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RBI Assistant 2022
Top 50 Numerical Ability
Questions (In English)

Direction: What should come at the place of question mark (?) in the following question?

1. $70\% \, of \, 354 + 152.2 = ?\% \, of \, 40 + ?\% \, of \, 60$

A. 200	B. 256
C. 144	D. 361
E. 400	

Direction: What value should come in place of the question mark (?) in the following question?

2. $(6422 - 4441 - 1979) \times \sqrt{1156} = ?^{\frac{1}{3}} + \sqrt{2116}$

A. 10642	B. 10648
C. 12658	D. 17576
E. 5832	

Direction: What value should come in place of the question mark (?) in the following question?

3. $70\% \, of \, (1246 + 283 - 652) = ?^2 + 172.9$

A. 31	B. 33
C. 27	D. 26
E. 21	

Direction: What value should come in place of the question mark (?) in the following question?

4. $\dfrac{(2751 + 6482 - 2456 - 5142)}{\sqrt{729} + \sqrt{1024} - \sqrt{576}} = ?^2 \div \sqrt{441}$

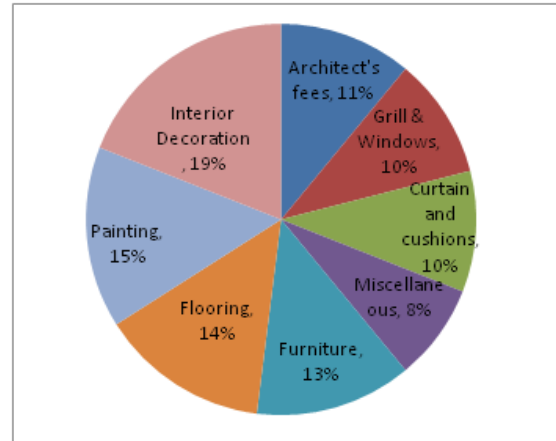|	
A. 30.24	B. 31.32
C. 33.45	D. 35.46
E. 28.15	

Direction: What value should come in place of question mark (?) in the following question?

5. $77 + 7.77 + 77.77 + 777.77 = ? + 77.7$

A. 663.61	B. 662.61
C. 862.61	D. 762.61
E. 863.61	

Directions (6-10): Study the pie-chart carefully to answer the following questions:

Cost estimated by a family in renovation of their house

Total estimated cost is Rs. 1,20,000

6. What is the difference in the amount estimated by the family on interior decoration and on architect's fees?
A. Rs. 10,0000	B. Rs. 9500
C. Rs. 7,200	D. Rs. 9,000
E. None of these	

7. During the process of renovation, the family actually incurred the miscellaneous expenditure of Rs. 10,200. The miscellaneous expenditure incurred by the family is what percentage of the total estimated cost?
A. 9.5%	B. 9%
C. 8.45%	D. 10.5%
E. None of these	

8. Other than getting the discount of 12% on the estimated cost of furniture and the actual miscellaneous expenditure being Rs. 10,200 instead of the estimated one, the family's estimated cost is correct. What is the total amount spent by the family in renovating the house?
A. Rs. 1,16,728	B. Rs. 1,15,926
C. Rs. 1,19,500	D. Rs. 1,16,500
E. None of these	

9. What is the cost estimated by the family on painting and flooring together?
A. Rs. 36,500
B. Rs. 34, 800
C. Rs. 36,000
D. Rs. 34,500
E. None of these

10. The family gets a discount on furniture and pays 12% less than the estimated cost on furniture. What is the amount spent on furniture?
A. Rs. 13,200   B. Rs. 14,526
C. Rs. 13,526   D. Rs. 13,728
E. None of these

Direction: In the following number-series only one number is wrong. If the wrong number is corrected, the series gets established following a certain logic. Below the series a number is given followed by (a), (b), (c), (d), and (e). You have to complete the series following the same logic as in the given series after correcting the wrong number. What should come at the place of (d) in the following question?
11. 6496.875, 1443.75, 412.5, 185, 110, 220
2657.8125, (a), (b), (c), (d), (e)
A. 67.5   B. 412.5
C. 90   D. 45
E. None of these.

Direction: In the following number-series only one number is wrong. If the wrong number is corrected, the series gets established following a certain logic. Below the series a number is given followed by (a), (b), (c), (d), and (e). You have to complete the series following the same logic as in the given series after correcting the wrong number. What should come at the place of (e) in the following question?
12. 6380, 3779, 2050, 1137, 696, 575
5900, (a), (b), (c), (d), (e)
A. 1010   B. 95
C. 580   D. 5
E. None of these

Direction: In the following number-series only one number is wrong. If the wrong number is corrected, the series gets established following a certain logic. Below the series a number is given followed by (a), (b), (c), (d), and (e). You have to complete the series following the same logic as in the given series after correcting the wrong number. What

should come at the place of (e) in the following question?
13. 12, 6, 4, 3, 2.6, 2
18, (a), (b), (c), (d), (e),
A. 3.6   B. 2.5
C. 3   D. 3.8
E. 2.8

Direction: In the following number-series only one number is wrong. If the wrong number is corrected, the series gets established following a certain logic. Below the series a number is given followed by (a), (b), (c), (d), and (e). You have to complete the series following the same logic as in the given series after correcting the wrong number. What should come at the place of (d) in the following question?
14. 20, 22, 26.4, 35.32, 48.048, 72.072, 115.3152
32, (a), (b), (c), (d), (e), (f)
A. 76.8768   B. 75
C. 74.5235   D. 80
E. 81.2569

Direction: In the following number-series only one number is wrong. If the wrong number is corrected, the series gets established following a certain logic. Below the series a number is given followed by (a), (b), (c), (d), and (e). You have to complete the series following the same logic as in the given series after correcting the wrong number. What should come at the place of (e) in the following question?
15. 21, 19, 26, -2, 61, -65, 150
52, (a), (b), (c), (d), (e), (f)
A. 70   B. -34
C. 61   D. -18
E. None of these

Direction (16-20): Given below are two graphs. First graph shows the Total Expenditure of a country in the Year 2015-2016. Second graph shows the Total Revenue earned in the same year by the same countries. Answer the question that follow. Further information about Fiscal Deficit is given below.

Fiscal Deficit = Total Expenditures – Total Revenue.

If the value is come out to be negative, then the value is called Fiscal Surplus. Or, Fiscal Surplus = Total Revenue – Total Expenditure.

Total Expenditure

Scale
100: 100cr

Total Revenue

Scale
100: 100cr
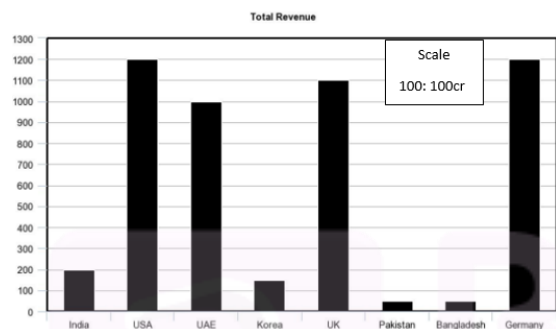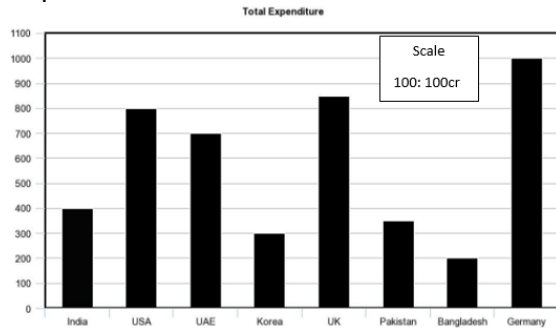
Instruction: Deficit countries are referred to all countries that have a Fiscal Deficit. Same is with surplus countries.

