

Solutions- Medium Test

Solutions for questions 1 to 4:

1. (a) : Per capita production of Amul butter is least in 2014. Since, the population maximum in 2014.
2. (d) : The per capita production of Nutralite Butter was the most in 2013. (by observation)
3. (c) ; A2

4. (c) ;

Solutions for questions 5 to 8:

5. (a) : Sales of C5 in 2020 = 20 % of 8000 = 1600 cr.,
Sales of C5 in 2022 = 20% of 11520 = 2340 cr.
So, percentage increase = $\frac{2304 - 1600}{1600} \times 100 = 44\%$
6. $11520 = 8000(1+r)^2$
R=20 percent
7. (a) : Total Market in 2024 = $1.1 \times 1.1 \times 11520 = 14000$ (approx.)
New Market = $14000 - 2480 = 1240$. As C4 captures $\frac{1}{3}$ of 2480; so the approx. share of C4 in 2024 =
 $28\% \text{ of } (11520) + \frac{1}{3} \times 2480 = 4050$
So, percentage share of C4 in 2024 = $\frac{4050}{14000} \times 100 = 29\%$ (approx.)
8. (d) : As we do not know that what part of the market share of C2,C3,C5 has been eaten by C5& in what proportion. So, we cannot find the answer.

Solutions for questions 9 to 12:

9. (c) : For this we need to minimize the cost for each of the task, then we will find the minimum cost.
Minimum cost = \$23 (Child 4 doing Going for Morning walk) + \$37 (Child 5 doing Exercise) + \$28 (Child 1 doing home work) + \$21 (Child 2 drink Milk) + \$34 (Child 3 family work) = \$143
10. (b) : For this we need to maximize the cost each of the task, then we will find the maximum cost.
Maximum Cost = \$36 (Child 5 doing Going for Morning walk) + \$57 (Child 3 doing Exercise) + \$55 (Child 2 doing home work) + \$55 (Child 1 drink Milk) + \$51 (Child 4 family work) = \$254
11. (a)
Note:
C1 Chosen 1 (Doing First 2 works)
C2 Chosen 2 (Doing remaining 3 works)
GM Going for Morning walk
EX Exercise
CH Completing their Homework
DM Drinking Milk
AF Assisting in Family work
ToS Total Cost

C1	C2	GM	EX	CH	DM	AF	ToS
1	2	35	48	55	21	35	194
1	3	35	48	52	26	34	195

1	4	35	48	38	37	51	209
1	5	35	48	44	42	47	216
2	1	31	42	28	55	26	182
3	1	44	57	28	55	26	210
4	1	23	35	28	55	26	167
5	1	36	37	28	55	26	182
2	3	31	42	52	26	34	185
2	4	31	42	38	37	51	199
2	5	31	42	44	42	47	206
3	2	44	57	55	21	35	212
4	2	23	35	55	21	35	169
5	2	36	37	55	21	35	184
3	4	44	57	38	37	51	227
3	5	44	57	44	42	47	234
4	3	23	35	52	26	34	170
5	3	36	37	52	26	34	185
4	5	23	35	44	42	47	191
5	4	36	37	38	37	51	199

Choosing Child 4 and Child 1 will be the best option for John.

12. (c) : The answer can be obtained directly by increasing the answer in question 11 by 50%, as all the Children increase the cost by 50% and hence the total cost will increase by 50% only.

Solutions for questions 13 to 16:

From (II), 40% of total number of students = 96

Total number of students = $(96/40) \times 100 = 240$

Number of boys = $240 - 96 = 144$

From (I), number of average male students = $144/3 = 48$

From (III), number of excellent students = $240/2 = 120$

Number of excellent female = $120 - 50 = 70$

From these calculations, we get the following table.

	Performance			Total
	Average	Good	Excellent	

Male	48	46	50	144
Female	18	8	70	96
Total	66	54	120	240

13. (b) : From the above table, it is clear that number of male good students = 46

14. (c) : From the above table, it is clear that number of female good students = 8

15. (d) : Number of female good students = 8

Number of males average students = 48

Required ratio = 8 : 48 = 1 : 6

16. (b) : Total number of excellent students = 120

Number of female excellent students = 70

Required fraction

Solutions for question 16 to 20:

17. (b) : $R2 \rightarrow D2 \rightarrow DR2$

18. (d) : Number of refineries = 6

Number of depots = 7

Number of districts = 9

Therefore, number of possible ways to send petrol from any refinery to any district is $6 \times 7 \times 9 = 378$.

19. (b) : If you look for large figures you would find them in both tables in D5.

Largest cost = $1157.7 + 1035.3$

= 2193.00

20. (b) : $R4 \rightarrow D5 \rightarrow DR2$

The least cost to reach to AAB is for AE. And that is BD to AE is zero.