CASELET SOLUTION:

Questions 1 to 3 :

SinceGhoshbabudistributedhispropertyequallyamonghis4daughters,eachoneofthemshouldget25%oftheproperty.The eldestdaughter got 20%of the totalpropertyandRs.25000 incash.So,Rs.25000 shouldconstitute5%ofthetotalproperty.HencethetotalpropertyisworthRs.5lakhs.ThistheanswertoQ2.

Now, the totalcashgivenbyhim=Rs.25000 (eldestdaughter)+Rs.50000 (seconddaughter)+Rs.150000 (i.e.Rs.75000eachtohisthirdandfourthdaughters)=Rs.225000.So, outofhistotalpropertyofRs.500000,Rs.225000iscash,sothegoldandsilvershouldbeworthRs.275000.ThisistheanswertoQ1.

IfGhoshBabuhasequalnumberofgoldandsilverbars, thevalueof1goldbarand1silverbar isRs.5000 (i.e. Rs.4000 +Rs.1000) and the total worth of gold and silver bars is Rs.275000. Hence there has to be 275000/5000=55goldandsilverbarseach.ThisistheanswertoQ81.

Students please note that this set of questions can intelligently by solvedby looking at the answer choices.

Sinceweknow that thecombinedvalueof1goldand1silverbarshouldbeRs.5000,so theanswer toQ1 whendividedby5000 shouldgive the answer toQ3. Theonly pairof answerchoices that satisfies this is Rs.275000and55.HenceanswerstoQ79andQ81canbeobtainedwithoutmucheffort.Rememberthegoldenrule:wheneveryouhavequestionsinaset,readallthequestionsfirstbeforeyougoontosolvethem.

Q1.b

Q2.a

Q3.d

Questions 4 to 8 :

Q4.c

LetusassumethatGhoshBabuhaddepositedRs.100initially.

Year	Opening Balance	Interest Earned	Withdrawn by Ghosh Babu	Closing Balance
1986	100	10	10 + 20 = 30	80
1987	80	8	8 + 40 = 48	40
1988	40	4	4 + 20 = 24	20
1989	20	2	22	0

Hence, had he depositedRs.100 initially, he should havewithdrawnRs.22 at the end to close the account. SincehewithdrewRs.11000,attheendheshouldhaveinitiallydepositedRs.50000.

Q5.d Hewithdrewthesmallestamountafterthe4th yearviz.Rs.11000.

Q6.a Hecollectedthemaximuminterestafterthe1st yearviz.0.1x50000=Rs.5000.

Q7. b GhoshBabuwithdrewthemaximumamountafterthe2nd yearviz.0.48x50000=Rs.24000

Q8.a As seen from the above table, the total interest collected by Ghosh Babu is Rs.24 on Rs.100. Hence onRs.50000,itwouldbeRs.12000.

Q9 to 13 :

Q9.a

Letthetotalnumberofbadwidgetsbexandhencethetotalnumberofgoodoneswillbe(1000–x).

IfhetakestestIhistotalcostwillbe:Rs.2(1000)+25X0.8x+50X0.2x

IfhetakestestIIhistotalcostwillbe:Rs.3(1000)+25Xx

Now,itwillbeworthtestingifthecostoftestingislessthanthecostofpenaltyleviedonthedefectivepieces.

Letusnowtestofallthevaluesmentionedinallthequestions&answerchoices.

No. of defectives	Cost of Test I	Cost of Test II	Penalty if not tested
100	Rs.5000	Rs.5500	Rs.5000
120	Rs.5600	Rs.6000	Rs.6000
160	Rs.6800	Rs.7000	Rs.8000
190	Rs.7700	Rs.7750	Rs.9500
200	Rs.8000	Rs.8000	Rs.10000
400	Rs.14000	Rs.13000	Rs.20000

It isobvious that fornumberofdefectivesabove100costofany testing ischeaper than thepenalty.

Butfor 100defectivesthecostofpenaltyisthesameasthatfortesting.Hencebelow100defectives,thepenaltywillbelessthanthecostoftesting andhenceitisnotworthtesting.

Q10.d Ifthereare120widgets,heshouldgofortestIasitischeaper.

Q11.cItisclearfromthetablethatifthenumberofdefectivesisbetween200&400,heshouldgoforTestIIasitischeaper.

Q12.a Incaseof160defectivesheshouldusetestIasitischeaper.

Q13 .a If thereare200defectivewidgets in thelot,PrakashmayuseeitherTestIorTest IIas thecostofboth theTestsissame=Rs.8000.