16. The value of Fiscal Surplus of USA is how much more than Fiscal Surplus of Germany (in %)?
A. 50%   B. 100%
C. 75%   D. 150%
E. 170%

17. The average value of deficit countries is X and the average value of all surplus values is Y. The ratio X/Y is
A. 14/23   B. 16/23
C. 16/27   D. 14/27
E. 13/22

18. It is observed that of the Total Expenditure, the expenditure on various sectors of all the countries are given. Some places are intentionally left blank.

	EDUCATIONAL	HEALTH	OTHERS
India	30%	30%	10%
USA	40%	40%	20%
UAE	-	-	-
Korea	-	-	-
UK	45%	40%	15%
Pakistan	25%	35%	40%
Bangladesh	40%	25%	35%
Germany	50%	40%	10%

It is given that USA spends Rs 150 cr more than UAE in Education Sector and Rs 10 cr less in Health Sector. Then the percentage value of OTHERS Sector for UAE is (in %)
A. 23.57%   B. 24.56%
C. 30.18%   D. 28.57%
E. 22.43%

19. It is given that the total amount spend on Education Sector by countries altogether is Rs 99.5 cr more than the total amount spend on Health Sector by all countries. The difference in amount spend on Education Sector and Health Sector by Korea is?

It is observed that of the Total Expenditure, the expenditure on various sectors of all the countries are given. Some places are intentionally left blank.

|	EDUCATIONAL	HEALTH	OTHERS
India	30%	30%	10%
USA	40%	40%	20%
UAE	-	-	-
Korea	-	-	-
UK	45%	40%	15%
Pakistan	25%	35%	40%
Bangladesh	40%	25%	35%
Germany	50%	40%	10%

It is given that USA spends Rs 150 cr more than UAE in Education Sector and Rs 10 cr less in Health Sector.
A. 122 cr   B. 77 cr
C. 11 cr   D. 87 cr
E. 112 cr

20. The average amount spend by Deficit countries on Educational and Health Sectors is Rs. X. The average amount spend by Surplus countries on Educational and Health Sectors is Rs Y. Y is greater than X by how much percentage (Given that Korea spend 77.5 cr on Health Sector)?
A. 216   B. 274
C. 244.35   D. 222.35
E. 220.35

Direction (21-25): The following bar graph shows the number of days required by 3 workers A, B & C to do their respective portion of work. The line graph shows the division of work as fractional parts. Read the given data carefully and answer the questions that follow-
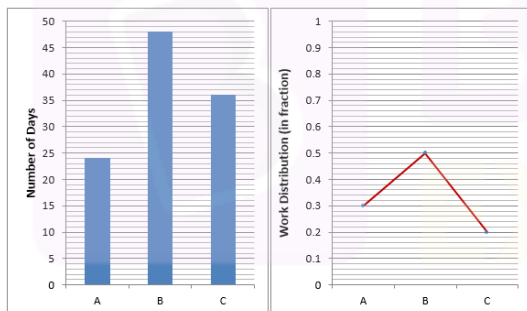
21. How much more work (in fraction) is done by the more efficient person among A and B in a single day?
A. B does more work by a fraction of 1/480
B. A does less work by a fraction of 1/360
C. A does more work by a fraction of 1/480
D. B does less work by a fraction of 1/240
E. None of these

22. If B is made to do the work alone and paid Rs.12 per hour, which he invests in an interest raising firm for 2 years. The firm calculates the compound interest on B's principal and pays interest to him with

10% tax deduction. If, for the interest compounded-annually, the rate of interest is 10% p.a., then find the actual interest paid to B after deduction is-
A. Rs.5775.472   B. Rs.5555.472
C. Rs.5445.472   D. Rs.5225.472
E. None of these

23. C reduces its efficiency by 75% to increase it working days by X, while B increases its efficiency by 20% to reduce its working days by Y. Then, X : Y is-
A. 125 : 4   B. 135 : 4
C. 15 : 2   D. 145 : 16
E. None of the above

24. If A, B and C work together simultaneously, in how many days can they finish the work together?
A. (1440/41) days   B. (1330/31) days
C. (1220/21) days   D. (1110/11) days
E. None of these

25.If A and B switch their given work distribution, the number of days for B and C together to finish the entire work by themselves is P, whereas, if B and C switch their given work distribution, the number of days for A and B together to finish the entire work by themselves is Q. then P : Q is-
A. 240 : 11   B. 240 : 19
C. 480 : 17   D. 480 : 19
E. None of these

Direction (26-30): Read the given information carefully and answer the question given below. In the bar graph the mark up percent (MP) and discount percent (Discount) is given for 4 products.
Note : MP is the given % above the cost price.
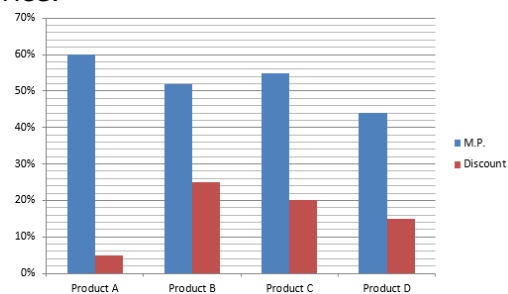
26. The shopkeeper brought product B and product D for INR 7400 and sold both the products as per conditions given in the bar graph. If he would have sold the product B at 8% profit and product D at 14% profit, he would lose INR 543.6, than the given condition. Find the difference in the C.P. of the two products.
A. INR 800   B. INR 750
C. INR 900   D. INR 850
E. INR 950

27. The shopkeeper purchased product A for INR 2580 and sold it after giving the discount. From the amount, he purchased another product and sold it at a loss of 15%. Find his approx. overall gain/loss percentage?
A. 28% gain   B. 29% gain
C. 28% loss   D. 27% loss
E. None of these

28. The shopkeeper calculated his intended selling price and profit on product C. However owing to some mistake while selling, the selling price increased by INR 9 and thus profit percentage become 24.24%. What is the C.P. of the product C?
A. INR 3750   B. INR 3800
C. INR 3913.4   D. INR 4500
E. Cannot be determined

29. The shopkeeper sold product D for INR 4536 after giving the discount 10% more than it should have given. If the shopkeeper wants his profit percentage 22.4% then how much discount should he give?
A. 24%   B. 22%
C. 20%   D. 18%
E. 15%

30.Find the ratio between the discount amount on product C whose C.P. is INR 3800 and product B whose S.P. is INR 3762.
A. 33: 32
B. 32: 33
C. 31: 33
D. 33: 31
E. None of these

Direction (31-35): Study the following information carefully and answer the questions given below.
The bar graph shows the ratio between the father's & son's present ages for 5 different groups.
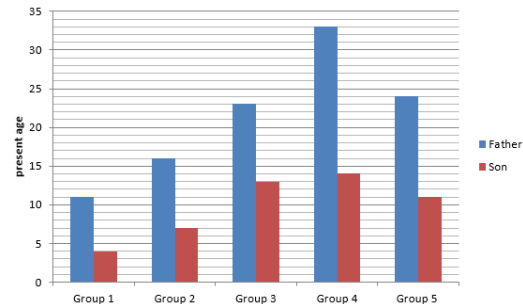
31. Five years ago, the sum of father and son's age of group 1 is five more than double the present age of Ram. The average of the present age of all of them is 62.5% of 56. Find the difference between Ram's age after 10 years and Father's age after 7 years.
A. 20 years   B. 21 years
C. 22 years   D. 24 years
E. 25 years

32. In Group 3, the son has a grandfather whose age was 6.5 times his age, 16 years ago. 6 years from now, Difference between age of grandfather and 2.5 times the age of son is 280% of 2.5. Father's age eight years ago, is what percentage of grandfather's age a year ago?
A. 45%   B. 45.5%
C. 47%   D. 47.5%
E. 80%

