1. A, B, C enter into a partnership with shares in the ratio (7/2):(4/3):(6/5). After 4 months, $A$ increase his share by $50 \%$. If the total profit at the end of one year be Rs. 21600, then B's share in the profit is
(a) Rs. 2100
(b) Rs. 2400
(c) Rs. 3600
(d) Rs. 4000
(e) None of these
2. A, B and C invested capitals in the ratio $3: 5: 9$; the timing of their investments being in the ratio $2: 3: 1$. In what ratio would their profits be distributed?
(a) $2: 5: 3$
(b) $3: 2: 5$
(c) $7: 5: 3$
(d) $9: 7: 11$
(e) None of these
3. What value of ' $k$ ', must be added to $7,16,43,79$ so that they will be in proportion
(a) 7
(b) 5
(c) 9
(d) 11
(e) None of these
4. The incomes of $A$ and $B$ are in the ratio $3: 2$ and their expenditures in the ratio $5: 3$. if each saves Rs. 1000 , $A$ 's income is
(a) Rs. 5000
(b) Rs. 6000
(c) Rs. 8000
(d) Rs. 7000
(e) None of these
5. The difference between a discount of $35 \%$ and two successive discounts of $\mathbf{2 0 \%}$ and $\mathbf{2 0 \%}$ on a certain bill was Rs. 22 . Find the amount of the bill.
(a) Rs. 3200
(b) Rs. 2200
(c) Rs. 1800
(d) Rs. 2800
(e) None of these

Directions for questions 6 to 10: A team of 5 players A, B, C, D and E participated in a tournament and played four matches (1 to 4). The following table gives partial information about their individual scores and the total runs scored by the team in each match.

Each column has two values missing. These are the runs scored by the two lowest scorers in that match. None of the two missing values is more than $10 \%$ of the total runs scored in that match.

|  |  | Match-1 | Match-2 | Match-3 | Match-4 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Runs scored by <br> player | A |  | 100 |  | 53 |
|  | B | 88 | 65 |  | 52 |
|  | C |  |  | 110 |  |
|  | D | 72 | 75 | 20 | 56 |
|  | E | 60 |  | 78 |  |
| Total |  | 270 | 300 | 240 | 200 |

6. What is the maximum possible percentage contribution of $A$ in the total runs scored in the four matches?
(a) $19.7 \%$
(b) $19.9 \%$
(c) $20.1 \%$
(d) $20.2 \%$
(e) Cannot be determined
7. What is the maximum possible percentage contribution of $E$ in the total runs scored in the four matches?
(a) $18.2 \%$
(b) $19.9 \%$
(c) $18.6 \%$
(d) $20.2 \%$
(e) Cannot be determined
8. If the absolute difference between the total runs scored by $A$ and $C$ in the four matches is minimum possible then what is the ratio of $A$ and $C$ 's total runs scored by them in the four matches.
(a) 187:189
(b) $189: 187$
(c) $183: 187$
(d) 189:188
(e) Cannot be determined
9. If the absolute difference between the total runs scored by $A$ and $C$ in the four matches is minimum possible then what is the absolute difference between total runs scored by B and E in the four matches?
(a) 32
(b) 37
(c) 35
(d) 27
(e) Cannot be determined
10. The players are ranked 1 to 5 on the basis of the total runs scored by them in the four matches, with the highest scorer getting Rank 1. If it is known that no two players scored the same number of total runs, how many players are there whose ranks can be exactly determined?
(a) 0
(b) 1
(c) 3
(d) 5
(e) Cannot be determined

Directions (11-15): In the following graph the number of laptops manufactured by six different companies in the years 2010 and 2011 has been given. Read the graph carefully and answer the questions.

Number of laptops (in thousands) manufactured by six different companies


Q11. The respective ratio between the number of laptops manufactured by Lenevo in 2010 and that by Abascus in 2011 is
(a) $8: 7$
(b) $7: 8$
(c) $3: 5$
(d) $5: 3$
(e) None of these

Q12. What is the average number of laptops (in thousands) manufactured by all companies taken together in 2010?
(a) 22
(b) 22.5
(c) 32.5
(d) 23.5
(e) 27.5

Q13. What is the percentage increase in production of laptops by HP in 2011 in comparison to that in 2010?
(a) 125
(b) 100
(c) 150
(d) 250
(e) None of these

Q14. The difference between the number of laptops manufactured by Apple, Lenevo and Samsung in 2010 and that by Dell, HP and Abascus in 2011 is
(a) 5500
(b) 4550
(c) 3550
(d) 4500
(e) 5000

Q15. In 2011, which company manufactured the maximum number of laptops?
(a) Abascus
(b) Lenevo
(c) Dell
(d) Samsung
(e) HP

