 more than A, what is the total sum?
A) 4,500 B) 6,750 C) 9,000 D) 11,250
Q9. The speeds of a car and a bike are in the ratio 5 : 3. If the bike takes 40 minutes to cover a distance, how long will the car take to cover the same distance?
A) 18 min B) 20 min C) 24 min D) 30 min
Q10. A recipe uses ingredients in the ratio 2 : 5 : 3 for flour, sugar, and milk. If 500 g of sugar is used, how much flour is required?
A) 100 g B) 120 g C) 200 g D) 300 g
Q11. The ratio of boys to girls in a class is 7 : 9. If 6 boys leave and 6 girls join, the ratio becomes 3 : 5. What is the original number of girls?
A) 36 B) 45 C) 54 D) 63
Q12. Two numbers are in the ratio 5 : 8. If 20 is subtracted from each, the ratio becomes 3 : 5. What is the larger number?
A) 80 B) 85 C) 90 D) 100
Q13. A container has milk and water in the ratio 11 : 4. If 20 liters of the mixture is removed and replaced with water, the ratio becomes 11 : 6. What is the quantity of the mixture?
A) 80 L B) 100 L C) 110 L D) 120 L
Q14. A bag contains ₹5, ₹2 and ₹1 coins in the ratio 2 : 3 : 5. If the total number of coins is 200, how many ₹5 coins are there?
A) 20 B) 30 C) 40 D) 50
Q15. In an examination, the ratio of passed to failed students is 7 : 4. If 55 more students passed and 35 fewer failed, the new ratio becomes 5 : 2. Find the number of students who failed originally.
A) 80 B) 88 C) 96 D) 100
Q16. A vessel contains acid and water in the ratio 9 : 7. If 32 liters of water is added, the ratio becomes 9 : 11. Find the original quantity of mixture.
A) 80 L B) 96 L C) 112 L D) 128 L
Q17. A man invests money in two schemes A and B in the ratio 5 : 3. If scheme A gives 12% profit and scheme B gives 15% profit, what is the average profit percent?
A) 12.9% B) 13.0% C) 13.2% D) 13.5%
Q18. A sum is divided between A and B in the ratio 7 : 9. If A's share is increased by 20%, the ratio becomes 21 : 27. What is the total sum?
A) 800 B) 900 C) 1,000 D) 1,200
Q19. The monthly incomes of A and B are in the ratio 11 : 15 and their savings are in the ratio 4 : 7. If A saves ₹6,000, how much does B save?
A) 8,500 B) 9,500 C) 10,500 D) 11,500
Q20. A father divides property between his two sons in the ratio 13 : 17. If the difference between their shares is ₹1,20,000, what is the total value of the property?
A) 6,00,000 B) 7,20,000 C) 8,00,000 D) 9,00,000
Q21. Two numbers are in the ratio 4 : 5. If 10 is added to each number, the ratio becomes 6 : 7. What is the larger number?
A) 25 B) 30 C) 35 D) 40

Q22. A and B together have ₹6,000. They spend money in the ratio 3 : 2. After spending, A has ₹1,500 left. How much does B have left?
A) 1,800 B) 2,000 C) 2,400 D) 2,500
Q23. The ratio of milk to water in a mixture is 14 : 5. If 30 liters of water is added, the ratio becomes 14 : 8. What is the original quantity of milk?
A) 70 L B) 84 L C) 98 L D) 112 L
Q24. A mixture contains alcohol and water in the ratio 5 : 2. If 21 liters of water is added, the ratio becomes 5 : 3. What is the original quantity of mixture?
A) 49 L B) 56 L C) 63 L D) 70 L
Q25. The incomes of A, B and C are in the ratio 3 : 5 : 7 and their expenditures are in the ratio 2 : 3 : 4. If C saves ₹9,000, find A's saving.
A) 2,000 B) 3,000 C) 4,000 D) 6,000
Q26. A man divides ₹4,800 among his sons in the ratio 2 : 3 : 5. What is the share of the youngest son?
A) 960 B) 1,200 C) 1,600 D) 2,400
Q27. A number is divided in the ratio 7 : 12. If the smaller part is increased by 20, the ratio becomes 3 : 4. What is the number?
A) 140 B) 154 C) 168 D) 180
Q28. A, B and C invest in a business in the ratio 4 : 5 : 6. If the total profit is ₹30,000, what is B's share?
A) 9,000 B) 10,000 C) 11,000 D) 12,000
Q29. Two numbers are in the ratio 5 : 7. If each number is increased by 15, the ratio becomes 7 : 9. What is the smaller number?
A) 45 B) 50 C) 55 D) 60
Q30. A recipe requires ingredients in the ratio 7 : 4. If 22 grams of the second ingredient is used, how much of the first ingredient is required?
A) 28 g B) 33 g C) 38 g D) 40 g

🟥 PROFIT & LOSS — 30 QUESTIONS (Same Pattern as Your Example)

Q1. A shopkeeper buys a fan for ₹1,650 and spends ₹150 on repairs. If he sells the fan for ₹2,040, his gain percent is:
A) 10% B) 12% C) 14% D) 16%

Q2. The cost price of 25 articles is equal to the selling price of x articles. If the profit is 20%, then x is:
A) 18 B) 20 C) 22 D) 24

Q3. If the selling price is tripled, the profit becomes five times the original profit. What is the profit percent?
A) 100% B) 150% C) 200% D) 250%

Q4. A shopkeeper makes a profit of 250% on the cost price. If the cost increases by 20% but the selling price remains unchanged, what is the new profit percent (approx)?
A) 150% B) 170% C) 200% D) 230%

Q5. A vendor buys chocolates at 8 for ₹10. How many must he sell for ₹10 to gain 25%?
A) 5 B) 6 C) 7 D) 8

Q6. The percentage profit by selling an article for ₹1,980 is the same as the percentage loss when sold for ₹1,320. What should be the selling price to earn 30% profit?
A) ₹2,000 B) ₹2,100 C) ₹2,200 D) Data inadequate

Q7. A shopkeeper expects a 30% gain on his cost price. If the total sales in a week is ₹520, what is his profit?
A) ₹120 B) ₹130 C) ₹140 D) ₹156

Q8. A man buys a table for ₹2,400 and sells it at a loss of 12%. Find the selling price.
A) ₹2,016 B) ₹2,112 C) ₹2,200 D) ₹2,250

Q9. Mohan buys 15 dozens of toys at ₹420 per dozen. He sells each toy at ₹45. His profit percent is:
A) 10% B) 12.5% C) 15% D) 20%

Q10. Goods bought at 7 articles for ₹9 are sold at 6 articles for ₹9. Find the gain %.
A) 16.6% B) 20% C) 25% D) 30%

Q11. Selling 19 chairs at ₹9,120 results in a loss equal to the cost price of 4 chairs. Cost price of one chair is:
A) ₹480 B) ₹520 C) ₹560 D) ₹600

Q12. A plot is sold for ₹22,000 at a loss of 12%. At what price should it be sold to make a profit of 12%?
A) ₹25,000 B) ₹27,500 C) ₹28,160 D) ₹29,000