33.The son in group 5 has 5 children. The average age of these 5 children born at the intervals of 3 years each is 10 years. One year ago, the age of youngest son was 9.375% of his father's age. Also, the average age of all the fathers from all the groups 1 to 5 is 56.8. If the age of father (grandfather) of group 5 is removed from this average then find the new average?
A. 53   B. 53.75
C. 62   D. 62.75
E. None of these

34. Of group 4, afte 12 years the father's age will be twice the age of daughter's age . 3 years back, on his daughter's birthday father's age was 262.5% of his daughter's age, then father's present age is what percentage of the sum of daughter's and son's present ages?
A. 245%   B. 120%
C. 125%   D. 235%
E. 184%

35. In group 2, the difference between mother's present age and daughter's present age is 32 years. 7 years ago, an average of mother's and daughter's age is 18. The wife is seven years younger to her husband (father). Find out daughter's present age is approx. what percentage more/less of son's age.
A. 133% more   B. 133% less
C. 57% less   D. 60% less
E. 70% more

Direction (36-40): Study the following information carefully and answer the following questions.
There are 6 workers: A, B, C, D, E and F. The bar graph shows the time taken by workers to complete a piece of work. The line graph shows the rate of interest for 4 schemes which are offering interest for S.I. and C.I. for the amount invested by these workers.
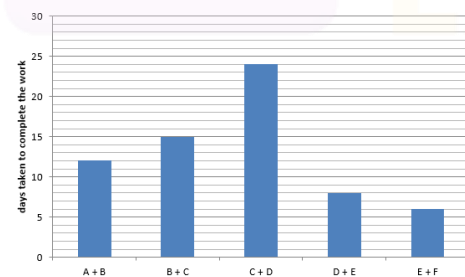
36. A is twice as good as worker C. If B alone completed the whole piece of work and got paid INR 245/day and invested one-fourth amount of his total earning in Scheme 3 for availing S.I. then find the interest he will receive after 4 years?
A. INR 1136.8   B. INR 142.1
C. INR 227.36   D. INR 252.1
E. INR 284.2

37. To complete a piece of work C & D together work for 5 days and the rest of the work is completed by E in 9.5 days. If E alone would have completed the whole work at a pay scale of INR 320 pere day and invested 62.5% of his toatl pay on scheme 1 for C.I., then find the amount he will receive after 2 years?
A. INR 2650.75   B. INR 2620.86
C. INR 2675.46   D. INR 2160
E. INR 2739.06

38. F can do a piece of work in 15 days. But D completes the whole work alone, and gets INR 455 for every 2 days of work. He invested 50% of the total amount in Scheme 2 for S.I. and rest in Scheme 3 for C.I., both for 2 years. Then, the interest received from scheme 3 is approximately what percentage more than the interest received from scheme 2?
A. 15.5%
B. 20%
C. 23.5%
D. 30%
E. 33.5%

39. C alone can complete the work in 60 days. B, C and E begin to do the work together, but B leaves after 6 days, C leaves 7 days before the completion of the work. E got paid INR 500/day. He invested the whole amount in Scheme 2 @ C.I. Find the amount he will receive after 3 years.
A. INR 4075
B. INR 3874
C. INR 8086
D. INR 5886
E. INR 5475

40. D, E and F alone can complete the work in ratio 8:2:3 days . They work together and complete the work. F invested his total amount which he earned from the work in Scheme 4 @ S.I. for 5 years and received an interest of INR 1116. Find the per day pay of F.
A. INR 570   B. INR 580
C. INR 630   D. INR 690
E. INR 720

Direction (41-45): Study the following graph carefully and then answer the questions below on it:
The percentage of five different types of mobile phones sold by Reliance Digital Store during two years
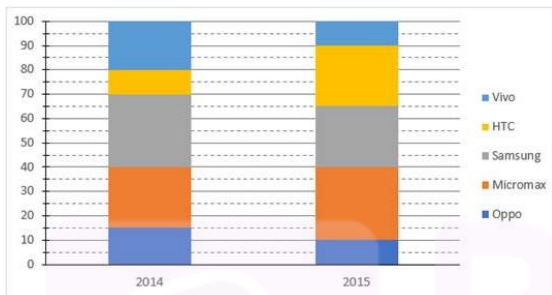
Total number of mobile phones sold in 2014 = 4,50,000
Total number of mobile phones sold in 2015 = 5,20,000

41. If 15% of Vivo mobiles sold during 2014 and 2015 were returned by the customers due to some defects, then how many Vivo mobiles were originally sold by the store?
A. 1,42,800   B. 121,825
C. 120,700   D. 21,300
E. None of these

42. If the number of Oppo Mobiles sold in 2015 was the same as that of 2014, what would have been its approximate percentage share in the total mobiles sold in 2015?
A. 11
B. 13
C. 15
D. 9
E. 21

43. What was the difference in the total number of Samsung mobiles sold in 2014 and 2015?
A. 5,000   B. 7,500
C. 10,000   D. 2,500
E. None of these

44. From 2014 to 2015, for which of the following mobile phones was the increase in sale percentage maximum?
A. Oppo   B. Vivo
C. HTC   D. Micromax
E. Samsung

45. If the percentage of Micromax mobiles sold in 2015 was the same as that of 2014, what would have been the number of micromax mobiles sold in 2015?
A. 1,12,500   B. 1,20,000
C. 1,25,000   D. Data Inadequate
E. None of these

Direction (46-50): Study the following table and answer the questions below. Production of sewing machine of 5 companies in august 2016 is given below with profit percentage earned by the companies on the sale and percentage of machines sold during that month.
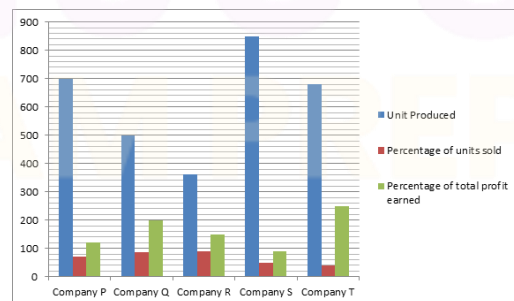
46. What is the profit earned by company T in the month of august 2016 if the cost price of one machine is INR500?
A. INR 3,25,000   B. INR 4,20,000
C. INR 1,36,000   D. INR 3,40,000
E. None of these

47.What is the average selling price of the products sold by company P, Q and S, if the cost price of each unit is INR 800?
A. INR 862500   B. INR **1886.86**
C. INR 1214200   D. INR 857800
E. None of these

48. Which company had the highest profit on sale with respect to the production, if the C.P. of one unit is INR 500?
A. R   B. Q
C. T   D. P
E. None of these

49. If the total cost price of all the units produced by company R is INR 2, 44,800 then what is the marked price of one unit if it allows a discount of 20% on sold units yet earning the mentioned profit.

