Ratio, Proportion, Variation and Alligation Practice

20 Minutes – (Don't skip any questions)

1) If $a:b = 2:5$, then $(3a + 4b):(4a + 5b)$ is
   A. $33:26$ B. $11:13$ C. $13:11$ D. $23:26$ E. $26:33$

2) $581 is to be divided among Jack, Jill and Joseph such the amount Jack has is 5/4 as much as Jill's and 7/4 times as Joseph's. What should be the share of Jack, Jill and Joseph?
   A. $245, 196 \ and \ 140$
   B. $140, 196 \ and \ 245$
   C. $196, 140 \ and \ 245$
   D. $245, 140 \ and \ 196$
   E. $140, 245 \ and \ 196$

3) A bag contains rupee, 50-paise and 25-paise coins in the ratio $5:6:7$. If there are no more coins added, how much is the value of the greatest number of coins if the total value of coins is $Rs \ 390$?
   A. $Rs. 280$ B. $Rs. 40$ C. $Rs. 70$ D. $Rs. 200$ E. $Rs. 240$

4) In a mixture of 28 liters, the ratio of milk and water is $5:2$. If 2 liters of water and 5 liters of milk are added to the mixture, what is the new ratio of water and milk?
   A. $5:2$ B. $2:5$ C. $4:3$ D. $22:13$ E. $None$

5) Find the sum of the positive integers which are in the ratio $2:3:5$ and the sum of whose squares is 608.
   A. 10 B. 20 C. 30 D. 40 E. 50

6) Mihir and Mayur have marbles in the ratio of $2:3$. If more 6 marbles are given to both, then Mihir has 7/9 as much marbles as Mayur's. Find how many marbles Mayur has before and after the addition.
   A. $6 \ and \ 12$ B. $8 \ and \ 14$ C. $9 \ and \ 15$ D. $10 \ and \ 16$ E. $12 \ and \ 18$

7) $ 432.50 is divided among four persons Dan, Danny, Dorothea and Dodo such that Dan's share to Danny's $= 3:4$, Danny's share to Dorothea's $= 5:6$, and Dorothea's share to Dodo's $= 11:9$. How much more did Dorothea receive than Dodo?

   A. $ 48   B. $ 32   C. $ 24   D. $ 16   E. $ 8

8) Albert, Ali and Alta together have $ 2430. If their shares are diminished by $ 5, $ 10 and $ 15 respectively, the remainders shall be in the ratio $3:4:5$. Find their shares.

   A. $ 610, $ 815 and $ 1005
   B. $ 605, $ 810 and $ 1015
   C. $ 810, $ 605 and $ 1015
   D. $ 805, $ 615 and $ 1010
   E. $ 615, $ 805 and $ 1010

9) The ratio of number of boys to the number of girls in a school of 1638 is $5:2$. If the number of girls is increased by 60, what must be the decrease in the number of boys to make the new ratio of boys to girls $4:3$?

   A. 738   B. 704   C. 528   D. 466   E. 308

10) The ratio of number of boys and girls in a school of 720 students is $7:5$. How many more girls should be admitted to make the ratio $1:1$?

   A. 90   B. 120   C. 220   D. 240   E. *None*

11) $ 1980 is divided among A, B and C so that half of A's part, one-third of B's part and one-sixth of C's part are equal. B's part =?

   A. $ 660   B. $ 360   C. $ 1080   D. $ 540   E. $ 480

12) An alloy of zinc and tin contains them in the ratio of $37:63$. Find the weight of zinc which must be added to 400 kg of this alloy if the final ratio of zinc and tin is to be $70:30$.

   A. 480   B. 460   C. 440   D. 420   E. 400

13) Two boxes A and B were filled with beans and rice mixed in A in the ratio of $5:3$ and B in the ratio of $7:3$. What quantity must be taken from each to form a mixture which shall contain 6 kg of beans and 3 kg of rice?

   A. 4 and 5   B. 5 and 4   C. 6 and 3   D. 3 and 6   E. *None*