Q13. 120 oranges are bought for ₹420 and sold at ₹55 per dozen. What is the profit/loss percent?
A) 15% gain B) 20% gain C) 10% loss D) No loss no gain

Q14. Two items are sold — one at 18% gain for ₹1,180 and the other at 10% loss for ₹760. Find overall gain/loss percent.
A) 2% loss B) 2% gain C) 3% gain D) 4% gain

Q15. A trader mixes 24 kg rice at ₹30/kg with 36 kg rice at ₹42/kg and sells at ₹38/kg. Profit percent is:
A) No profit no loss B) 5% C) 8% D) 10%

Q16. A man buys two watches for ₹3,600. He sells one at 20% gain and the other at 10% loss. If overall he gains ₹180, find the cost price of the costlier watch.
A) ₹1,800 B) ₹2,000 C) ₹2,200 D) ₹2,400

Q17. A cycle worth ₹4,500 is sold at a discount of 15% but still earns a profit of 20%. Find the cost price.
A) ₹3,000 B) ₹3,200 C) ₹3,500 D) ₹3,750

Q18. A trader sells an article at 25% profit. If the cost price was 20% higher than earlier, at the same selling price his profit would be:
A) 10% B) 12.5% C) 15% D) 20%

Q19. A man sells 3 items for ₹720 each. On one he gains 20%, on another he loses 20%. What is his net gain/loss on the 3rd item if his total gain is 10%?
A) 15% gain B) 20% gain C) 25% gain D) 30% gain

Q20. A dealer sold an item for ₹1,350, which resulted in a gain of 12.5%. Find the cost price.
A) ₹1,100 B) ₹1,120 C) ₹1,200 D) ₹1,250

Q21. The ratio of cost price and selling price is 4 : 5. Find the profit percent.
A) 20% B) 22% C) 24% D) 25%

Q22. An article is sold at a gain of 40%. If the selling price is ₹630, find the cost price.
A) ₹420 B) ₹450 C) ₹470 D) ₹500

Q23. A man bought goods worth ₹9,000 and spent ₹1,000 on transport. He sold the goods for ₹13,200. His profit percent is:
A) 20% B) 25% C) 30% D) 32%

Q24. A radio is sold for ₹1,440 at a discount of 10%. If the shopkeeper still makes a profit of 20%, find the cost price.
A) ₹900 B) ₹1,000 C) ₹1,050 D) ₹1,200

Q25. A man sells an article at 10% loss. If he had sold it for ₹150 more, he would have gained 20%. What is the cost price?
A) ₹400 B) ₹450 C) ₹500 D) ₹600

Q26. A product is marked 60% above cost price. It is sold at a discount of 25%. What is the profit percent?
A) 20% B) 25% C) 28% D) 30%

Q27. A man sold a shirt at 12% profit and a pant at 8% loss. The ratio of their cost prices is 3 : 5. If total profit is ₹96, find CP of shirt.
A) ₹360 B) ₹400 C) ₹420 D) ₹450

Q28. A bookseller sold two books for ₹450 each. On one he gained 25% and on the other he lost 25%. What is the net result?
A) No loss no gain B) 6.25% loss C) 6.25% gain D) 5% loss

Q29. A garment shopkeeper gives two successive discounts of 15% and 10% on a dress. If the marked price is ₹2,000, find the selling price.
A) ₹1,440 B) ₹1,530 C) ₹1,560 D) ₹1,620

Q30. A trader sells an article at 10% profit. Had he sold it for ₹45 more, his profit would have been 20%. Find the selling price.
A) ₹435 B) ₹450 C) ₹480 D) ₹495

🟩 ALGEBRA — 30 QUESTIONS (FULL STATEMENTS + OPTIONS + NO BLANK LINES)

Q1. If there are 2 apples in a bag and x apples are added to make the total 10 apples, how many apples were added?
A) 6 B) 7 C) 8 D) 10
Q2. A pen costs x dollars. If 5 pens cost $15, what is the cost of one pen?
A) $2 B) $3 C) $4 D) $5
Q3. A train travels x miles in 2 hours. If it travels 100 miles in 2 hours, how many miles does it travel per hour?
A) 25 B) 40 C) 50 D) 60
Q4. If x people complete a task in 4 hours and 8 people can do the same task in 2 hours, how many people were originally there?
A) 2 B) 3 C) 4 D) 5

Q5. A rectangle's length is twice its width. If width is x feet and area is 50 sq ft, what is the width?
A) 3 B) 4 C) 5 D) 6
Q6. Sarah had x dollars. After buying a book for $10, she has $30 left. How much money did she have initially?
A) 30 B) 35 C) 40 D) 45
Q7. A school has x students per class. If 5 classes have 150 students, how many students are there in each class?
A) 20 B) 25 C) 30 D) 35
Q8. A baker divides 120 cookies equally into 6 boxes. How many cookies are in each box?
A) 15 B) 18 C) 20 D) 25
Q9. A baker used x cups of flour for each of 3 cakes. If total flour used is 15 cups, how much flour was used for each cake?
A) 3 B) 4 C) 5 D) 6
Q10. A garden has x roses and twice as many tulips. If total flowers are 30, how many roses are there?
A) 8 B) 10 C) 12 D) 15
Q11. A car travels 240 km in 4 hours. What is its speed (x) in km/hour?
A) 40 B) 50 C) 55 D) 60
Q12. A bottle contains x liters of water. After pouring out half, 2 liters remain. What was the initial amount?
A) 3 B) 4 C) 5 D) 6
Q13. A class has x students. After 3 more students join, total becomes 25. How many students were there initially?
A) 20 B) 21 C) 22 D) 23
Q14. A rectangle has width w and length 2w. If the perimeter is 30 m, what is the width?
A) 4 B) 5 C) 6 D) 7
Q15. A pool fills with water at x liters per minute. If 10 minutes fill 300 liters, how many liters per minute?
A) 25 B) 30 C) 35 D) 40
Q16. A store sells x apples per day. If 120 apples are sold in 4 days, how many apples are sold each day?
A) 20 B) 25 C) 30 D) 35
Q17. A train passes a pole in 3 seconds at a speed of 10 m/s. What is the train's length?
A) 20 B) 25 C) 30 D) 35
Q18. A farmer has x chickens and 4x cows. Total animals are 100. How many chickens are there?
A) 10 B) 15 C) 20 D) 25
Q19. In the polynomial $7x^3 - 4x^2 + 9x - 5$, what is the coefficient of x^2?
A) −9 B) −5 C) −4 D) 4
Q20. In the polynomial $3x^4 - 2x^3 + 5x - 7$, what is the coefficient of x?
A) −2 B) −7 C) 3 D) 5
Q21. What is the constant term in the expression $8x^2 - 6x + 4$?
A) −6 B) 4 C) 8 D) 2
Q22. Simplify the expression 3x + 5x.
A) 2x B) 6x C) 8x D) 10x
Q23. Simplify the expression 7y − 3y.
A) 2y B) 3y C) 4y D) 10y
Q24. Simplify 4a + 7b − 3a.
A) a + 7b B) a + 3b C) 4a + b D) 7a + b