A. INR 1850   B. INR 1700
C. INR 2125   D. INR 8500
E. None of these

50. The total selling price of units sold by company Q and S together is approx. what percentage of the total cost price of units produced of these companies if C.P. of each unit is same?
A. 243%   B. 145%
C. 45%   D. 490%
E. None of these

ANSWERS

1. Ans. E.

$$70\% \, of \, 354 + 152.2 = ?\% \, of \, 40 + ?\% \, of \, 60$$

$$\frac{354 \times 70}{100} + 152.2 = ? \times \frac{40}{100} + ? \times \frac{60}{100}$$

$$247.8 + 152.2 = \frac{4?}{10} + \frac{6?}{10}$$

$$400 = \frac{10?}{10}$$

$$? = 400$$

2. Ans. B.

$$(6422 - 4441 - 1979) \times \sqrt{1156} = ?^{\frac{1}{3}} + \sqrt{2116}$$

$$(6422 - 6420) \times 34 = ?^{\frac{1}{3}} + \sqrt{2116}$$

$$2 \times 34 = ?^{\frac{1}{3}} + 46$$

$$?^{\frac{1}{3}} = 68 - 46$$

$$? = 22^3$$

$$? = 10648$$

3. Ans. E.

$$70\% \, of \, (1246 + 283 - 652) = ?^2 + 172.9$$

$$\frac{70}{100} \times (1529 - 652) = ?^2 + 172.9$$

$$877 \times \frac{7}{10} = ?^2 + 172.9$$

$$613.9 - 172.9 = ?^2$$

$$? = \sqrt{441}$$

$$? = 21$$

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4. Ans. B.

$$\frac{(2751+6482-2456-5142)}{\sqrt{729}+\sqrt{1024}-\sqrt{576}} = ?^2 \div \sqrt{441}$$

$$\frac{(9233-7598)}{27+32-24} = ?^2 \div \sqrt{441}$$

$$\frac{1635}{35} = ?^2 \div 21$$

$$\frac{327}{7} = ?^2 \div 21$$

$$?^2 = \frac{327}{7} \times 21$$

$$? = \sqrt[2]{327 \times 3}$$

$$? = \sqrt[2]{981}$$

$$? = 31.32$$

5. Ans. C.

$$77 + 7.77 + 77.77 + 777.77 = ? + 77.7$$

$$7(11+1.11+11.11+111.11-11.1) = ?$$

$$7(134.33-11.1) = ?$$

$$7(123.23) = ?$$

$$? = 862.61$$

6. Ans. E.

Ans. E

Required difference =

$$\left(\frac{19-11}{100}\right) \times 120000 = 9600$$

7. Ans. C.

miscellaneous expenditure = 120,000 ×8%= 9600
actual miscellaneous expenditure= 10200
increased value= 10200-9600= 600
so total expenditure is increased= 120000+600=Rs. 120600
so, Required percentage= (10200/120600)*100=8.45%

8. Ans. E.

Actual cost of furniture = $\dfrac{88}{100} \times \dfrac{13}{100} \times 120000 = 13728$

Actual cost of furniture and miscellaneous expenditures = 13728+10200=23928
initially Estimated cost of furniture and miscellaneous expenditures

$$\left(\frac{13+8}{100}\right)\times 120000 = 25200$$

so, Total new expenditure of the family = 120000-25200+23928=118728

9. Ans. B.

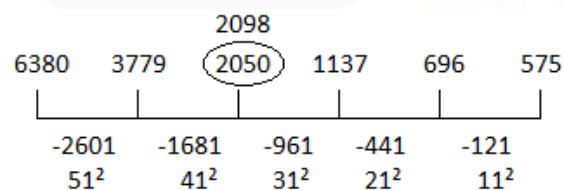Required estimated cost = $\left(\dfrac{15+14}{100}\right)\times 120000 = 34800$

10. Ans. D.

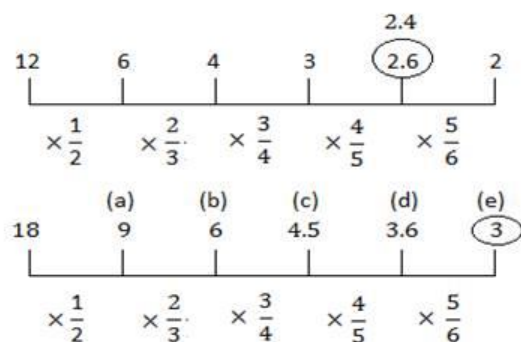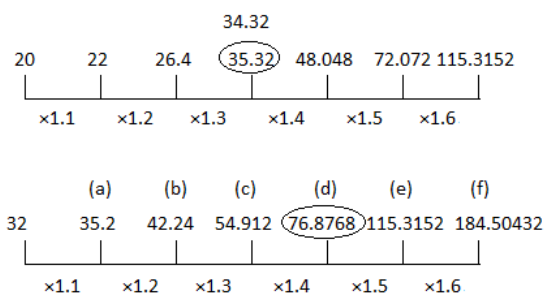Amount spent on furniture = $\dfrac{88}{100}\times\dfrac{13}{100}\times 120000 = 13728$
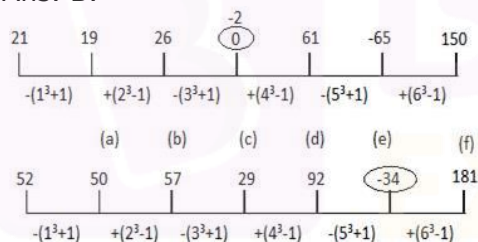
11. Ans. D.
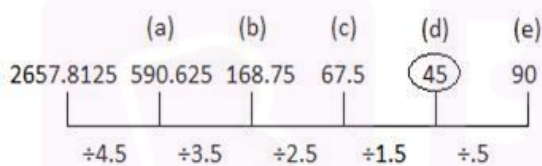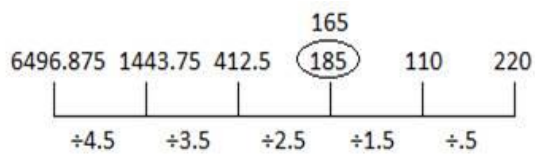
12. Ans. B.
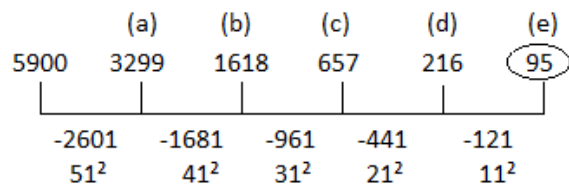
13. Ans. C.

14. Ans. A.

15. Ans. B.

16. Ans. B.
As we know, Fiscal Surplus is defined as the difference of Total Revenue and Total Expenditure. For USA, it is Rs. 1200 cr – Rs. 800 cr = Rs. 400 cr.
For Germany, it is Rs. 1200 cr – Rs. 1000 cr = Rs. 200 cr.
Fiscal Surplus of USA is greater by Rs. 200 cr.
It is greater by (200/200)*100 = 100%
Hence, the value of fiscal surplus of USA is greater by 100% than that of Germany.

17. Ans. B.
Deficit countries are those countries who have a Fiscal Deficit and Surplus Countries are those who have a Fiscal Surplus.
Therefore, X = Rs (200 + 150 + 300 + 150) cr
→X = Rs. 800 cr
And, Y = Rs (400 + 300 + 250 + 200) cr
→Y = Rs. 1150 cr
→X/Y = 800/1150
Hence, the ratio is 16/23

18. Ans. D.
USA's Total Expenditure is Rs. 800 cr
So, amount spend on Education Sector is 40%
→Rs 320 cr
So, UAE spend Rs 320 cr – Rs 150 cr = Rs 170cr on Education Sector
Amount spend on Health Sector is 40%
→Rs 320 cr
So, UAE spend RS 320 cr + Rs 10 cr = Rs 330 cr on Health Sector
Total Expenditure of UAE is Rs 700 cr.
So, amount spend on OTHERS Sector is Rs. (700 – 330 - 170) cr = Rs 200 cr
→200/700 = 28.57%
Hence, UAE spend 28.57% on Others Sector

19. Ans. A.
Let the amount spend on Education Sector by Korea is Rs x cr.
Then the total amount spend on Education Sector by all countries is
→Rs (120 + 320 + 170 + x + 382.5 + 87.5 + 80 + 500) cr
→Rs. (1660 + x) cr.
Let the amount spend on Health Sector by Korea is Rs. y cr.
Then the total amount spend on Health Sector by all countries is
→Rs. (120 + 320 + 330 + y + 340 + 122.5 + 50 + 400) cr
→Rs. (1682.5 + y) cr.
According to question,
1660 + x = 1682.5 + y + 99.5
→x – y = Rs. 122 cr
Hence, Korea spends Rs 122 cr more on Educational Sector than Health Sector.