SOLUTION FOR Q14 TO Q17 :

LettheprofitsofCAT&DATbex,SalesofCAT&BAT=yandsalesofANT=z.Sowehave

COMPANY	SALES	EXPENDITURE	PROFIT
ANT	z	0.9z	0.1z
BAT	y	0.8y	0.2y
CAT	y	5x	x
DAT	3x		x

No, it is said that the totalexpensesofCATwereRs.10 lakhs.Hence5x=Rs.10 lakhsorx=Rs.2 lakhs.AlsoTotal expensesofANTwere10% less than thoseofCAT=Rs.9 lakhs.Hence0.9z=9 lakhsor z=10 lakhs.

Finally,IncaseofCAT,since, Sales-Expenditure=Profit,Sales=Expenditure+Profit=6x=12lakhs.Hence, y=12lakhs.Soourtableismodifiedto:

COMPANY	SALES	EXPENDITURE	PROFIT
ANT	10	9	1
BAT	12	9.6	2.4
CAT	12	10	2
DAT	6	4	2

(All values in lakh Rupees)

Q14d

FromtheabovetableitcanbeseenthatthecompanythathadthelowestsalesisDATviz.Rs.6lakhs.

Q15.c CAThadhighesttotalexpensesi.e.Rs.10lakhs.

Q16.a ANThadlowestprofitsi.e.Rs.1lakh.

Q17.b BAThadthehighestprofitsi.e.Rs.2.4lakhs.

SOLUTIONS FOR Q18 TO 21: The data given in the question can be computed as :

Q18. b From the first week data we can arrive at the following work pattern of Bankatlal for the 1st month.

First Month :

	1st week	2nd week	3rd week	4th week
Hours of rest	2	5	2	5
Working hrs.	5	2	5	2
Wage per hour	Rs.20	Rs.10	Rs.20	Rs.10
Total Wage per day	Rs.100	Rs.20	Rs.100	Rs.20
Total Wage per week	Rs.600	Rs.120	Rs.600	Rs.120

Thus his total wage = (600+120+600+120) = Rs.1440

Q19. c Let us compile the data for 2nd, 3rd and 4th month.

Second Month :

	5th week	6th week	7th week	8th week
Hours of rest	3	7	3	5
Working hrs.	7	3	7	2
Wage per hour	Rs.20	Rs.10	Rs.20	Rs.10
Total Wage per day	Rs.140	Rs.30	Rs.140	Rs.30
Total Wage per week	Rs.840	Rs.180	Rs.840	Rs.180

Third Month :

	9th week	10th week	11th week	12th week
Hours of rest	4	6	4	6
Working hrs.	6	4	6	4
Wage per hour	Rs.20	Rs.10	Rs.20	Rs.10
Total Wage per day	Rs.120	Rs.40	Rs.120	Rs.40
Total Wage per week	Rs.720	Rs.240	Rs.720	Rs.240

Fourth Month :

	13th week	14th week	15th week	16th week
Hours of rest	0	8	0	8
Working hrs.	8	0	8	0
Wage per hour	Rs.20	Rs.10	Rs.20	Rs.10
Total Wage per day	Rs.160	0	Rs.160	0
Total Wage per week	Rs.960	0	Rs.960	0

Total wage for 1st month = Rs.1440
Total wage for 2nd month = (840+180+840+180) = Rs.2040
Total wage for 3rd month = (720+240+720+240) = Rs.1920
Total wage for 4th month = (960+960) = Rs.1920
Total wage for the 4 months = (1440+2040+1920+1920) = 7320
Hence the average salary = 7320/4 = Rs.1830

Q20. d Using the above data, we can revise the wage compilation for the third month as given below:

Third Month :

	9th week	10th week	11th week	12th week
Hours of rest	4	6	4	6
Working hrs.	6	4	6	4
Wage per hour or work	Rs.25	Rs.12.5	Rs.25	Rs.12.5
Fine per hour of rest	Rs.5	Rs.5	Rs.5	Rs.5
Total wage per day	Rs.150	Rs.50	Rs.150	Rs.50
Total fine per day	Rs.20	Rs.30	Rs.20	Rs.30
Effective wage per day	Rs.130	Rs.20	Rs.130	Rs.20
Total Wage per week	Rs.780	Rs.120	Rs.780	Rs.120

So now his third month age = (780+120+780+120) = Rs.1800.
Previously he used to earn Rs.1920 in the third month.
Hence change in Bankatlal's salary for the 3rd month = (1920 – 1800) = Rs.120.