Q25. Calculate the sum of (5x + 8y) and (3x − 2y).
A) 6x + 10y B) 7x + 5y C) 8x + 6y D) 9x + 4y
Q26. Subtract (2x − 3y) from (6x + 4y).
A) 2x + 7y B) 4x + 7y C) 4x − 7y D) 7x + 4y
Q27. Simplify the expression 9m − 5n + 2m + 3n.
A) 7m + 2n B) 7m − 8n C) 11m − 2n D) 11m + n
Q28. Find the sum of (3p + 4q) and (−2p − 6q).
A) p + 2q B) p − 2q C) p − 10q D) 5p − 2q
Q29. Simplify: $4x^2 + 5x - 3 + 2x^2 - 7x + 6$.
A) $5x^2 - 2x + 3$ B) $6x^2 - 2x + 3$ C) $7x^2 + x - 3$ D) $6x^2 + x + 2$
Q30. Find the result of subtracting $(3y^2 - 4y + 7)$ from $(5y^2 + 2y - 1)$.
A) $2y^2 + 6y + 6$ B) $2y^2 + 6y - 8$ C) $2y^2 - 2y - 6$ D) $8y^2 - 2y + 6$

🟩 AVERAGE, MIXTURE & ALLIGATION — 30 QUESTIONS (Same Pattern + Options)

Q1. The average of 15 consecutive natural numbers is x. If the 9th number is 23, what is the value of x?
a) 21 b) 23 c) 25 d) None of these
Q2. The average of 6 consecutive even numbers is 48. What is the product of the smallest and largest number?
a) 40 × 56 b) 42 × 54 c) 44 × 52 d) None of these
Q3. A group of 20 people went to a restaurant. 12 of them paid ₹150 each and the rest paid ₹100 each. What is the average amount paid by each person?
a) ₹130 b) ₹135 c) ₹140 d) ₹145
Q4. The average age of father, mother and their son is 28 years. Five years ago, the average age was 23 years. What is the present age of the father if the mother is 30 years old?
a) 40 b) 42 c) 38 d) 45
Q5. The average of 18 numbers is 24. If two numbers 18 and 30 are removed, what will be the new average?
a) 23 b) 24 c) 25 d) 26
Q6. Rahul's average score in 10 innings is 35. If he scores 75 runs in the 11th inning, what will be his new average?
a) 38 b) 40 c) 42 d) 45
Q7. The average height of 9 boys is 140 cm. If one new boy joins and the average increases by 2 cm, what is the height of the new boy?
a) 158 cm b) 162 cm c) 160 cm d) 168 cm
Q8. The average of 30 numbers is 18. If one number 48 is included, what will be the new average?
a) 18.5 b) 19 c) 19.5 d) 20
Q9. A bucket contains 15 liters of mixture of milk and water in the ratio 3:2. How much milk must be added to make the ratio 5:2?
a) 3 L b) 4 L c) 5 L d) 6 L
Q10. A container contains 180 liters of pure milk. 30 liters is removed and replaced with water. After repeating this operation 3 times, how much milk is left?
a) 85 L b) 92 L c) 98 L d) 100 L
Q11. A cup of coffee contains milk and water in the ratio 3:1. How much of the mixture should be replaced with milk to make the ratio 5:1?
a) 1/6 b) 1/5 c) 1/4 d) None of these

Q12. Two varieties of sugar costing ₹36/kg and ₹48/kg are mixed in the ratio 2:3. What is the average cost of the mixture?
a) ₹40 b) ₹42 c) ₹44 d) ₹46
Q13. In what ratio must tea costing ₹240/kg be mixed with tea costing ₹300/kg so that the mixture costs ₹270/kg?
a) 1:1 b) 2:1 c) 3:2 d) 4:1
Q14. A can contains 120 liters of mixture of milk and water in the ratio 7:3. How much water must be added to make the ratio 5:4?
a) 20 L b) 25 L c) 30 L d) 35 L
Q15. A milk vendor has two cans of milk. The first contains 30% water and the second contains 50% water. How much milk must be taken from each so that the final mixture has 40% water?
a) 3:2 b) 4:3 c) 5:4 d) None of these
Q16. A mixture contains 70% acid and 30% water. How much water must be added to 20 liters of this mixture to make it 50% acid?
a) 10 L b) 14 L c) 20 L d) 28 L
Q17. A vessel contains 40 liters of milk. 8 liters is removed and replaced by water. After repeating once more, how much milk remains?
a) 24 L b) 25.6 L c) 26.4 L d) 28 L
Q18. A man's average monthly expenditure for 8 months is ₹12,500. For the next 4 months, the average expenditure is ₹15,000. What is his average yearly expenditure?
a) ₹13,000 b) ₹13,500 c) ₹14,000 d) ₹14,500
Q19. The average of 5 numbers is 46. The average of the first three numbers is 40. The average of the last three is 52. What is the third number?
a) 45 b) 48 c) 50 d) 52
Q20. A mixture contains 60% milk. How many liters of water must be added to 40 liters of mixture to make it 40% milk?
a) 20 L b) 25 L c) 30 L d) 35 L
Q21. Two mixtures contain milk and water in the ratio 5:3 and 4:1. In what ratio should they be mixed so that final mixture has ratio 3:1?
a) 1:1 b) 2:1 c) 3:1 d) 4:1
Q22. The average age of a family of 6 members is 25. If a child aged 5 joins the family, what is the new average?
a) 21 b) 22 c) 23 d) 24
Q23. A mixture contains 64% copper and 36% zinc. How much zinc must be added to 50 kg of the mixture to make zinc 40%?
a) 3 kg b) 4 kg c) 5 kg d) 6 kg
Q24. A man has 80 liters of a mixture with 70% alcohol. How much water should he add to make the alcohol content 50%?
a) 20 L b) 30 L c) 40 L d) 50 L
Q25. The average of 12 numbers is 18. If two numbers 22 and 26 are added, what will be the new average?
a) 18.5 b) 19 c) 20 d) 21
Q26. A milkman mixes water with milk in ratio 1:4. What is percentage of water in final mixture?
a) 15% b) 18% c) 20% d) 25%
Q27. 10 liters of water is added to 40 liters of mixture containing milk and water in ratio 3:1. What is the new ratio?
a) 5:3 b) 3:2 c) 2:1 d) 3:1
Q28. A shopkeeper mixes two oils costing ₹60/l and ₹90/l. If he wants a mixture costing ₹75/l, in

what ratio must they be mixed?
a) 1:1 b) 1:2 c) 2:1 d) 3:1
Q29. A mixture has 45 liters of milk and 15 liters of water. How much milk must be added to make ratio 5:1?
a) 10 L b) 12 L c) 15 L d) 18 L
Q30. The average of 30 numbers is 25. If one number 55 is removed, what will be the new average?
a) 23.5 b) 24 c) 24.5 d) 25

🟩 TIME & WORK — 30 QUESTIONS (Same Pattern + Options)