20. Ans. B.
Korea spend Rs 77.5 cr on Health Sector. And it spends Rs 122 cr (from previous question) more on Education Sector. So it spends Rs. 199.5 cr on Education Sector.
Total amount spend by Deficit countries on Education Sector is
→(120 + 199.5 + 87.5 + 80) = Rs. 487 cr
Total amount spend by Deficit countries on Health Sector is
→(120 + 77.5 + 122.5 + 50) = Rs. 370 cr
Total amount spend on both sectors = Rs. 487 cr + Rs. 370 cr = Rs. 857 cr
Average = Rs. 857/4 = Rs. 214.25 cr
Total amount spend by Surplus countries on Education Sector is
→(320 + 170 + 382.5 + 500) = Rs. 1372.5 cr
Total amount spend by Surplus countries on Health Sector is
→(320 + 330 + 340 + 400) = Rs. 1390 cr
Total amount spend on both sectors = Rs. 1372.5 cr + Rs. 1390 cr = Rs. 2762.5 cr
Average = Rs. 2762.5/4 = Rs. 690.625 cr
→(Y-X)/Y*100 = 222.35%

21. Ans. C.
Work to be done by A (in fraction) = 0.3
No. of days taken by A to finish his work = 24 days
Let A's one day work be 1/x, then,
(1/x) (24) = 0.3
(1/x) = 1/80
Work to be done by B (in fraction) = 0.5
No. of days taken by B to finish his work = 48 days
Let B's one day work be 1/y, then,

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(1/y) (48) = 0.5
(1/y) = 1/96
As, 96 > 80, So, (1/96) < (1/80)
A does more work than B,
Fraction of work done more = (1/80) – (1/96) = (6/480) – (5/480) = 1/480

22. Ans. D.
Work to be done by B (in fraction) = 0.5
No. of days taken by B to finish his work = 48 days
Let B's one day work be 1/y, then,
(1/y) (48) = 0.5
(1/y) = 1/96
Hence, B will do the work alone in 96 days.
B's payment = (Rs.12/hr) x (96 days) x (24 hours/day) = Rs. 27648
C.I on this principal = P $\{[1 + (r/100)]^T – 1\}$
= 27648$\{[1 + (10/100)]^2 – 1\}$ = 27648 $(1.1^2 - 1)$
= 27648 (0.21) = Rs.5806.08
After 10% tax deduction, actual amount received,
= 90% of C.I = 0.9 x (Rs.5806.08) = Rs.5225.472

23. Ans. B.
Work to be done by C (in fraction) = 0.2
No. of days taken by C to finish his work = 36 days
Let C's one day work be 1/z, then,
(1/z) (36) = 0.2
(1/z) = 1/180
By reducing its efficiency by 75%
New efficiency (one day work) = 25% of 1/180 = 1/720
Working days increases by, X = 720 – 180 = 540 days …(1)
Also, Work to be done by B (in fraction) = 0.5
No. of days taken by B to finish his work = 48 days
Let B's one day work be 1/y, then,
(1/y) (48) = 0.5
(1/y) = 1/96
By increasing its efficiency by 20%,
New efficiency (one day work) = 120% of 1/96 = 1.2 x (1/96) = 1/80
Working days reduces by, Y = 96 – 80 = 16 days …(2)
Then, X : Y = 540 : 16 = 135 : 4

24. Ans. A.
Work to be done by A (in fraction) = 0.3
No. of days taken by A to finish his work = 24 days
Let A's one day work be 1/x, then,
(1/x) (24) = 0.3
(1/x) = 1/80
Work to be done by B (in fraction) = 0.5
No. of days taken by B to finish his work = 48 days
Let B's one day work be 1/y, then,
(1/y) (48) = 0.5
(1/y) = 1/96
Work to be done by C (in fraction) = 0.2
No. of days taken by C to finish his work = 36 days
Let C's one day work be 1/z, then,

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(1/z) (36) = 0.2
(1/z) = 1/180
Then, together, their one day work,
= (1/x) + (1/y) + (1/z) = (1/80) + (1/96) + (1/180)
= (54 + 45 + 24) / 4320 = 123/4320 = 41/1440
Then, (1/x) + (1/y) + (1/z) = (1/ (no. of days to finish work))
So, no. of days required to finish the work = (1440/41) days

25. Ans. E.
After A & B switch work distribution,
Work to be done by B (in fraction) = 0.3
No. of days taken by B to finish his work = 48 days
Let B's one day work be 1/y, then,
(1/y) (48) = 0.3
(1/y) = 1/160
Work to be done by C (in fraction) = 0.2
No. of days taken by C to finish his work = 36 days
Let C's one day work be 1/z, then,
(1/z) (36) = 0.2
(1/z) = 1/180
Then, together B + C their one day work,
= (1/y) + (1/z) = (1/160) + (1/180) = (9 + 8) / 1440 = 17/1440
Then, if, (1/y) + (1/z) = (1/ (no. of days to finish work))
So, no. of days required to finish the work by B & C = (1440/17) days
i.e., P = (1440/17) days
Also,
After B & C switch work distribution,
Work to be done by B (in fraction) = 0.2
No. of days taken by B to finish his work = 48 days
Let B's one day work be 1/y, then,
(1/y) (48) = 0.2
(1/y) = 1/240
Work to be done by A (in fraction) = 0.3
No. of days taken by A to finish his work = 24 days
Let A's one day work be 1/x, then,
(1/x) (24) = 0.3
(1/x) = 1/80
Then, together A + B their one day work, = (1/y) + (1/x) = (1/240) + (1/80)
= (1 + 3) / 240 = 1/60
Then, if, (1/y) + (1/z) = (1/ (no. of days to finish work))
So, no. of days required to finish the work by B & C = 60 days
i.e., Q = (60) days
Then, P : Q = (1440/17) : 60 = 24 : 17

26. Ans. C.
$(CP_1 \times 0.75 \times 1.52 + CP_2 \times 1.44 \times 0.85) - (CP_1 \times 1.08 + CP_2 \times 1.14) = 543.6$ .....(I)
$CP_1 + CP_2 = 7400$ .....(II)
On solving both equations simultaneously, we get
$CP_1 = $ Rs.3250
$CP_2 = $ Rs.4150
$CP_2 - CP_1 = $ Rs.900

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27. Ans. B.
C.P. of product A = INR 2580
He marked the price 60% above C.P.
⇒ M.P. of product A = 160% of 2580
⇒ M.P. of product A = INR 4128
He gave a discount of 5%
∴ S.P. of product A = 95% of 4128
⇒ S.P. of product A = INR 3921.6
He purchased another product of INR 3921.6 and sold it at 15% loss
∴ S.P. of new product = 85% of 3921.6
⇒ S.P. of new product = INR 3333.36
We can observe that C.P. of product A < S.P. of new product
∴ Profit is earned
Now, required profit = S.P. of new product - C.P. of product A
⇒Required profit = 3333.36 – 2580
⇒Required profit = INR 753.36
∴Required profit % = $\frac{753.36}{2580} \times 100 = 29.2\% \approx 29\%$

Hence, his overall gain is 29%

28. Ans. A.
Let the C.P. of product C be INR x
He marked the price 55% above C.P.
⇒ M.P. of product C = 155% of x
⇒ M.P. of product C = INR 31x/20
He gave a discount of 20%
∴ S.P. of product C = 80% of31x/20
⇒ S.P. of product C = INR 31x/25
Profit of product C = INR 31x/25 –x
⇒ Profit of product C = 6x/25

