



THE AMERICAN COLLEGE, MADURAI
(An Autonomous Institution Affiliated to Madurai Kamaraj University)
Re-accredited (2nd Cycle) by NAAC with Grade "A", CGPA – 3.46 on a 4-point scale
Backlog Arrear Examination, March 2021

MAT/MAS/2214/ 3232

Time: 2 Hrs

Developing Quantitative Aptitude

Marks : 60

Answer any FOUR questions:

4 x 15 = 60

1. (i) $\frac{4}{15}$ of $\frac{5}{7}$ of a number is greater than $\frac{4}{9}$ of $\frac{2}{5}$ of the same number by 8. What is half of that number?

(ii) The average weight of A,B,C is 45 kg. If the average weight of A and B be 40 kg and that of B and C be 43kg. Find the weight of B.

2. (i) One year ago, the ratio of Gaurav's and Sachin's age was 6:7 respectively. Four years hence, this ratio would become 7:8. How old is Sachin?

(ii) If $2x+3y+z=55$, $x+z-y=4$ and $y-x+z=12$, then what are the values of x, y and z?

3. (i) A grocer purchased 80 kg of sugar at Rs.13.50 per kg and mixed it with 120kg sugar at Rs.16per kg. At what rate should he sell the mixture to gain 16%?

(ii) A dealer sold three-fourth of his article at a gain of 20% and remaining at a cost price. Find the gain earned by him at the whole transaction.

4. (i) If 9 engines consume 24 metric tonnes of coal, when each is working 8 hours day, how much coal will be required for 8 engines, each running 13 hours a day, it being given that 3 engines of former type consume as much as 4 engines of latter type?

(ii) A bag contains 50p,25p and 10p coins in the ratio 5:9:4, amounting to Rs.206. Find the number of coins of each type.

5. (i) While covering a distance of 24 km, a man noticed that after walking for 1 hour and 40 minutes, the distance covered by him was $\frac{5}{7}$ of the remaining distance. What was his speed in metres per second?

(ii) A can do a piece of work in 80 days. He works at it for 10 days and then B alone finishes the remaining work in 42 days. In how much time will A and B working together, finish the work?

6. (i) If the compound interest on a certain sum at $16\frac{2}{3}\%$ for 3 years is Rs.1270, find the simple interest on the same sum at the same rate and for the same period.

(ii) Simplify: $\left[\frac{1}{\log_{xy}(xyz)} + \frac{1}{\log_{yz}(xyz)} + \frac{1}{\log_{zx}(xyz)}\right]$.
