CLASS WORK

1. An ore contains 25% of an alloy that has 90% iron. In the remaining 75% of the ore, there is no iron. How many kilograms of the ore are needed to obtain 45 kg of pure iron?
(a) 200 kg (b) 250 kg (c) 300 kg (d) 266.66 kg

2. The population of a village is 1,00,000. The increase rate per annum is 10%. Find the population at the starting of the fourth year.
(a) 1,33,100 (b) 1,21,000
(c) 1,33,000 (d) None of these

3. The price of rice falls by 20%. How much rice can be bought now with the money that was sufficient to buy 20 kg of rice previously?
(a) 5 kg (b) 15 kg (c) 25 kg (d) 30 kg

4. Of the adult population in town A, 45% of men and 25% of women are married. What percentage of the total population of adults is married (assume that no man marries more than one woman and vice versa)?
(a) 33.33% (b) 31.1%
(c) 32.14% (d) None of these

5. A manufacturer of detergent cakes increased the price of his product as a result of which there was a decrease of 20% in its sales. If the sales turnover increases by 20% due to this change, what was the percentage increase in the price?
(a) 20% (b) 36% (c) 40% (d) 50%

6. In the university examination last year, Rajesh scored 65% in English and 82% in History. What is the minimum percentage he should score in Sociology, which is out of 50 marks (English and History were for 100 marks each), if he aims at getting 78% overall?
(a) 94% (b) 92% (c) 98% (d) 96%

7. 40% marks are essential to pass an examination. A obtains 10% marks less than the pass marks and B obtains 11.11% marks less than A. What percent less than the sum of A's and B's marks should C obtain to pass the exam?
(a) 40% (b) $41\frac{3}{17}\%$ (c) 28% (d) $41\frac{5}{17}\%$

8. Jack goes to a shop to buy a fastrack watch costing Rs.2,916. The rate of sales tax is 8% and the final value is rounded off to the next higher integer. He tells the shopkeeper to reduce the price of the watch so that he has to pay Rs.2,916 inclusive of sales tax. Find the reduction needed in the price of watch.
(a) Rs.180 (b) Rs.216 (c) Rs.200 (d) Rs.210

9. The population of towns A and B is in the ratio of 1:4. For the next 2 years, the population of A would increase and that of B would decrease by the same percentage every year. After 2 years, their population became equal. What is the percentage change in the population?
(a) 33.33% (b) 66.67%
(c) 25% (d) Not possible

10. The owner of a flower shop follows a particular pattern for his business. During a period of inflation, he raises his price by P% and during a slowdown, he decreases his price by P%. After a year in which there was inflation first, followed by a slow down, the cost of a red-rose bouquet decreases by Rs.162. After another year, in which there was inflation followed by a slowdown, the cost of this bouquet reduced by a further Rs.147.42. What was the original price of the red-rose bouquet?
(a) Rs.1,500 (b) Rs.1,000
(c) Rs.1,800 (d) Rs.1,111

11. Consider a big cube formed of 64 smaller cubes of which 40 are colored. The smaller cubes are arranged such that the exposure of the colored cubes to the outside is minimized. What is the percentage of the exposed area that is colored?
(a) 62.5% (b) 50% (c) 41.6% (d) 57.1%

12. Mr. X is a computer programmer. He is assigned three jobs for which time allotted is in the ratio of 5:4:2 (jobs need to be done individually). But due to some technical issue, 10% of the time allotted for each job gets wasted. Thereafter, owing to the lack of interest, he invests only 40%, 30%, 20% of the hours of what was actually allotted to do the three jobs individually. Find how much percentage of the total time allotted is the time invested by X?
(a) 38.33% (b) 39.45% (c) 36.66% (d) 32.72%

13. Australia scored a total of x runs in 50 overs. India tied the scores in 20% less overs. If India's average run rate had been 33.33% higher the scores would have been tied 10 overs earlier. Find how many runs were scored by Australia?
(a) 200 (b) 250
(c) 275 (d) Cannot be determined

14. A motorist uses 24% of his fuel in covering the first 20% of his total journey (in city driving conditions). He knows that he has to cover another 25% of his total journey in city driving conditions. What should be the minimum percentage increase (approx.) in the fuel efficiency for non-city driving over the city driving, so that he is just able to cover his entire journey without having to refuel?
(a) 39.2% (b) 43.5% (c) 45.6% (d) 41.2%

15. Two vessels contain equal quantities of 40% alcohol. A changed the concentration of the first vessel to 50% by adding extra quantity of pure alcohol. B changed the concentration of the second vessel to 50% by replacing a certain quantity of the solution with pure alcohol. By what percentage is the quantity of alcohol added by A more than that replaced by B?
(a) 20% (b) 25% (c) 40% (d) 50%

Directions for Q16 to Q20: Read the following and answer the questions that follow.