∴ Profit % = $\frac{\frac{6x}{25}}{x} \times 100 = 24\%$

so Profit increased by 24.24%-24%= 0.24%

∴ Required C.P. = $\frac{9}{0.24} \times 100$ = 3750

Hence, C.P. of product C is INR 3750

29. Ans. E.
Let the C.P. of the product D be INR x
He marked his price 44% above C.P.
⇒ M.P. of product D = 144% of x
⇒ M.P. of product D = 36x/25
A discount of (10+15) 25% is given on product D
⇒ S.P. of product D = 75% of36x/25
⇒ S.P. of product D = 27x/25
∴ 27x/25 = INR 4536
⇒ x = 4200
∴ C.P. of product D = INR 4200
M.P. of the product D = INR 6048
If new profit is 22.4% then
∴New S.P. = 122.4% of 4200
⇒ New S.P. = INR 5140.8

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Now, required discount % = $\frac{6048-5140.8}{6048} \times 100$

⇒Required discount % = $\frac{907.2}{6048} \times 100 = 15\%$

Hence, he should give a discount of 15% to earn a profit of 22.4% on product D.

30. Ans. C.
C.P. of product C = INR 3800
Shopkeeper marked the price of product C at 55%
⇒ M.P. of product C = 155% of 3800
⇒ M.P. of product C = INR 5890
He allows a discount of 20% on it
⇒ Discount on product C = 20% of 5890
⇒ Discount on product C = 1178
S.P. of product B = INR 3762
Let the M.P. be INR x
A discount of 25% was given on M.P.
⇒ 75% of x = 3762
⇒ 3x/4 = 3762
⇒ x = 5016
Discount given on product B = 5016 – 3762 =INR 1254
Now, required ratio = $\frac{1178}{1254} = \frac{31}{33}$

Hence, the ratio between the discount amount on product C whose C.P. is INR 3800 and product B whose S.P. is INR 3762 is 31: 33

31. Ans. C.
In group 1:
The ratio between father's and son's age is 11: 4
Let the father's age be 11x
And son's age is 4x
Five years ago, the sum of father and son's age of group 1 is five more and double the present age of Ram.
⇒ Father's age 5 years back = 11x – 5
⇒ Son's age 5 years back = 4x – 5
∴ Sum of their ages = 11x – 5 + 4x – 5 = 15x -10

Using above statement, Ram's present age = $\frac{15x-10-5}{2} = \frac{15x-15}{2}$

The average of the present age of all of them is 62.5% of 56

⇒ $\frac{11x+4x+\frac{15x-15}{2}}{3}$ = 62.5% of 56

⇒ $\frac{15x+\frac{15x-15}{2}}{3}$ = 35

⇒ $\frac{30x+15x-15}{2}$ = 35 × 3

⇒ 45x -15 = 35 × 6
⇒ 45x = 210 + 15
⇒ 45x = 225
⇒ x = 5
∴ Present age of father = 5 × 11 = 55 year

Present age of Ram = $\frac{15 \times 5 - 15}{2} = \frac{60}{2} = 30$ year

Ram's age after 10 years will be 40 year

Father's age after 7 years will be 62 year

∴ Difference between their ages = 62 – 40= 22 years

Hence, the difference between Ram's age after 10 years and Father's age after 7 years is 22 years

32. Ans. D.

In group 3:

Ratio of father's and son's age is 23: 13

Let the father's age be 23y

And son's age be 13y

The son has a grandfather whose age was 6.5 times to him 16 years ago

⇒ 16 years ago, let the son's age be x years and grandfather's age be 6.5x years

6 years from now, difference between age of grandfather and 2.5 times the age of son is 280% of 2.5

⇒After 6 years from now,

Son's age = x + 16 + 6 = 22 + x

And grandfather's age = 6.5x + 16 + 6 = 6.5x + 22

∴ 6.5x + 22 – 2.5(22 + x) = 280% of 2.5

⇒ 6.5x+ 22 – 55 - 2.5x = 7

⇒ 4x -33 = 7

⇒ 4x = 7 + 33

⇒ 4x = 40

⇒ x = 10

∴ Present age of grandfather = 6.5 × 10 + 16 = 81

Present age of son = 10 + 16 = 26 years

⇒ 13y = 26

⇒ y = 2

∴ Present age of father = 23 × 2 = 46

Eight years ago father's age = 46 – 8 = 38 years

A year ago grandfather's age = 80 years

Now, required percentage = 38/80 × 100 = 47.5%

Hence, eight years ago, father's age is 47.5% of grandfather's age a year ago.

33. Ans. A.

In group 5:

The ratio between father's age and son's age is 24: 11

Let the father's age be 24x

And son's age be 11x

The son has 5 children has 5 children.

The average of ages of 5 children born at the intervals of 3 years each is 10 years.

Let the age of youngest child be y

⇒The ages of 5 children can be written as y, (y+ 3), (y + 6), (y + 9), (y + 12)

∴ $\frac{y + y + 3 + y + 6 + y + 9 + y + 12}{5}$ = 10

⇒ y + y + 3 + y + 6 + y + 9 + y + 12 = 50

⇒ 5y + 30 = 50

⇒ 5y = 20

⇒ y = 4

One year ago, the age of youngest son was 9.375% of his father's age.

⇒ Son's age a year ago = 3

∴ 9.375% of father's age = 3

⇒ Father's age (son) a year ago = $\frac{300}{9.375} = 32$ years

⇒ Present age of father = 33 years
∴ Son's age is 33 years
⇒ 11x = 33
⇒ x = 3
Now, age of grandfather = 24× 3 = 72 years
The average age of all the fathers from the groups is 56.8.
⇒ $\frac{Sum\ of\ all\ the\ fathers\ from\ the\ groups}{5} = 56.8$

⇒ Sum of all the fathers from the groups = 284
Grandfather (father) of the group 5 leaves then the sum becomes = 284 – 72 = 212
∴New average = $\frac{212}{4} = 53$

Hence, if the age of father of group 5 is removed then the new average will be 53

34. Ans. B.
In group 4:
The ratio of father's age and son's age is 33: 14
Let the father's age be 33x
Son's age be 14x
Daughter's age be y
After 12 years, father's age will be twice the age of daughter
⇒ 33x + 12 = 2(y + 12)
⇒ 33x + 12 = 2y + 24
⇒ 33x – 2y = 12 ……………….(1)
3 years back, on his daughter's birthday father's age was 262.5% of his daughter's age
⇒ 33x- 3 = 262.5% of (y-3)

⇒ $33x - 3 = \frac{21}{8} (y -3)$

⇒ 8(33x – 3) = 21y – 63
⇒ 264x – 24 = 21y – 63
⇒ 264x – 21y = -63 + 24
⇒ 264x – 21y = -39 …………..(2)
Now, solving equation (1) and (2), we get
x = 2 and y = 27 (Daughter's present age)
∴ Father's present age = 33 × 2 = 66 years
Son's present age = 14 × 2 = 28 years
⇒ Sum of son and daughter's age = 28 + 27 = 55
Now, required percentage = $\frac{66 \times 100}{55} = 120\%$

Hence, father's present age is 120% of the sum of daughter and son's present age.