Q1. A can do a work in 15 days and B can do the same work in 20 days. In how many days will they finish the work together?
a) 7 days b) 8 days c) 10 days d) 12 days
Q2. A and B together can complete a work in 12 days. B alone can do it in 30 days. In how many days can A alone complete it?
a) 15 b) 20 c) 25 d) 30
Q3. A can do a job in 18 days and B in 24 days. They work together for 6 days. What fraction of the work is still left?
a) 1/4 b) 1/3 c) 1/2 d) 2/3
Q4. P and Q can do a work in 10 days and 15 days respectively. If R joins them, they finish the work in 6 days. How many days will R alone take?
a) 15 b) 18 c) 20 d) 30
Q5. A is twice as efficient as B. Together they finish a work in 12 days. In how many days can A alone finish it?
a) 16 b) 24 c) 18 d) 36
Q6. A, B, C do a work in 15, 20, and 30 days respectively. Working together, what is their total time to finish the work?
a) 7.5 days b) 8 days c) 9 days d) 10 days
Q7. A works twice as fast as B. If they complete work together in 10 days, how long will B alone require?
a) 15 days b) 20 days c) 25 days d) 30 days
Q8. A and B can do a work in 12 and 16 days respectively. If they work on alternate days beginning with A, in how many days will the work be completed?
a) 13 days b) 14 days c) 15 days d) 16 days
Q9. 4 men or 6 women can do a work in 15 days. How long will 8 men and 3 women take to complete the same work?
a) 6 days b) 7 days c) 8 days d) 10 days
Q10. A does a work in 10 days, B in 12 days and C in 20 days. If they work together, how long will the work take?
a) 4 days b) 5 days c) 6 days d) 8 days
Q11. A and B together can finish a work in 40 days. B alone can do it in 60 days. In how many days can A alone do it?
a) 90 days b) 100 days c) 120 days d) 150 days
Q12. A can do a work in 8 days and B in 16 days. After working together for 3 days, A leaves. How long will B take to finish the remaining work?
a) 8 days b) 6 days c) 5 days d) 4 days
Q13. Three men and four women can finish work in 10 days. Six men and two women can finish it in

6 days. How many days will 1 man alone take?
a) 20 days b) 25 days c) 30 days d) 40 days
Q14. A alone can complete a job in 30 days. B alone takes 45 days. If they work together but B leaves after 10 days, how long will A take to finish the remaining work?
a) 12 days b) 15 days c) 20 days d) 22 days
Q15. A can do a work in 40 days. He works for 10 days and leaves. B completes the remaining work in 30 days. How long does B alone take to do the whole work?
a) 45 days b) 50 days c) 55 days d) 60 days
Q16. P, Q and R together can finish a work in 8 days. P alone can finish it in 12 days and Q alone in 24 days. How long will R alone take?
a) 16 days b) 18 days c) 20 days d) 22 days
Q17. A completes a work in 25 days, B in 20 days. A starts but leaves after 5 days. B completes the rest. How long did the work take?
a) 12 days b) 14 days c) 15 days d) 17 days
Q18. A and B can complete a work in 18 days and 27 days respectively. If they work together for 6 days, what part of the work is left?
a) 2/5 b) 1/3 c) 4/9 d) 1/2
Q19. A can do a work in 9 days, B in 12 days and C in 18 days. If A leaves after 3 days, in how many days will B and C finish the remaining?
a) 4 days b) 5 days c) 6 days d) 7 days
Q20. A tank is filled by Pipe A in 12 hours and by Pipe B in 16 hours. If both pipes are opened together, how long will the tank take to fill?
a) 6.8 hours b) 7 hours c) 7.5 hours d) 8 hours
Q21. Three pipes A, B, and C can fill a tank in 10, 12, and 15 hours respectively. If A is opened first, and after 1 hour B is opened, and after another 1 hour C is opened, how long will the tank take to fill?
a) 5 hours b) 6 hours c) 7 hours d) 8 hours
Q22. A and B can do a work in 28 and 35 days respectively. If they work together for 7 days, what part of the work remains?
a) 1/2 b) 3/5 c) 2/5 d) 1/3
Q23. A can do a work in 32 days and B in 48 days. They begin together but B leaves after 8 days. How long will A take to finish the remaining work?
a) 14 days b) 16 days c) 18 days d) 20 days
Q24. A does 1/3 of a work in 6 days. How long will he take to finish the whole work?
a) 12 days b) 15 days c) 18 days d) 20 days
Q25. A and B complete a work in 15 days. They work together for 5 days and A leaves. B completes the remaining in 18 days. In how many days can A finish the work alone?
a) 24 b) 30 c) 32 d) 36
Q26. A can do a work in 14 days, B can do it in 21 days. They work together for 3 days, then A leaves. In how many more days will B finish the remaining work?
a) 6 b) 8 c) 9 d) 12
Q27. A can finish a work in 10 days, B in 15 days and C in 20 days. If all three work together for 3 days and then A leaves, how long will B and C take to finish?
a) 4 days b) 5 days c) 6 days d) 7 days
Q28. A machine completes a job in 8 hours. After 2 hours of working, its efficiency drops by 25%. How long will it take to finish the remaining work?
a) 7 hours b) 6.5 hours c) 6 hours d) 5.5 hours
Q29. A contractor employs 40 workers to finish a job in 25 days. After 10 days, he removes 10

workers. How many additional days will they take to finish?
a) 16 b) 17 c) 18 d) 20
Q30. A and B can finish a work in 24 days. B and C do it in 30 days. A and C in 40 days. How long will all three take together?
a) 16 days b) 18 days c) 20 days d) 22 days

🟩 TIME, SPEED & DISTANCE — 30 Questions (Exact CRT Pattern)

Q1. A man would have taken 2 hours less to cover a distance if he had travelled 5 km/h faster. If travelling 4 km/h slower would make him take 5 hours more. What is the distance?
a) 160 km b) 180 km c) 200 km d) None of these

Q2. A car covers a distance from town A to town B at 60 km/h and returns at 90 km/h. What is its average speed for the total journey?
a) 70 km/h b) 72 km/h c) 75 km/h d) 80 km/h

Q3. A train stops at a station for 10 minutes during a journey. Excluding stoppage time, its speed is 40 km/h. Including stoppage, its speed becomes 36 km/h. How long is the train's journey?
a) 3 hours b) 4 hours c) 5 hours d) 6 hours

Q4. A car travels at 60 km/h with a full tank. With 2/3rd tank it can travel 300 km. What is the maximum distance it can travel on a full tank?
a) 420 km b) 450 km c) 500 km d) 540 km

Q5. A person walking at 56% of his usual speed reaches the office 40 minutes late. What is his usual travel time?
a) 1 hour b) 1 hr 20 mins c) 1 hr 30 mins d) 2 hours

Q6. A man walks from his home to office daily. He leaves at 8:15 am and reaches at 9:00 am. If he walks 4 km/h faster, he will reach 15 minutes early. What is the distance?
a) 3 km b) 4 km c) 5 km d) 6 km

Q7. A farmer travelled 61 km in 9 hours. He travelled partly at 4 km/h and partly at 9 km/h. How much distance did he travel at 9 km/h?
a) 15 km b) 18 km c) 21 km d) 24 km

Q8. A man travels 2 km at 6 km/h and returns 2 km at 4 km/h. What is his average speed?
a) 4.5 km/h b) 4.8 km/h c) 5 km/h d) 5.1 km/h

Q9. Vijay walks from home to school at 5 km/h. When he walks at 4 km/h, he takes 20 minutes more. What is the distance?
a) 2 km b) 2.5 km c) 3 km d) 3.5 km

