Solutions- Medium Test

Solutions for questions ١ to ٤:

١ (a): Per capita production of Amul butter is least in ٢٠١٤. Since, the population maximum in ٢٠١٤.

. (d): The per capita production of Nutralite Butter was the most in ٢٠١٣. (by observation)

٣. (c): A٢

٤. (C):

Solutions for questions ٥ to ٨:

٥. (a): Sales of C٥ in ٢٠٢٠ = ٢٠٪ of ٨٠٠٠ = ١٦٠٠ cr.,
Sales of C٥ in ٢٠٢٢ = ٢٠٪ of ١١٥٢٠ = ٢٣٠٤ cr.
So, percentage increase = $\frac{٢٣٠٤ - ١٦٠٠}{١٦٠٠}$ ، ١٠٠ = ٤٤٪.

٦. ١١٥٢٠ = ٨٠٠٠(١+r)٢

   R = ٢٠ percent

٧. (a): Total Market in ٢٠٢٤ = ١.١ × ١.١ × ١١٥٢٠ = ١٤٠٠٠ (approx.)

   New Market = ١٤٠٠٠ − ٢٤٨٠ = ١٢٤٠. As C٤ captures $\frac{١}{٣}$ of ٢٤٨٠، so the approx. share of C٤ in ٢٠٢٤ =

   ٢٨٪ of (١١٥٢٠) + $\frac{١}{٣}$ × ٢٤٨٠ = ٤٠٥٠

   So, percentage share of C٤ in ٢٠٢٤ = $\frac{٤٠٥٠}{١٤٠٠٠}$ ، ١٠٠ = ٢٩٪ approx.)

٨. (d): As we do not know that what part of the market share of C١، C٢، C٥ has been eaten by C٥ & in what proportion. So, we cannot find the answer.

Solutions for questions ٩ to ١٢:

٩. (c): For this we need to minimize the cost for each of the task، then we will find the minimum cost.
Minimum cost = $٢٣ (Child ٤ doing Going for Morning walk) + $٣٧ (Child ٥ doing Exercise) + $٢٨ (Child ١ doing home work) + $٢١ (Child ٢ drink Milk) + $٣٤ (Child ٣ family work) = $١٤٣

١٠. (b): For this we need to maximize the cost each of the task، then we will find the maximum cost.
Maximum Cost = $٣٦ (Child ٥ doing Going for Morning walk) + $٥٧ (Child ٣ doing Exercise) + $٥٥ (Child ٢ doing home work) + $٥٥ (Child ١ drink Milk) + $٥١ (Child ٤ family work) = $٢٥٤

١١. (a)
Note:
C١ Chosen ١ (Doing First ٢ works)
C٢ Chosen ٢ (Doing remaining ٣ works)
GM Going for Morning walk
EX Exercise
CH Completing their Homework
DM Drinking Milk
AF Assisting in Family work
ToS Total Cost

C١	C٢	GM	EX	CH	DM	AF	ToS
١	٢	٣٥	٤٨	٥٥	٢١	٣٥	١٩٤
١	٣	٣٥	٤٨	٥٢	٢٦	٣٤	١٩٥

١	٤	٣٥	٤٨	٣٨	٣٧	٥١	٢٠٩
١	٥	٣٥	٤٨	٤٤	٤٢	٤٧	٢١٦
٢	١	٣١	٤٢	٢٨	٥٥	٢٦	١٨٢
٣	١	٤٤	٥٧	٢٨	٥٥	٢٦	٢١٠
٤	١	٢٣	٣٥	٢٨	٥٥	٢٦	١٦٧
٥	١	٣٦	٣٧	٢٨	٥٥	٢٦	١٨٢
٢	٣	٣١	٤٢	٥٢	٢٦	٣٤	١٨٥
٢	٤	٣١	٤٢	٣٨	٣٧	٥١	١٩٩
٢	٥	٣١	٤٢	٤٤	٤٢	٤٧	٢٠٦
٣	٢	٤٤	٥٧	٥٥	٢١	٣٥	٢١٢
٤	٢	٢٣	٣٥	٥٥	٢١	٣٥	١٦٩
٥	٢	٣٦	٣٧	٥٥	٢١	٣٥	١٨٤
٣	٤	٤٤	٥٧	٣٨	٣٧	٥١	٢٢٧
٣	٥	٤٤	٥٧	٤٤	٤٢	٤٧	٢٣٤
٤	٣	٢٣	٣٥	٥٢	٢٦	٣٤	١٧٠
٥	٣	٣٦	٣٧	٥٢	٢٦	٣٤	١٨٥
٤	٥	٢٣	٣٥	٤٤	٤٢	٤٧	١٩١
٥	٤	٣٦	٣٧	٣٨	٣٧	٥١	١٩٩

Choosing Child ٤ and Child ١ will be the best option for John.

١٢. (C) : The answer can be obtained directly by increasing the answer in question ١١ by ٥٠٪، as all the Children increase the cost by ٥٠٪ and hence the total cost will increase by ٥٠٪ only.

Solutions for questions ١٣ to ١٦:
From (II)، ٤٠٪ of total number of students = ٩٦ Total number of students = (٩٦/٤٠)×١٠٠=٢٤٠

Number of boys = ٢٤٠ − ٩٦ = ١٤٤

From (I)، number of average male students = ١٤٤/٣ = ٤٨

From (III)، number of excellent students = ٢٤٠/٢ =

١٢٠

Number of excellent female = ١٢٠ − ٥٠ = ٧٠

From these calculations، we get the following table:

	Performance			Total
	Average	Good	Excellent	

Male	٤٨	٤٦	٥٠	١٤٤
Fe male	١٨	٨	٧٠	٩٦
Total	٦٦	٥٤	١٢٠	٢٤٠

١٣. (b) : From the above table، it is clear that number of male good students = ٤٦

١٤. (c) : From the above table، it is clear that number of female good students = ٨

١٥. (d) : Number of female good students=٨
Number of males average students=٤٨
Required ratio =٨:٤٨=١:٦

١٦. (b) : Total number of excellent students=١٢٠
Number of female excellent students=٧٠
Required fraction

Solutions for question ١٦ to ٢٠:

١٧. (b) : R٢ → D٢ → DR٢

١٨. (d) : Number of refineries=٦
Number of depots=٧
Number of districts=٩
Therefore، number of possible ways to send petrol from any refinery to any district is ٦ × ٧ × ٩ = ٣٧٨.

١٩. (b) : If you look for large figures you would find them in both tables in D٥.

Largest cost=١١٥٧.٧+١٠٣٥.٣

= ٢١٩٣.٠٠

٢٠. (b) : R٤→D٥→DR٢
The least cost to reach to AA B is for AE. And that is BD to AE is zero.

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