Weighted Averages/Mixtures Practice Questions:

1. A jar has 10 L of milk and water in the ratio 3:2. If another 5 L of water is added to it, what is the ratio of milk and water now?

   a) 1:2   b) 2:3   c) 3:2   d) Cannot be determined

2. A fruit vendor sells grapes, one cheaper variety (C.P - Rs. 60/kg) and the other a little costlier (C.P. - Rs. 90/kg). People were buying only the costlier variety so he decided to mix the two and sell. In what ratio should he mix the cheaper and costlier so that he ends up making a profit of 10% by selling the mix at Rs. 88/kg?

   a) 1:2   b) 2:1   c) 2:3   d) 3:2

3. A gas which is a mix of propane and butane in the ratio 9:11 comes out of a fissure in the earth. The cost of propane is Rs.200/cc and that of butane is Rs. 400/cc. At what cost should this gas be sold to earn a profit of 10%?

   a) Rs. 331/cc   b) Rs. 290/cc   c) Rs. 310/cc   d) Rs. 341/cc

4. In a 6 hr journey, a train travels at a speed of 90 km/hr for 4 hrs. After that it slows down. If its average speed for the entire journey is 80 km/hr, what was its speed in the second part of the journey?

   a) 85 km/hr   b) 75 km/hr   c) 70km/hr   d) 60 km/hr

5. In a class of 80 boys and girls, each boy has 3 pens and each girl has 5 pens. In all if there are 360 pens, how many boys are there in the class?

   a) 20   b) 26   c) 30   d) 48

6. Two solutions of milk and water having ratio of milk and water as 1 : 2 and 1 : 3 are mixed in the ratio 2 : 3. What is the ratio of milk and water in the resultant mixture?

   a) 17 : 43   b) 3 : 7   c) 2 : 9   d) 13 : 31

7. Two varieties of rice costing Rs. 20 per kg and Rs. 30 per kg are mixed in the ratio 3 : 2. At what price should the mixture be sold to earn a profit of 12.5%?

   a) Rs. 24/kg   b) Rs. 27/kg   c) Rs. 29/kg   d) Rs. 31/kg

8. The Symbiosis Entrance Test has four sections Maths, English, Reasoning and Business Awareness. If the maximum marks in each of the sections is 100, 75, 50 and 25 respectively and a student scores 80% marks in each section, what is the overall percent of marks he scores?

   a) 60%   b) 66.66%   c) 75%   d) None of These

9. 24 carat gold has 90% gold and 10% impurities in it. 22 carat gold has 75% gold and 25% impurities in it. How many grams of 22 carat gold has to be fused with 30 gms of 24 carat gold to result in a mixture having 80% gold and 20% impurities?

   a) 15 gms   b) 30 gms   c) 45 gms   d) 60 gms

10. A variety of Rice costing Rs. 26.75 per kg is mixed with a variety of rice costing Rs. 29 per kg. If the average cost of the resultant mixture is Rs. 28 per kg, in what ratio are the two varieties mixed?

    a) 5 : 4   b) 6 : 5   c) 5 : 6   d) 4 : 5

11. A solution containing milk and water is mixed another solution containing milk and water and having milk percentage of 43% to result in a mixture of milk and water having milk percentage of 68%. If the two solutions are mixed in the ratio 5 : 3, what is the percentage of milk in the first solution?

   a) 83%   b) 28%   c) 93%   d) 77%

12. At St. Joseph's School, there are two divisions of std. Xth – A and B. The pass percentage of division A is 85% and the pass percentage of division B is 95%. What is the pass percentage of both the divisions put together, if the number of students in the A and B division are 39 and 52 respectively.

   a) 89.3%   b) 92.3%   c) 90.7%   d) 90%

13. 20 lts of milk and water solution with ratio of milk and water equal to 4:5 is mixed with 30 lts of milk and water solution with ratio of milk and water equal to 5:4. What is the ratio of milk and water in the resultant solution?

   a) 5 : 4   b) 23 : 22   c) 2 : 3   d) 2 : 5

14. A loan of Rs. 12,000 was taken, partly at 10% and partly at 15%. The total interest paid was Rs. 3240 over a period of 2 years. What is the amount taken at 15%?

   a) Rs. 3,600   b) Rs. 8000   c) Rs. 8400   d) Rs. 7200

15. In what proportion should one variety of oil at Rs 9.50 per kg be mixed with another at Rs 10 per kg to get a mixture worth Rs 9.60 per kg?