Q10. Two cars start at 9 am and 10 am from the same city and travel at 65 km/h and 85 km/h respectively. If the distance is 690 km, at what time will the second car catch the first?
a) 1 pm b) 2 pm c) 3 pm d) None of these

Q11. Two cyclists start from A and B towards each other. One reaches B in 4 hours and the other reaches A in 9 hours. If the speed of the first is 30 km/h, what is the speed of the second?
a) 12 km/h b) 18 km/h c) 20 km/h d) 30 km/h

Q12. A police jeep travelling at 60 km/h chases a car travelling at 48 km/h. The jeep starts 6 minutes later. How long will it take to catch the car?
a) 25 minutes b) 30 minutes c) 36 minutes d) 45 minutes

Q13. A train travelling at 36 km/h crosses a man in 8 seconds. What is the length of the train?
a) 60 m b) 72 m c) 80 m d) 90 m

Q14. A 150 m long train crosses a platform in 30 seconds at 54 km/h. What is the length of the platform?
a) 150 m b) 200 m c) 225 m d) 250 m

Q15. A train crosses a post in 5 secs at 72 km/h. How long is the train?
a) 80 m b) 90 m c) 100 m d) 120 m

Q16. Two trains pass each other in opposite directions in 12 seconds. Their speeds are 45 km/h and 54 km/h. If one train is 120 m long, what is the length of the other?
a) 100 m b) 120 m c) 140 m d) 150 m

Q17. A bus reduces speed by 20% and covers the same distance in 15 minutes more. What is the original time?
a) 45 min b) 50 min c) 60 min d) 75 min

Q18. A man cycles at 12 km/h and reaches 15 minutes late. If he cycles at 15 km/h, he reaches 10 minutes early. What is the distance?
a) 10 km b) 12 km c) 15 km d) 18 km

Q19. A train crosses a platform twice as long as itself in 36 seconds at 45 km/h. What is the length of the train?
a) 50 m b) 75 m c) 100 m d) 120 m

Q20. A man covers a journey at 10 km/h and returns at 15 km/h. If total time taken is 5 hours, what is the distance one way?
a) 12 km b) 15 km c) 18 km d) 20 km

Q21. A boat takes 2 hours less going downstream than upstream for the same distance. If speed of stream is 3 km/h, find boat speed in still water.
a) 6 km/h b) 8 km/h c) 9 km/h d) 10 km/h

Q22. A motorboat can row 10 km in still water in 30 minutes. In running water, it takes twice the time. Find speed of current.
a) 2 km/h b) 3 km/h c) 4 km/h d) 5 km/h

Q23. Two trains 300 m and 200 m long run in opposite directions at 72 km/h & 54 km/h. How long will they take to cross each other?
a) 12 sec b) 10 sec c) 15 sec d) 20 sec

Q24. A car travels 180 km in x hours at 60 km/h. How much faster should it travel to cover the same distance in (x – 1) hours?
a) 66 km/h b) 72 km/h c) 75 km/h d) 80 km/h

Q25. A jogger increases speed by 2 km/h and takes 10 minutes less to cover 5 km. What is his original speed?
a) 6 km/h b) 7 km/h c) 8 km/h d) 9 km/h

Q26. Two persons start walking towards each other from two towns 30 km apart. They meet in 2 hours. If one walks at 7 km/h, what is the speed of the other?
a) 6 km/h b) 7 km/h c) 8 km/h d) 9 km/h

Q27. A man travels 40 km at a speed of x km/h then returns at 2x km/h. If total time is 3 hours, find x.
a) 12 b) 15 c) 16 d) 20

Q28. A train crosses a man in 6 sec and a platform of length 200 m in 16 sec. Find train length.
a) 100 m b) 120 m c) 140 m d) 160 m

Q29. A man rowed 12 km downstream in 1 hr and the same distance upstream in 2 hrs. What is speed of boat in still water?
a) 9 b) 8 c) 7 d) 6

Q30. A cyclist travels 45 km at 15 km/h and returns at 9 km/h. What is his average speed?
a) 11.25 km/h b) 12 km/h c) 12.5 km/h d) 13.5 km/h

🟩 PROBABILITY — 30 Questions (Exact CRT Pattern)

Q1. Four fair coins are tossed simultaneously. What is the probability of getting exactly 3 heads?
a) 1/4 b) 1/8 c) 1/16 d) 3/16

Q2. Four fair coins are tossed. What is the probability of getting at least 2 tails?
a) 3/8 b) 1/2 c) 11/16 d) 13/16

Q3. If a die is thrown, what is the probability that the number obtained is divisible by 3?
a) 1/2 b) 1/3 c) 2/3 d) 1/6

Q4. Find the probability that the sum of two dice is greater than 8.
a) 5/12 b) 7/36 c) 1/4 d) 13/36

Q5. Three dice are thrown simultaneously. What is the probability of getting all three numbers different?
a) 1/2 b) 5/9 c) 2/3 d) 5/6

Q6. A card is drawn from a standard deck of 52 cards. What is the probability of getting a heart or a king?
a) 4/13 b) 17/52 c) 16/52 d) 4/52

Q7. Two cards are drawn without replacement. What is the probability that both cards are black?
a) 25/102 b) 3/17 c) 25/51 d) 13/51

Q8. One card is drawn from 52 cards. What is the probability that it is a red face card?
a) 1/26 b) 3/26 c) 2/13 d) 3/13

Q9. A box contains 8 good bulbs and 4 defective ones. Two bulbs are drawn at random. What is the probability that both are good?
a) 7/33 b) 14/33 c) 1/11 d) 2/11

Q10. The probability that it rains on Monday is 0.7 and on Tuesday is 0.5. What is the probability that it rains on both days?
a) 0.20 b) 0.30 c) 0.35 d) 0.50

Q11. Out of 2-digit numbers between 10 and 99, one number is chosen at random. What is the probability that it is divisible by 7?
a) 9/90 b) 11/90 c) 13/90 d) 15/90

Q12. A 7-letter word is arranged randomly using letters of “MISSION”. What is the probability that all three S appear together?
a) 1/210 b) 1/140 c) 1/70 d) None of these

Q13. Six persons sit randomly around a circular table. What is the probability that two particular persons sit together?
a) 1/6 b) 1/5 c) 2/5 d) 1/3

Q14. A box contains 3 red, 4 blue and 5 green balls. One ball is drawn at random. What is the probability that it is green?
a) 4/15 b) 1/3 c) 5/12 d) 1/5

Q15. Two dice are thrown. What is the probability that the product is even?
a) 3/4 b) 1/4 c) 2/3 d) 5/6

Q16. A bag contains 4 white, 3 black and 3 red balls. If one ball is drawn at random, what is the probability it is black or red?
a) 1/2 b) 3/5 c) 2/5 d) 3/4

Q17. From 12 people, 3 officers are selected. What is the probability that a particular person is selected?
a) 1/6 b) 1/4 c) 3/12 d) 1/12

Q18. In a class of 40 students, 12 are girls. If 3 students are chosen at random, what is the probability that all are boys?
a) 91/760 b) 28/123 c) 91/123 d) 364/988