Five friends - A, B, C, D and E went on a shopping trip. Before shopping, the first person had Rs.400, the second person had 25% less than first person, the third person and the fourth person had 50% less than the first person and the fifth person had 66.66% less than the second person. While shopping they did not lend or borrow from each other. After the shopping was over, it was observed that they were left with Rs.165, Rs.95, Rs.70, Rs.40 and Rs.10, not necessarily in that order. We don't know who is the first or the second or onwards. Following is known about the money they started with, they spent, or they were left with.

- A started with more money than D.
- B spent Rs.15 more than C.
- E started with more money than just one another person of the group.
- A spent the most but did not end with the least.
- C started with 66.66% of the money that B started with.
- D spent the least and ended with more than A and C.
- E spent Rs.35.

16. Who ended with the maximum amount of money?
(a) A (b) E (c) C (d) B

17. How much money did A spend?
(a) Rs.205 (b) Rs.190 (c) Rs.35 (d) Rs.360

18. In ascending order of spending, E would rank at which position?
(a) 1 (b) 2 (c) 3 (d) 5

19. Who ended with Rs.40?
(a) A (b) B (c) C (d) D

20. Which two persons started with the same amount?
(a) A & B (b) A & C (c) C & E (d) D & E

HOME ASSIGNMENT

1. 60% of the employees of a company are women, and 75% of the men earn more than Rs.25,000 per year. If 45% of the company's employees earn more than Rs.25,000 per year, what fraction of the women working in the company earn Rs.25,000 per year or less?
(a) $\frac{2}{11}$ (b) $\frac{1}{4}$ (c) $\frac{1}{3}$ (d) $\frac{3}{4}$

2. A's salary is first increased by 25% and then decreased by 20%. The result is the same as B's salary increased by 20% and then reduced by 25%. Find the ratio of B's salary to that of A's?
(a) 4:3 (b) 11:10 (c) 10:9 (d) 12:11

3. If the length, breadth and height of a cube are decreased and then increased by 5%, 5% and 20% respectively, then what will be the impact on the surface area of the cube (in percentage terms)?
(a) 7.25% (b) 5% (c) 8.33% (d) 6.0833%

4. After receiving two successive rises, A's salary became equal to 15/8 times of his initial salary. By how much percent was the salary raised the first time if the second rise was twice as high (in percent) as the first?
(a) 15% (b) 20% (c) 25% (d) 30%

5. Rahul got 273 marks in his graduation exam and got 5% more than the pass percentage. If Sachin got 312 marks, then by what percentage above the pass marks, did he pass the exam?
(a) 9% (b) 12.5% (c) 20% (d) 25%

6. If the numerator of the fraction is decreased by 25% and the denominator increased by 25%, the resultant fraction represents what % decrease over the original?
(a) 20% (b) 25% (c) 35% (d) 40%

7. A trader dealing in household grinders reduced the price of the grinders by 25% as a result of which his sales went up by 60%. What is the net effect on the sales income?
(a) 40% decrease (b) 40% increase
(c) 20% decrease (d) 20% increase

8. If A is 20% of B, B is 25% of C and C in turn 30% of D, then what % of D is A?
(a) 3% (b) 1.5% (c) 5.5% (d) 2.5%

9. The weight of an empty bucket is 25% the weight of the bucket when filled with water. Some water was removed from the full bucket. Then the bucket along with the remaining water weighed $\frac{3}{5}$ of the original weight. What fractional part of the water was removed?
(a) $\frac{2}{5}$ (b) $\frac{8}{15}$ (c) $\frac{7}{13}$ (d) $\frac{5}{8}$

10. A sample of 20 litres of gasoline is found to be adulterated to an extent of 15%. How many litres of pure gasoline should be added to bring up the level of purity to 95%?
(a) 50 (b) 60 (c) 40 (d) 30

ANSWER KEY

1. (d) 2. (c) 3. (d) 4. (c) 5. (c)
6. (d) 7. (d) 8. (b) 9. (b) 10. (c)