Q21 . D. For the fourth month, the new wage compilation will be as given below :

Fourth Month :

	9th week	10th week	11th week	12th week
Hours of rest	0	8	0	8
Working hrs.	8	0	8	0
Wage per hour or work	Rs.25	Rs.12.5	Rs.25	Rs.12.5
Fine per hour of rest	Rs.5	Rs.5	Rs.5	Rs.5
Total wage per day	Rs.400	0	Rs.400	0
Total fine per day	0	Rs.40	0	Rs.40
Effective wage per day	Rs.400	-Rs.40	Rs.400	-Rs.40
Total Wage per week	Rs.2400	-Rs.240	Rs.2400	-Rs.240

So now his total wage for the 4th month = (2400+2400-240-240) = Rs.4320.
Since the calculations for the first two months are made as per the old scheme of things, this has already been computed.
Total wage for 1st month = Rs.1440
Total wage for 2ndmonth = Rs.2040
Calculation for the third and fourth month are as per new calculations and they are :
Total wage for 3rd month = Rs.1800
Total wage for 4th month = Rs.4320
So total salary for the four months = (1440+2040+1800+4320) = Rs.9600.

SOLUTION FOR Q22 TO Q26 :

Q22. b
It is said that Gopal and Ram invested equal amounts initially. Let the amount paid by both of them to Krishna be 2x and 3x respectively. Gopal further invested Rs. 2 lakh. Hence, we can say (2x + 2) = 3x or x = 2 lakh. Hence, the initial amounts paid by Gopal and Ram to Krishna is 4 lakh and 6 lakh. So Gopal and Ram together put in (6 + 6) = 12 lakh initially (note that this includes Rs. 2 lakh put in by Gopal later). The total revenue generated is 25% of 12 lakh = 3 lakh. The revenue from coconut and lemon trees are in the ratio 3 : 2. Hence, 3 lakh when divided in the ratio3 : 2 gives Rs. 1,80,000 from coconut and Rs. 1,20,000 from lemons. And since each coconut costs Rs. 5, the total output of coconut would be = 180000/5 = 36000

Q23. a Lemon and coconut trees were planted on equal areas of land, viz. 5 acres each. The value of lemon output per acre of land = 120000/5 = 0.25 L

Q24. a
The total revenue of Rs. 3,00,000 was divided equallyby Gopal and Ram. Hence, the amount received by Gopal in 1997 = ½ x 300000 = 1.5 lacs

Q25. b
The ratio of the number of trees of coconut and lemonwas 5 : 1. Since the number of lemon trees is 100, the number of coconut trees is 500. So they totally obtained a revenue of Rs. 1,80,000 from 500 coconut trees. Value of trees = 180000/500 = 360

Q26. d
We have not been given the cost of one lemon. In thelight of this fact, we cannot find the number of lemons produced and hence the required ratio cannot be determined.

SOLUTIONS FOR Q 27 TO 29 :

Q27.
AVOCADO paint would cost minimum when its constituents have the minimum possible price. AVOCADO is made by mixing equal 'ORANGE' and 'PINK'.
∴ We have the following possibilities:

Colour	Possible Combinations	Total cost (in. Rs.)	Litres	Cost/ Litres (in. Rs.)
AVOCADO	ORANGE + PINK	$22 + 18 = 40$	2	20
	(RED + YELLOW) + PINK	$\left(\frac{20+25}{2}\right) +18 = 40.5$	2	20.25
	ORANGE + (RED + WHITE)	$22 + \left(\frac{20+15}{2}\right) = 39.5$	2	19.75
	(RED + YELLOW) + (RED + WHITE)	$\left(\frac{20+25}{2}\right) + \left(\frac{20+15}{2}\right) = 40$	2	20

From the table we have the minimum cost as Rs. 19.75 per litre.

Hence, option 2.

Q28.

The possible combinations for WASHEDORANGE are given below:

Combination	Ratio
ORANGE + WHITE	1:1
(RED + YELLOW) + WHITE	1:1:2

Hence, option 4

Q29.

From the solution to the first question of the set we know that the least possible price for AVOCADO is Rs. 19.75. The least possible price for CREAM is when WHITE and YELLOW is mixed in the ratio 7 : 3. = 7 x 15 + 3 x 25 = 180 /10 = 18

The least possible price for WASHEDORANGE is when ORANGE and WHITE is mixed in the ratio 1 :1 . = (15 + 22)/2 = 18.5

∴ Profitability is the maximum for CREAM.

Hence, option 2.

SOLUTION FOR Q 30 and 31 :

Q30. Price of 1st bottle = 520 Bahts

Price of 2nd and 3rd bottles each = (520 × 0.7) = 364 Bahts

∴ Total cost of all three bottles = 1248 Bahts

Cost per person = 416 Bahts

R pays 2 Euros = 2 × 46 = 92 Bahts

M pays 4 Euros and 27 Bahts = 4 × 46 + 27 = 211 Bahts

S pays the remaining amount = 1248 − (92 + 211) = 945 Bahts

∴ R owes 416 − 92 = 324 Bahts to S.