Q19. Two fair coins are tossed 3 times. What is the probability of getting exactly 2 tails?
a) 3/8 b) 9/64 c) 3/16 d) 12/64

Q20. A jar contains 6 red and 4 blue marbles. Two marbles are drawn without replacement. What is the probability of getting one red and one blue?
a) 24/90 b) 48/90 c) 56/90 d) 12/90

Q21. A letter is chosen from the word “EQUATION”. What is the probability that it is a vowel?
a) 4/8 b) 5/8 c) 3/8 d) 2/8

Q22. A number is selected from 1 to 100. What is the probability that the number chosen is a prime?
a) 25/100 b) 21/100 c) 30/100 d) 10/100

Q23. Three unbiased coins are tossed. What is the probability of getting at most 2 heads?
a) 3/4 b) 7/8 c) 1/2 d) 5/8

Q24. One card is drawn from a deck. What is the probability that the card is neither king nor queen?
a) 48/52 b) 44/52 c) 36/52 d) 40/52

Q25. A box contains 3 red, 5 black and 7 white balls. What is the probability that if 2 balls are drawn, both are white?
a) 21/105 b) 21/91 c) 7/45 d) 1/15

Q26. Two dice are thrown. What is the probability that the sum is a prime number?
a) 5/12 b) 1/2 c) 7/12 d) 11/36

Q27. A random 3-digit number is selected. What is the probability that it contains the digit 9?
a) 1/10 b) 27/100 c) 19/100 d) 3/10

Q28. A bag contains 4 apples, 3 oranges and 3 mangoes. What is the probability that a randomly picked fruit is not an apple?
a) 3/5 b) 1/2 c) 2/3 d) 3/4

Q29. Two cards are drawn from a deck. What is the probability that at least one is an ace?
a) 1/13 b) 1/26 c) 15/221 d) 25/221

Q30. A dice is rolled twice. What is the probability that the second number is greater than the first?
a) 5/12 b) 1/2 c) 7/12 d) 1/3

🟩 MENSTRUATION — 30 QUESTIONS (CRT Pattern + Options)

Q1. What is the area of an equilateral triangle of side 20 cm?
A) 100√3 sq.cm B) 200√3 sq.cm C) 300√3 sq.cm D) 400√3 sq.cm

Q2. The sides of a triangle are 15 cm, 17 cm and 8 cm. What is its area?
A) 60 sq.cm B) 64 sq.cm C) 120 sq.cm D) 240 sq.cm

Q3. The perimeter of a triangle is 36 cm and its inradius is 3 cm. What is the area of the triangle?
A) 36 sq.cm B) 48 sq.cm C) 54 sq.cm D) 108 sq.cm

Q4. Find the area of a trapezium whose parallel sides are 12 cm and 20 cm and height is 10 cm.
A) 120 sq.cm B) 140 sq.cm C) 160 sq.cm D) 180 sq.cm

Q5. Area of a parallelogram is 432 sq.cm and base is 24 cm. What is its height?
A) 16 cm B) 18 cm C) 20 cm D) 22 cm

Q6. Length and breadth of a rectangle are in ratio 5 : 3. Its area is 1500 sq.cm. What is its perimeter?
A) 140 cm B) 160 cm C) 180 cm D) 200 cm

Q7. A circular wire of radius 2.8 m is bent into a rectangle whose length is 6 parts and breadth is 5 parts. Find the area of the rectangle.
A) 22 sq.m B) 30 sq.m C) 42 sq.m D) 55 sq.m

Q8. A cube of side 50 cm is cut into cubes of side 5 cm each. How many smaller cubes are obtained?
A) 100 B) 500 C) 1000 D) 1250

Q9. The radius of a wheel is 21 cm. What distance does it cover in 800 revolutions?
A) 1056 m B) 1056 cm C) 1056 km D) 528 m

Q10. The ratio of the volumes of two cubes is 512 : 2197. What is the ratio of their total surface areas?
A) 16 : 49 B) 8 : 21 C) 64 : 169 D) 4 : 7

Q11. The radius of a circle is increased by 20%. What is the percentage increase in its area?
A) 20% B) 40% C) 44% D) 50%

Q12. Area of a circle is 616 sq.cm. Find its circumference (Take π = 22/7).
A) 88 cm B) 77 cm C) 66 cm D) 55 cm

Q13. The diameter of a cylinder is 14 cm and height is 20 cm. Find its curved surface area.
A) 440 sq.cm B) 560 sq.cm C) 880 sq.cm D) 1040 sq.cm

Q14. Find the total surface area of a cube with volume 729 cubic cm.
A) 194 sq.cm B) 486 sq.cm C) 354 sq.cm D) 294 sq.cm

Q15. A cuboid has dimensions 12 cm × 15 cm × 20 cm. Find its volume.
A) 2400 cubic cm B) 3600 cubic cm C) 4000 cubic cm D) 5400 cubic cm

Q16. A hemisphere has radius 7 cm. What is its curved surface area?
A) 154 sq.cm B) 308 sq.cm C) 462 sq.cm D) 616 sq.cm

Q17. Find the volume of a sphere of diameter 14 cm.
A) 718 cubic cm B) 900 cubic cm C) 1437 cubic cm D) 1715 cubic cm

Q18. Find the area of a rhombus whose diagonals are 16 cm and 10 cm.
A) 40 sq.cm B) 60 sq.cm C) 80 sq.cm D) 160 sq.cm

Q19. Area of a triangle is 120 sq.cm and its base is 24 cm. Find the height.
A) 8 cm B) 10 cm C) 12 cm D) 15 cm

Q20. The length of a rectangle is increased by 20% and breadth decreased by 10%. What is the % change in area?
A) 8% increase B) 8% decrease C) No change D) 10% decrease

Q21. A cone has radius 7 cm and slant height 25 cm. Find its curved surface area.
A) 385 sq.cm B) 550 sq.cm C) 275 sq.cm D) 440 sq.cm

Q22. A cylindrical tank has radius 4 m and height 7 m. Find its volume.
A) 351 m^3 B) 352 m^3 C) 355 m^3 D) 360 m^3

Q23. A path of uniform width 3 m is built around a rectangular field 50 m × 40 m. Find the area of the path.
A) 270 sq.m B) 540 sq.m C) 720 sq.m D) 420 sq.m

Q24. Find the perimeter of a semicircle of radius 14 cm (Take π = 22/7).
A) 22 cm B) 44 cm C) 66 cm D) 72 cm

Q25. The diagonal of a square is 12√2 cm. What is the area of the square?
A) 72 sq.cm B) 96 sq.cm C) 120 sq.cm D) 144 sq.cm

Q26. A cone has height 24 cm and volume 1232 cubic cm. Find its radius.
A) 7 cm B) 8 cm C) 9 cm D) 6 cm

Q27. A solid cylinder is melted and recast into 8 small spheres. Radius of cylinder is 6 cm, height 7 cm. What is radius of each sphere?
A) 3 cm B) 2.5 cm C) 2 cm D) 1.5 cm

Q28. The radius of a circular garden is 21 m. Find its area.
A) 1386 sq.m B) 1540 sq.m C) 1764 sq.m D) 1680 sq.m