1. 1 : 4   2. 4 : 1   3. 2 : 3
       4. 3 : 2

16. In what ratio must 25 % alcohol be mixed with 50 % alcohol to get a mixture of 40 % alcohol strength?

1. 2 : 3   2. 3 : 2   3. 1 : 1
       4. 3 : 5

17. Pure milk costs Rs 3.60 per litre. A milkman adds water to 25 litres of pure milk and sells the mixture at Rs 3 per litre and earns 20% profit. How many litres of water does he add?

1. 10 litres   2. 5 litres   3. 6 litres
4. 11 litres

18. A mixture of 40 litres of milk and water contains 10 % water. How much water must be added to make 20 % in the new mixture?

1. 5 litres   2. 15 litres   3. 7.5 litres
4. 12 litres

19. Six kilograms of tea at Rs 6 per kg and 4 kgs of tea at Rs 7 per kg are mixed together and the mixture is sold at a 10 % profit. What is the selling price per kg of the mixture?

1. Rs 7.50/kg   2. Rs 7.25/kg   3. Rs 7.04/kg
       4. Rs 7.60/kg

20. Two liquids are mixed in the proportion of 3 : 2 and the mixture is sold at Rs 11 per litre at a 10 % profit. If the 1st liquid costs Rs 2 more per litre than the second, what is the cost of the 1st liquid?

1. Rs 10.80   2. Rs 8.80   3. Rs 12
     4. Rs 11

21. A mixture of alcohol and water contains 35 % alcohol by weight. 25 grams of water is added to such a mixture of 100 gm. Find the percentage of alcohol in the mixture.

1. 32 %   2. 34 %   3. 28 %
       4. 30 %

22. A sum of Rs 39 was divided among 45 boys and girls. Each girl gets 50 paise, whereas a boy gets one rupee. Find the number of boys and girls.

1. 20, 25   2. 25, 20   3. 28, 17
4. 33, 12

23. A mixture contains milk and water in the ratio 8 : x. When 33 litres of the mixture and 3 litres of water are mixed, the ratio of milk and water becomes 2 : 1. Find the value of x.

1. 6   2. 4   3. 3
4. 5

24. 6 litres of a 20 % solution of alcohol in water are mixed with 4 litres of 60 % solution of alcohol in water. What is the alcoholic strength of the mixture?

1. 35 %   2. 30 %   3. 33.33 %
     4. 36 %

25. In what ratio should water be mixed with a liquid costing Rs 12 per litre, so as to make a profit of 25 % by selling the diluted liquid at Rs 13.75 per litre?

1. 10 : 1   2. 1 : 11   3. 11 : 1
      4. 10 : 2

26. Two equal glasses are respectively $\frac{1}{3}$ and $\frac{1}{4}$ full of milk. They are then filled with water and the contents mixed in a vessel. What is the ratio of milk and water in the tumbler?

1. 7 : 17   2. 7 : 10   3. 7 : 15   4. 10 : 7

27. One litre of water was mixed to 3 litres of sugar solution containing 4 % of sugar. What is the % of the sugar in the solution?

1. 3 %   2. 4 %   3. 6 %
     4. 2 %

28. A trader mixes 80 kg of tea at Rs 15 per kg with 20 Kg of tea at cost price of Rs 20 per kg. In order to earn a profit of 25 %, what should be the sale price of the mixed tea?

1. Rs 23.75
2. Rs 22
3. Rs 20
4. Rs 19.20

29. Alloys A and B contain Zinc and tin in the proportion of 8 : 3 and 6 : 5 respectively. If equal weights of the two alloys are melted to form a third alloy C, what is the ratio of zinc and tin in this alloy?

1. 1 : 1
2. 3 : 4
3. 4 : 7
4. 7 : 4

30. A man purchased a cow and a calf for Rs 1300. He sold the calf at a profit of 20 % and the cow at a profit of 25 %. In this way, his total profit was $21\frac{1}{3}$ %. Find the cost price of the cow.

1. Rs 1100
2. Rs 500
3. Rs 800
4. Rs 400

31. 400 students took the Mock Cat exam. 60 % of the boys and 80 % of the girls cleared the cut-off in the exam. If the total percentage of students clearing the cut-off was 65 %, how many girls appeared in the examination?

1. 200
2. 175
3. 100
4. 160

Answer Key:

1. b	2. a	3. d	4. D	5. a
6. a	7. b	8. d	9. D	10. d
11. a	12. c	13. b	14. C	15. b
16. a	17. d	18. a	19. C	20. a
21. C	22. D	23. C	24. D	25. b
26. A 27. A	28. C	29. D	30. C	31. c