## Solutions:

## SOLUTION

1. Given Ratio $=7 / 2: 4 / 3: 6 / 5 \Rightarrow 105: 40: 36$

Let Initial investment in Rs. 105, Rs. 40 \& Rs. 36
Ratio of investments
$=[105 * 4+(150 \%$ of 105$) * 8]:(40 * 12): 36 * 12$
$=1680: 480: 432=35: 10: 9$
B's share $=21600 * 10 / 54=$ Rs. 4000.
2. Let the capital s of $A, B, \& \&$ are $3 x, 5 x$ and $9 x$
\& Ratio of timing of their investment $=2: 3: 1$
Let they invest their capital for $2 \mathrm{y}, 3 \mathrm{y}$ and y months respectively
Then their profit ratios are -
$3 \mathrm{x} * 2 \mathrm{y} ; 5 \mathrm{x} * 3 \mathrm{y}: 9 \mathrm{x} * \mathrm{y}$
$=6: 15: 9=2: 5: 3$
3. From question-
$7+\mathrm{K}: 16+\mathrm{K}:=43+\mathrm{K}: 79+\mathrm{K}$
$(7+K) /(16+K)=(43+K) /(79+K) ; \therefore K=5$
4. Let Income be $3 x$ \& $2 x$
\& Expenditures be $5 y$ and $3 y$
Then; $3 \mathrm{x}-5 \mathrm{y}=1000 ; 2 \mathrm{x}-3 \mathrm{y}=1000$
$\therefore x=2000 \& y=1000$
So, A's Income $=3 x \Rightarrow$ Rs. 6000
5. Equivalent discount in Two successive discount is
$=[20+20-(20 * 20) / 100]=36 \%$
$\therefore$ Difference $=36 \%-35 \%=22$ Rs. Amount of bill $=2200$
6. Option (a)

Maximum possible runs scored by A in Match-1 $=27$ Maximum possible runs scored by A in Match-3 $=19$ Maximum possible percentage contribution:

$$
\frac{27+100+19+53}{270+200+240+200} * 100 \%=\frac{199}{1010} * 100 \%=19.7 \%
$$

7. Option (c)

Maximum possible runs scored by E in Match-2 $=30$
Maximum possible runs scored by E in Match-4 $=20$
Maximum possible percentage contribution:

$$
\begin{aligned}
& \frac{60+30+78+20}{270+300+240+200} * 100 \% \\
& =\frac{188}{1010} * 100 \%=18.6 \%
\end{aligned}
$$

8. Option (b)

Maximum possible total runs scored by C in the four matches
$=27+30+110+20=187$.

In such a case minimum possible total runs scored by $A$ in the four matches $=23+100$
$+13+53=189$

Difference $=189-187=2($ minimum possible $)$
So Required ratio is $189: 187$

In such a case minimum possible total runs scored by A in the four matches
$=23+100+13+53=189$.
Difference $=189-187=2$ (minimum possible) Subsequently total runs scored by B in the four matches
$=88+65+19+52=224$.
Also, total runs scored by E in the four matches
$=60+30+78+19=187$
Absolute difference $=224-187=37$
10. Option (c)

Individual ranges for total score:
A-> 189-199

B-> 218-224
C-> 182-187

D-> 223

E-> 187-188
Least total will be of C (Rank 5)
2nd least will be E (Rank 4)
Rank 3 must be of $A$.

It is not possible to determine the exact ranks of $B$ and $D$.

## S11. Ans.(a)

Sol. Number of laptops manufactured by Lenevo in 2010 $=40$ thousand
Number of laptops manufacture by Abascus in 2011
$=35$ thousand
$\therefore$ Required ratio $=\frac{40}{35}=\frac{8}{7}=8: 7$

## S12. Ans.(b)

Sol. Required average
$=\left(\frac{15+25+30+40+15+10}{6}\right)$ thousands
$=\frac{135}{6}=22.5$ thousands

## 9. Option (b)

Maximum possible total runs scored by C in the four matches
$=27+30+110+20=187$.

S13. Ans.(c)
Sol. Required percentage in production of laptops by HP in 2011 in comparison to that in 2010
$=\frac{25-10}{10} \times 100=\frac{15}{10} \times 100=150 \%$

S14. Ans.(e)
Sol. Laptops manufacturing Apple, Lenevo and Samsung in 2010
$=15+40+25=80$ thousands
Laptops manufactured by Dell, HP and Abascus in 2011
$=15+25+35=75$ thousands
$\therefore$ Required difference $=(80-75)$ thousands $=5$ thousands $=5000$

S15. Ans.(a)
Sol. In 2011, Abascus company manufactured maximum number of laptops.