Q29. A rectangular field has length 80 m and breadth 60 m. A road of width 5 m is built inside along all sides. Find area of road.
A) 650 sq.m B) 700 sq.m C) 750 sq.m D) 800 sq.m

Q30. A cylindrical drum has radius 3 m and height 10 m. Find its total surface area.
A) 246 sq.m B) 260 sq.m C) 234 sq.m D) 246π sq.m

🟩 GEOMETRY — 30 QUESTIONS (CRT Pattern + Options)

Q1. In a circle of radius 12 cm, find the length of a chord that is 5 cm from the center.
A) 20 cm B) 22 cm C) 24 cm D) 26 cm

Q2. The sum of the interior angles of a 12-sided polygon is:
A) 1440° B) 1620° C) 1800° D) 1980°

Q3. If the complement of an angle is 40° more than one-third of its supplement, find the angle.
A) 30° B) 40° C) 45° D) 50°

Q4. In triangle ABC, 2∠A = 3∠B = 4∠C. Find ∠A.
A) 30° B) 36° C) 40° D) 45°

Q5. Find the volume of a cylinder with radius 6 cm and height 14 cm.
A) 504π B) 448π C) 378π D) 336π

Q6. A triangle has sides 15 cm, 15 cm, and 18 cm. Find its area.
A) 108 sq.cm B) 120 sq.cm C) 135 sq.cm D) 144 sq.cm

Q7. Two circles have radii 10 cm and 6 cm. The distance between centers is 30 cm. What is the length of the transverse common tangent?
A) 26.8 cm B) 27.5 cm C) 28 cm D) 29.4 cm

Q8. If each exterior angle of a regular polygon is 24°, how many sides does it have?
A) 12 B) 15 C) 18 D) 20

Q9. In a circle with radius 13 cm, a chord subtends a right angle at the center. Find its length.
A) 13√2 B) 10√2 C) 13√3 D) 26

Q10. A triangle has sides in ratio 3 : 4 : 5. If perimeter is 72 cm, find the area.
A) 96 sq.cm B) 144 sq.cm C) 216 sq.cm D) 288 sq.cm

Q11. The area of a circle is 154 sq.cm. Find its diameter. (π = 22/7)
A) 12 cm B) 14 cm C) 16 cm D) 18 cm

Q12. The diagonals of a rhombus are 24 cm and 32 cm. Find its perimeter.
A) 40 cm B) 56 cm C) 64 cm D) 80 cm

Q13. In a cyclic quadrilateral, the angles are 70°, 85°, 110°, and x. Find x.
A) 95° B) 110° C) 115° D) 130°

Q14. A regular polygon has interior angle 140°. How many sides does it have?
A) 7 B) 8 C) 9 D) 10

Q15. The diameter of a semicircle is 28 cm. Find its area.
A) 154 cm² B) 308 cm² C) 224 cm² D) 196 cm²

Q16. A right triangle has hypotenuse 25 cm and one side 7 cm. Find the other side.
A) 22 B) 23 C) 24 D) 25

Q17. A circle has a tangent of length 15 cm drawn from a point 17 cm away from its center. Find its radius.
A) 7 cm B) 8 cm C) 9 cm D) 10 cm

Q18. The length of an arc subtending 60° at the center of a circle of radius 21 cm is:
A) 11 cm B) 22 cm C) 33 cm D) 44 cm

Q19. Find the area of an equilateral triangle with perimeter 72 cm.
A) 108√3 B) 144√3 C) 216√3 D) 288√3

Q20. The radii of two circles are in the ratio 3 : 5. What is the ratio of their areas?
A) 3 : 5 B) 9 : 25 C) 15 : 25 D) 5 : 3

Q21. A triangle has sides 10 cm and 14 cm, and the included angle is 60°. Find its area.
A) 35√3 B) 28√3 C) 70√3 D) 14√3

Q22. A chord of length 24 cm is drawn in a circle of radius 13 cm. Find its distance from the center.
A) 5 cm B) 7 cm C) 11 cm D) 12 cm

Q23. In a triangle ABC, AB = AC = 13 cm and BC = 10 cm. Find the height from A.
A) 10 B) 12 C) 9 D) 5

Q24. A circular park has circumference 132 m. Find its area. (π = 22/7)
A) 1386 sq.m B) 1540 sq.m C) 1680 sq.m D) 1764 sq.m

Q25. If each interior angle of a regular polygon is 150°, how many sides does it have?
A) 10 B) 12 C) 14 D) 15

Q26. A triangle has sides 9 cm, 10 cm, and 11 cm. Find its area using Heron's formula.
A) 36 B) 40.5 C) 45 D) 49.5

Q27. A cube has diagonal 12√3 cm. What is its total surface area?
A) 864 B) 432 C) 576 D) 288

Q28. The slant height of a cone is 25 cm and radius is 7 cm. Find its total surface area.
A) 704 sq.cm B) 792 sq.cm C) 880 sq.cm D) 968 sq.cm

Q29. A triangle has base 20 cm and area 120 sq.cm. Find the height.
A) 10 B) 12 C) 14 D) 15

Q30. A circle has area 154 sq.cm. What is its circumference? (π = 22/7)
A) 22 cm B) 33 cm C) 44 cm D) 66 cm

🟦 DATA INTERPRETATION SET – 30 QUESTIONS (TABLE + PIE + GRAPH)

🟩 SET–1: TABLE DI (Q1–Q10)

Table: Exports & Imports (in ₹ Crores) of 5 Countries Over 4 Years

Year	Country	Exports	Imports
2020	A	250	190
2020	B	180	220
2020	C	300	260
2021	A	270	210
2021	B	200	240
2021	C	330	280
2022	A	290	220
2022	B	210	260
2022	C	360	310
2023	A	310	240
2023	B	250	290
2023	C	400	350

Q1. In which year did Country B have the highest trade deficit?

A) 2020 B) 2021 C) 2022 D) 2023

Q2. What is the ratio of total exports of Country A in 2020–2023 to total imports of Country A in the same period?

A) 1120 : 860 B) 1120 : 600 C) 860 : 1120 D) 1000 : 820

Q3. By how much did exports of Country C increase from 2020 to 2023?

A) 80 B) 90 C) 100 D) 120

Q4. Average imports of Country B over the four years is:

A) 252.5 B) 257.5 C) 265 D) 270

Q5. In which year was total trade (Exports + Imports) maximum for Country A?

A) 2020 B) 2021 C) 2022 D) 2023

Q6. For Country C, what percentage of imports in 2023 are imports in 2020?

A) 65% B) 70% C) 75% D) 80%

Q7. Total exports of all countries in 2023 is:

A) 960 B) 930 C) 880 D) 860

Q8. Total imports of Country B for 2021 and 2023 together is:

A) 530 B) 520 C) 500 D) 550

Q9. In which country and year was the trade surplus the highest?

A) A – 2020 B) A – 2021 C) C – 2023 D) C – 2022

Q10. What is the average exports of Country C over all four years?