35. Ans. C.
In group 2:
The ratio of father's and son's present age is 16: 7
Let the father's age be 16y and
Son's age be 7y
Mother's age be p
And daughter's age be q
The difference between mother's present age and daughter's present age is 32 years

$\Rightarrow$ p - q = 32 ………. (1)

7 years ago, average of mother's and daughter's age is 18

$\Rightarrow \frac{(p-7)+(q-7)}{2} = 18$

$\Rightarrow$ p + q – 14 = 36

$\Rightarrow$ p + q = 50 ………..(2)

On solving equation (1) and (2) we get

p = 41 and q = 9

The wife is seven year younger to her husband

$\Rightarrow$ Age of husband (father) = 41 + 7 = 48 years

$\therefore$ 16y = 48

$\Rightarrow$ y = 3

$\therefore$ Age of the son = 7y = 3 × 7 = 21 years (elder than the daughter)

Now, the required difference = 21 – 9 = 12

$\therefore$Required percentage = $\frac{12}{21} \times 100 = 57.14 \approx 57\%$

(% is 'of son's age', so denominator = son's age)

Hence, daughter's present age is approx. 57% less than son's age.

36. Ans. E.

Let A's one day piece of work be a

B's one day piece of work be b

And C's one day piece of work be c

A and B together complete the piece of work in 12 days (given)

$\Rightarrow$ a + b = 1/12 …………. (1)

B and C together complete the piece of work in 15 days (given)

$\Rightarrow$ b + c = 1/15……………. (2)

A is twice as good as C (given)

$\Rightarrow$ a = 2c ………………… (3)

Now putting value of a in equation (1), we get

$\Rightarrow$ 2c + b = 1/12 ………… (4)

On solving equation (2) and (4), we get

b = 1/20

$\therefore$ B alone can complete the piece of work in 20 days.

B's one day pay = INR 245

$\Rightarrow$ B's 20 days pay = INR 4900

He invested 1/4th of 4900 in Scheme 3 @ S.I. for 4 years

$\Rightarrow$ Principle amount = 1/4th of INR 4900 = INR 1225

$\Rightarrow$ Rate of interest = 5.8% (From graph)

$\Rightarrow$ Time period = 4 years (Given)

$\therefore$ Interest = 1225*5.8*4/100= 284.2

Hence, B will receive INR 284.2 as interest on his amount of INR 1225 after 4 years

37. Ans. B.

C and D together can complete a piece of work in 24 days

$\Rightarrow$ C and D's one day work = 1/24

They work for 5 days

$\Rightarrow$ C and D's 5-day work= 5/24

Remaining work = 1- 5/24 = 19/24

Remaining work is done by E alone in 9.5 days

$\Rightarrow$ E alone can complete the whole work in = (24 × 9.5)/19 = 12 days

E's per day pay = INR 320

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E's 12 day pay = 12 × 320 = INR 3840
He invested 62.5% of his pay in scheme 1at C.I. for 2 years
⇒ Principle amount = 62.5% of 3840 = INR 2400
⇒ Rate of interest = 4.5% (for C.I.)
⇒ Time period = 2 years

∴ Amount =2400 $\left(1 + \frac{4.5}{100}\right)^2$

⇒ Amount = INR 2620.86
Hence, E's amount after 2 years is INR 2620.86

38. Ans. C.
F can complete the work in 15 days
⇒ F's one day work = 1/15
E and F can complete the work in 6 days (given)
⇒ (E and F)'s one day work = 1/6
Let E's one day work be 1/x

∴ $\frac{1}{x} + \frac{1}{15} = \frac{1}{6}$

⇒ 1/x = 1/10
⇒ E can complete the work in 10 days
D and E can complete the work in 8 days (given)
Let D's one day work be 1/y

∴ $\frac{1}{y} + \frac{1}{10} = \frac{1}{8}$

⇒ 1/y = 1/40
⇒ D can complete the work alone in 40 days
For every 2 days he receives INR 455
⇒ Total amount received by him on completing the work = INR 455 × 20 = INR 9100
He invested 50% of his total amount in scheme 2 @ S.I. for 2 years = 50 % of 9100
⇒ Principle amount = INR 4550
⇒ Rate of interest = 5% p.a. @ S.I.
⇒ Time period = 2 years

∴ Interest = $\frac{4550 \times 5 \times 2}{100}$ = INR 455

He invested the remaining 50% of his amount on scheme 3 @ C.I. for 2 years
⇒ Principle amount = INR 4550
⇒ Rate of interest = 6% p.a. @ C.I.
⇒ Time period = 2 years

∴ Amount = $4550\left(1 + \frac{6}{100}\right)^2$

⇒ Amount =INR 5112.38
∴ Compound Interest = 5112.38 – 4550
⇒ Compound Interest = INR 562.38
Now, required difference = 562.38– 455 = INR 107.38

∴Required percentage = $\frac{107.38}{455} \times 100$ = 23.6 ≈ 23.5%

Hence, interest received from scheme 3 is 24% more than the interest received from scheme 2

39. Ans. A.
C can complete the work alone in 60 days
⇒ C's one day work = 1/60

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B and C can complete the work in 15 days
⇒ (B +C)'s one-day work = 1/15
∴ B's one day work = 1/15 – 1/60 = 1/20
C and D can complete the work in 24 days
⇒ (C + D)'s one day work = 1/24
∴ D's one day work = 1/24 – 1/60 = 1/40
D and E can complete the work in 8 days
⇒ (D + E)'s one day work = 1/8
∴ E's one day work = 1/8- 1/40 = 1/10
Let the work be finished in x days
∴ Work done by B in 6 days + Work done by C in (x – 7) days + work done by E in x days = 1

$$\Rightarrow 6 \times \frac{1}{20} + (x-7) \times \frac{1}{60} + x \times \frac{1}{10} = 1$$

$$\Rightarrow \frac{3}{10} + \frac{x-7}{60} + \frac{x}{10} = 1$$

$$\Rightarrow \frac{3 \times 6 + (x-7) + 6x}{60} = 1$$

$$\Rightarrow \frac{18 + x - 7 + 6x}{60} = 1$$

$$\Rightarrow \frac{11 + 7x}{60} = 1$$

⇒ 11 + 7x = 60
⇒ 7x = 49
⇒ x = 7
E works for 7 days
E got paid INR 500/ day
⇒ E's total pay = 500 × 7 = INR 3500
He invested the whole amount in scheme 2 at C.I. for 3 years
⇒ Principle amount = INR 3500
⇒ Rate of interest = 5.2% @ C.I.
⇒ Time period = 3 years

$$\therefore \text{Amount} = 3500 \left(1 + \frac{5.2}{100}\right)^3$$

⇒ Amount = 3500(1.052)³
⇒ Amount = 4074.88 ≈ 4075
Hence, E will receive approx. INR 4075 after 3 years.

40. Ans. D.
D, E and F alone can complete the work in ratio 8:2:3
∴ Let D alone complete the work in 8x days
Let E alone complete the work in 2x days
And F alone complete the work in 3x days
D and E together can complete the work in 8 days (given)
⇒ (D + E)'s one day work = 1/8

$$\therefore \frac{1}{8x} + \frac{1}{2x} = \frac{1}{8}$$

$$\Rightarrow \frac{1+4}{8x} = \frac{1}{8}$$

⇒ 40 = 8x
⇒ x = 5
⇒ D alone can complete the work in 40 days

⇒ E alone can complete the work in 10 days
⇒ F alone can complete the work in 15 days
When they all work together to finish the work in say M days,

∴ ($\frac{1}{40} + \frac{1}{10} + \frac{1}{15}$) (M days) = 1 where,

⇒ $\frac{3+12+8}{120} = \frac{23}{120}$

Then, M = 120/23 days
∴They all work together to complete the work in 120/23 days.
Let the amount he earned be INR y
He invested his amount in Scheme 4 @ S.I. for 5 years
⇒ Principle amount = INR y
⇒ Rate of interest = 6.2% @ S.I.
⇒ Time period = 5 years