Hence, option 4.

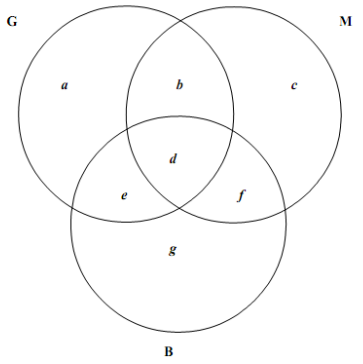
Q31. From the solution to the previous question,

M owes = 416 − 211 = 205 Bahts to S But, 205 Bahts = 205/41 = 5 US Dollars

Hence, option 3.

SOLUTION FOR Q 32 and 33:

Q32.



Let a be the number of projects in which only Gyani is involved, g be the number of projects in which only Buddhi is involved and c be the number of projects in which only Medha is involved.

From the data, d = 6

b + d = 14

∴ b = 8

Also, e = 3 and f = 2

It is given that

a + g = b + c + d + f

∴ a − c + g = 16 … (i)

Number of projects involving more than 1 consultant = 6 + 8 + 2 + 3 = 19

∴ Total number of projects = 2 × 19 − 1 = 37

a + b + c + d + e + f + g = 2 × (b + d + e + f) − 1

∴ a + c + g = 19 − 1 = 18 … (ii)

Solving (i) and (ii), we get,

c = 1 and a + g = 17

∴ a cannot be determined uniquely.

Hence, option 4.

Q33. From the solution to the previous question, we get,

c = 1

∴ Number of projects in which Medha alone is involved = 1

Hence, option 2.

Solutions for questions 34 to 37:

For solving these questions make a table like this:

	Africa	America	Australasia	Europe	
L	0	1	1	1	3
H			1	1	6
P			2	1	6
R			1	1	6
	4	8	5	4	
					21

(i) As the labour expert is half of each of the other, so the only possible combination is

L – 3

H

P

R] 6 each

(ii) Statement (d): If the number of Australasia expert is 1 less, i.e. total export are 20 American be twice as each of other. The only combined possible is Americas 8.

Australasia 4 + 1 = 5

Europe 4

Africa 4

Now, we need to workout the various options possible in the blank cells.

	Africa	America	Australasia	Europe	
L	0	1	1	1	3
H	2	2	1	1	6
P	1	2	2	1	6
R	1	3	1	1	6
	4	8	5	4	
					21

	Africa	America	Australasia	Europe	
L	0	1	1	1	3
H	1	3	1	1	6
P	1	2	2	1	6
R	2	2	1	1	6
	4	8	5	4	
					21

	Africa	America	Australasia	Europe	
L	0	1	1	1	3
H	1	3	1	1	6
P	2	1	2	1	6
R	1	3	1	1	6
	4	8	5	4	
					21

Q34. 4 Q**35** 3 **Q 36** 3 **Q37**. 4

SOLUTION FOR Q 38 TO 42 :

Q38.

Let F and E have Erdös numbers f and e respectively at the beginning of the
conference.
On the third day, A's and C's Erdös numbers become (f + 1)
The sum of Erdös numbers changed to 8 × 3 = 24
At the end of the third day, five members had identical Erdös numbers while the
other three had distinct ones.
On the fifth day, E's Erdös numbers became f + 1 and this reduced the group's
average by 0.5. This means that E's Erdös numbers was not f + 1 on the third day.
Thus we have,
At the end of the third day, 5(f + 1) + f + e + y = 24
Hence 6f + 5 + e + y = 24
Hence 6f + e + y = 19
At the end of the fifth day,
6(f + 1) + f + y = 2.5 × 8 = 20
Hence 7f + y = 14
As F has the smallest Erdös number, f = 1
∴ y = 7
∴ e = 6

Now, we can solve all the questions.

From the above explanation, the largest Erdös number at the end of the
conference would be 7.
Hence, option 2.

Q39. As per the explanation given in the first question, the Erdös numbers of B, D, G, H
and F did not change during the conference.
Hence, option 4.

Q40. As follows from the explanation given in the first question, C's Erdös number was
f + 1 = 2 on the third day and thereafter.
Hence, option 2.

Q41. It can be inferred from the common explanation that E's Erdös number was 6.
Hence, option 3.

Q42. Since 5 participants had identical Erdös numbers at the end of day three and two
of these were A and C whose Erdös numbers had changed on the same day, three
had the same Erdös numbers at the beginning of the conference.
Hence, option 2.