A) 315 B) 320 C) 330 D) 340

🟧 **SET–2: PIE CHART DI (Q11–Q20)**

Pie Chart: Company's Annual Expenditure (Total = ₹20 lakh)

Category	% Share
Salaries	35%
Raw Material	25%
Marketing	15%
R&D	10%
Maintenance	10%
Misc	5%

Q11. How much was spent on Raw Material?

A) ₹3.5 lakh B) ₹5 lakh C) ₹4 lakh D) ₹3 lakh

Q12. How much more is spent on Salaries than on Marketing?

A) ₹2 lakh B) ₹3 lakh C) ₹4 lakh D) ₹1 lakh

Q13. What percentage of total expenditure is on R&D + Maintenance?

A) 15% B) 20% C) 25% D) 30%

Q14. If the expenditure on Salaries increases by 10%, new Salary expenditure becomes:

A) 7.7 lakh B) 7.5 lakh C) 8 lakh D) 9 lakh

Q15. What is the ratio of Raw Material to Salaries?

A) 5 : 7 B) 7 : 5 C) 1 : 2 D) 3 : 4

Q16. How much was spent on categories other than Salaries and Raw Material?

A) ₹6 lakh B) ₹7 lakh C) ₹8 lakh D) ₹9 lakh

Q17. Marketing + Misc expenditure together account for:

A) 15% B) 20% C) 30% D) 35%

Q18. If total budget increases to 25 lakh but % distribution remains same, amount spent on Misc is:

A) 1.25 lakh B) 1 lakh C) 0.75 lakh D) 0.5 lakh

Q19. Salaries exceed Maintenance by:

A) 20% B) 25% C) 30% D) 35%

Q20. What is the difference between Raw Material and R&D expenditure?

A) ₹2 lakh B) ₹3 lakh C) ₹4 lakh D) ₹5 lakh

SET–3: LINE GRAPH DI (Q21–Q30)

Line Graph: Marks of two students P & Q in 6 Subjects (out of 100)

Subject	A	B	C	D	E	F
P	78	62	85	70	90	88
Q	65	75	80	72	84	92

Q21. In how many subjects did P score more than Q?

A) 2 B) 3 C) 4 D) 5

Q22. The difference between total marks of P and Q is:

A) 10 B) 12 C) 20 D) 22

Q23. In which subject is the difference between marks of P and Q maximum?

A) A B) B C) C D) F

Q24. What is the average marks of P?

A) 78.8 B) 79.1 C) 80 D) 82.5

Q25. What is the ratio of P's marks in A and D?

A) 78 : 70 B) 80 : 70 C) 85 : 70 D) 90 : 70

Q26. In which subject do both P and Q score more than 80?

A) C, E, F B) A, C, E C) C, D, F D) B, C, E

Q27. Q scored highest in which subject?

A) C B) E C) F D) D

Q28. What is total of Q's marks in A + C + E?

A) 229 B) 235 C) 240 D) 251

Q29. What is the percentage score of P across 6 subjects?

A) 79% B) 82% C) 85% D) 90%

Q30. What is the average difference between P and Q's marks?

A) 4 B) 5 C) 6 D) 7

📘 STATISTICS – 30 QUESTIONS (No Line Gaps, Clean Pattern)

Q1. If the variance of 5 values is 5.6, what is the standard deviation?
A) 4.35 B) 3.95 C) 2.85 D) 2.36
Q2. Find the range of the data: 143, 148, 135, 150, 128, 139, 149, 146, 151, 132
A) 23 B) 24 C) 25 D) 22
Q3. Find the mean of the following:
CI: 90–100, 80–90, 70–80, 60–70, 50–60
f : 10, 15, 14, 12, 9
A) 73.2 B) 75.8 C) 74.6 D) 71.5
Q4. Mean = 26, Mode = 20. Find the median for moderately skewed data.
A) 25.3 B) 22.4 C) 28 D) 24
Q5. Find the average score:
Marks: 20, 30, 40, 50, 60, 70
f: 8, 12, 20, 10, 6, 4
A) 39 B) 40 C) 42 D) 41
Q6. SD of 10 values is 4. If each value is increased by 3, find new variance.
A) 16 B) 49 C) 19 D) 7
Q7. Find median of: 31, 35, 27, 29, 43, 37, 41, 35, 30
A) 31 B) 35 C) 37 D) 30
Q8. A, B, C have means 58, 48, 147 and SDs 15, 12, 2. Who is most consistent?
A) A B) B C) C D) Cannot be determined
Q9. Sangeetha is 7 years older than Divya. 15 years ago, Divya's age was ¾ of Sangeetha's. Find Sangeetha's age now.
A) 44 B) 43 C) 42 D) 41
Q10. Find median: 19, 12, 25, 30, 18, 21, 27, 20, 23
A) 21 B) 23 C) 25 D) 22
Q11. Two farms produced:
A: 32, 48, 50, 36, 34
B: 25, 40, 35, 75, 25
Which is more consistent?
A) A B) B C) Both equal D) Cannot be determined
Q12. Find the mode:
Score: 2, 3, 4, 5, 6
f: 4, 7, 9, 6, 3
A) 3 B) 4 C) 5 D) 6
Q13. SD of 4, 8, 12 is:
A) 3.2 B) 4 C) 3.5 D) 2.6
Q14. If mean = 32 and median = 30, find mode approx.
A) 26 B) 28 C) 30 D) 34

Q15. If mean = 50 and SD = 5, find coefficient of variation.
A) 5% B) 10% C) 15% D) 20%
Q16. Find range: 12, 19, 25, 9, 32, 28
A) 21 B) 23 C) 24 D) 20
Q17. Which measure is least affected by extreme values?
A) Mean B) Mode C) Median D) Variance
Q18. Mean = 45, SD = 12. Find variance.
A) 144 B) 12 C) 157 D) 133
Q19. Find median: 6, 9, 12, 15, 18, 21
A) 12 B) 13.5 C) 15 D) 16
Q20. Mean of first 10 natural numbers?
A) 5.5 B) 6 C) 5 D) 6.5
Q21. For grouped data:
Class: 0–10, 10–20, 20–30
f: 5, 9, 6
Find modal class.
A) 0–10 B) 10–20 C) 20–30 D) None
Q22. If all values are multiplied by 6, SD becomes—?
A) 6 times B) 36 times C) 1/6 times D) Same
Q23. Mode of: 11, 14, 14, 18, 19, 14, 17
A) 14 B) 18 C) 17 D) No mode
Q24. Mean – Median = 4, skewness = 1. Find mode.
A) Mean – 6 B) Median – 6 C) Mean + 6 D) Median + 6
Q25. Find mean:
X: 5, 10, 15, 20
f: 2, 3, 4, 1
A) 12.5 B) 13 C) 14 D) 16
Q26. Mean = 60, CV = 25%. Find SD.
A) 15 B) 12 C) 20 D) 18
Q27. Find range: 55, 41, 62, 39, 48, 59, 63
A) 23 B) 24 C) 21 D) 25
Q28. Find median: 102, 98, 75, 80, 110, 120, 85
A) 85 B) 98 C) 102 D) 95
Q29. Which is an absolute measure of dispersion?
A) CV B) Variance C) Standard deviation D) Interquartile range
Q30. SD of set A is 9. If each value is divided by 3, SD becomes—?
A) 3 B) 6 C) 9 D) 1