∴ Interest = $\frac{y \times 6.2 \times 5}{100} = 1116$

⇒ 31y = 111600
⇒ y = 3600

∴ His per day pay = $\frac{3600}{\frac{120}{23}} = 690$

Hence, F's one day pay is INR 690

41. Ans. C.
Number of Vivo mobiles sold in 2014 = (100 – 80)% of 4,50,000
= 20% of 450000 = (20/100) × 4,50,000 = 90,000
Similarly, Number of Vivo mobiles sold in 2015 = (100 – 90)% of 5,20,000
= (10/100) × 5,20,000 = 52,000
∴ Total Vivo mobiles sold in these two years = 90000 + 52000 = 1,42,000
Given that, out of these 1,42,000 Vivo mobiles, 15% of the mobiles are returned by the customer.
∴ Number of Vivo mobiles originally sold by the store = (100 – 15)% of 1,42,000
= (85/100) × 1,42,000 = 120700

42. Ans. B.
Given:
Oppo Mobiles sold in 2015 = Oppo Mobiles sold in 2014
∵ Oppo Mobiles sold in 2014 = 15% of 450000
= (15/100) × 450000 = 67500
∴ Oppo Mobiles sold in 2015 = 67500
Also, total sold mobiles in 2015 = 520000
∴ Percentage share of Oppo Mobiles in total sold mobiles in 2015

$= \frac{67500}{520000} \times 100 = 12.98\% \approx 13\%$

43. Ans. A.
Total number of Samsung mobile sold in 2014 = (70 – 40)% of 4,50,000
= (30/100) × 4,50,000 = 1,35,000
Total number of Samsung mobile sold in 2015 = (65 – 40)% of 5,20,000
= (25/100) × 5,20,000 = 1,30,000
∴ The difference in Samsung mobiles sold in 2014 and 2015
= 1,35,000 – 1,30,000 = 5,000

44. Ans. C.

Type of Mobile	In 2014		In 2015		Change from 2014 to 2015	Increase %
	% of Mobile Sold	Number of mobile sold	% of Mobile Sold	Number of mobile sold		
Oppo	15	167500	10	52000	-15500	decrease
Micromax	25	112500	30	156000	43500	38.67
Samsung	30	135000	25	130000	-5000	decrease
HTC	10	45000	25	130000	85000	188.89
Vivo	20	90000	10	52000	-38000	Decrease

As we can see from this table that, Number of Mobile sold for Micromax and HTC are increasing from 2014 to 2015 and among that, increase in Micromax is more than that in HTC.

45. Ans. E.
Given:
Percentage of Micromax mobile sold in 2015 = Percentage of Micromax mobile sold in 2014
∵ Percentage of Micromax mobile sold in 2014 = 25%
∴ Percentage of Micromax mobile sold in 2015 = 25%
∴ Number of Micromax mobile sold in 2015 = 25% of 520000 = (25/100) × 520000 = 130000

46. Ans. D.
Total unit produced by company T = 680
40% of its produced units were sold
Total unit sold by company T = 680 × 40/100 = 272
If C.P. of one unit is INR 500
Then C.P. of 272 units produced by company T = 500 × 272 = INR 1, 36,000
Profit percentage earned by company T is 250% on C.P.
⇒ Profit = INR 3, 40,000
Hence, profit earned by company T is INR 3, 40,000

47. Ans. B.
Units produced by company P = 700
Units sold by company P = 70% of 700 = 490
Cost price of 490 units produced by company P = 490 × 800 = INR 3, 92,000
Profit earned by company P is 120% on C.P.
⇒Profit = INR 4, 70,400
∴ **S.P. of 490 units of company P = INR 8, 62,400**
Units produced by company Q = 500
Units sold by company Q = 85% of 500 = 425
Cost price of 425 units produced by company Q = 425 × 800 = INR 3, 40,000
Profit earned by company Q is 200% on C.P.
⇒Profit = INR 6, 80,000
∴ **S.P. of 425 units of company Q = INR 1020000**
Units produced by company S = 850
Units sold by company S = 50% of 850 = 425
Cost price of 425 units produced by company S = 425 × 800 = INR 3, 40,000

Profit earned by company S is 90% on C.P.
⇒Profit = INR 3, 06,000
∴ **S.P. of 425 units of company S = INR 6, 46,000**
Now, average S.P. = (**8, 62,400+ 1020000 + 6, 46,000)/(425+490+425)=INR 1886.86**

48. Ans. B.
Total unit produced by company P = 700
70% of its produced units were sold
Total unit sold by company P = 700 × 70/100 = 490
If C.P. of one unit is INR 500
Then C.P. of 490 units produced by company P = 500 × 490 = INR 2, 45,000
Profit percentage earned by company P is 120% on C.P.
⇒Profit = INR 2, 94,000
Thus, profit earned by company P is INR 2, 94,000
Total unit produced by company Q = 500
85% of its produced units were sold
Total unit sold by company Q = 500 × 85/100 = 425
If C.P. of one unit is INR 500
Then C.P. of 425 units produced by company Q = 500 × 425 = INR 2, 12,500
Profit percentage earned by company Q is 200% on C.P. of sold units
⇒Profit = INR 4, 25,000
Thus, profit earned by company Q is INR 4, 25,000
Total unit produced by company R = 360
90% of its produced units were sold
Total unit sold by company R = 360 × 90/100 = 324
If C.P. of one unit is INR 500
Then C.P. of 324 units produced by company R = 500 × 324 = INR 1, 62,000
Profit percentage earned by company R is 150% on C.P. of sold units
⇒ Profit = INR 2, 43,000
Thus, profit earned by company R is INR 2, 43,000
Total unit produced by company S = 850
50% of its produced units were sold
Total unit sold by company S = 850 × 50/100 = 425
If C.P. of one unit is INR 500
Then C.P. of 425 units produced by company S = 500 × 425 = INR 2, 12,500
Profit percentage earned by company S is 90% on C.P.
⇒ Profit = INR 1, 91,250
Thus, profit earned by company S is INR 1, 91,250
Total unit produced by company T = 680
40% of its produced units were sold
Total unit sold by company T = 680 × 40/100 = 272
If C.P. of one unit is INR 500
Then C.P. of 408 units produced by company T = 500 × 272 = INR 1, 36,000
Profit percentage earned by company T is 250% on C.P.
⇒Profit = INR 3, 40,000
Hence, profit earned by company T is INR 3, 40,000
Hence, highest profit is earned by company Q

49. Ans. C.
Total C.P. of 360 units produced by company R = INR 2, 44,800
⇒C.P. of one unit = 2, 44,800/360 = INR 680
Total units sold by company R = 324

∴C.P. of sold units = 324 × 680
⇒C.P. of sold units = INR 2, 20,320
Company earned a profit of 150% on C.P. of sold units
∴Profit = INR 3, 30,480
⇒S.P. of 324 units = INR 5, 50,800
⇒S.P. of one unit = INR 1700
Let the marked price of one unit be x
⇒ x – 20% of x = 1700
⇒ x – x/5 = 1700
⇒4x/5 = 1700
⇒ x = 8500/4
⇒ x = 2125
Hence, marked price of one unit of sewing machine produced by company R is INR 2125

50. Ans. A.
Total units produced by company Q = 500
Total units sold by company Q = 400
Let C.P. of one unit be INR x
⇒C.P. of 400 units = INR 400x
Profit is 200% of C.P. of units sold
⇒Profit of company Q = INR 800x
S.P. of sold units of company Q = INR 1200x
Total units produced by company S = 850
Total units sold by company S = 425
Let C.P. of one unit be INR x
⇒C.P. of 425 units = INR 425x
Profit is 90% of C.P. of units sold
⇒Profit of company S = INR 382.5x
S.P. of sold units of company S = INR 807.5x
Now, Total S.P. = INR 2007.5x
Total C.P. = INR 825x
∴Required ratio = {(2007.5x)/(825x)}*100

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