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Puzzle test for SBI PO Mains and IBPS PO Mains Exams.

PT Set No 162

Directions: Study the following information carefully and answer the questions given beside.

Seven male professors- P, Q, R, S, T, U and X of a college published assignments for PHD work with the help of their wives A, B, C, D, E, F and H but not necessarily in the same order. All the couples live in a seven storey apartment. First floor is numbered one and second floor is numbered two and so on.

Total number of journals published by all the professors is two hundred and seven. Husband of C published an even number of projects. Only one person lives between Husband of C and the person who published seventy nine assignments (project + journal). R lives immediately above the person who published seventy nine assignments (project + journal). Two persons live between R and husband of F. Husband of E published an odd number of journals. T published twenty four journals and doesn't live on either top or lowest floor. Husband of A published forty seven projects, but doesn't live on one of the floors below R. X is the husband of H who lives on the lowermost floor. P published sixteen journals. Total number of assignments (project + journal) published by Q is multiple of 9, but he is not the husband of C. The journal published by the person who lives on third floor is six more than that of by the person who lives on fifth floor. E published 10 projects more than R's journal. Total assignments published by P is not sixty three. Total assignments (project + journal) published by U is sixty seven. Total assignments (project + journal) published by husband of D is two more than the total assignments (project + journal) published by S. Total assignments published by Husband of B is forty five, but number of projects published is greater than number of journals published. Two persons live between R and husband of F.

Husband of F published 10 journals more than the husband of E. Husband of C doesn't live immediately below the person who published forty seven projects. Total number of projects published by all the professors is two hundred and sixty six.

Conditions:

- I. If the professor lives on an odd numbered floor, then he published even numbers of Journals and odd numbers of projects.
- II. If the professor lives on an even numbered floor, then he published odd number of Journals and even number of Projects
- III. Number of Journals and Projects together is known as Assignment.

1. How many assignments were published by Professor Q?

A. 72	B. 63	C. 81	D. 99	E. 90

2. How many couples live between the person who published ninety nine assignments and the person who lives on the second floor of the building?

A. None B. One C. Two D. Three E. Four

3. Four of the following five are alike in a certain way and hence form a group. Which of the following does not belong to the group?

A. BP B. FQ C. CU D. RA E. DS

4. How many projects were published by the person who lives on the floor number 5?

A. 49 B. 57 C. 55 D. 51 E. 471

5. Which of the following combinations is true? [Person - No. of Journal - No. of Projects]

A. T - 24 - 59 B. U - 37 - 28 C. Q - 49 - 51 D. R - 30 - 49 E. P - 16 - 29

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Correct Answers:

	Th		LIAC	tion	Rank
1	2	3	4	5	Dain
D	D	Е	В	Е	

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Common explanation:

All the couples live on seven storey apartment. First floor is numbered one and second floor is numbered two and so on.

If the professor lives on an odd numbered floor, then he published even numbers of Journals and odd numbers of Projects.

If the professor lives on an even numbered floor, then he published odd number of Journals and even number of Projects

After referring last two conditions we get common information regarding journals and projects which

occupied in the apartment.

Table – 1				
Floor	Journals – No	Projects – No		
7	Even	Odd		
6	Odd	Even		
5	Even	Odd		
4	Odd	Even		
3	Even	Odd		
2	Odd	Even		
1	Even	Odd		

References

X is the husband of H who lives on the lowermost floor.

Total assignments published by Husband of H is twenty five and it is a sum of consecutive numbers.

Total number of journals published by all the professors is two hundred and seven.

Total number of projects published by all the professors is two hundred and sixty six.

Inference

Total Assignments [Journal + Projects] by XH couple = 25

Given, Sum of two consecutive numbers = 25

Only possible is, 12 + 13 = 25 (two consecutive numbers)

XH (couple) lives in 1^{st} floor, then according to Table -1

No. of Journals = 12 (even) &

No. of Projects = 13(odd)

Total Journals (all 7 professors) = 207

Total Projects (all 7 professors) = 266

Thus we get

Case:1

El	Couple				
Floor		Female	Journal	Projects	lotai
7			Even	Odd	
6			Odd	Even	
5			Even	Odd	
4			Odd	Even	
3			Even	Odd	
2			Odd	Even	
1	Χ	Н	Even – 12	Odd – 13	25
Total in Numbers		umbers	207	266	

Husband of C published an even number of projects.

Husband of E published an odd number of journals.

Husband of F published 10 journals more than the husband of E.

Only one person lives between Husband of C and the person who published seventy nine assignments (project + journal).

R lives immediately above the person who published seventy nine assignments (project + journal).

Two persons live between R and husband of F.

<u>Inferences</u>

Sr.No	References/Possibility
1.	Husband of C published an even number of projects. i.e. C [Husband] = No. of Projects (even no), according to table -1 , She must live in even numbered floor($2^{nd}/4^{th}/6^{th}$)
2.	Husband of E published an odd number of journals. i.e. E [Husband] = No of Journals(odd number), according to table -1 , She must live in even numbered floor($2^{nd}/4^{th}/6^{th}$)
3.	Husband of F published 10 journals more than the husband of E. i.e. F [Husband's No of Journal] = 10 + E [Husband's No of Journal] we know, E [Husband's No of Journal] = Odd number, Then Odd number + 10 = Odd Number F [Husband's No of Journal] = 10 + odd number = odd

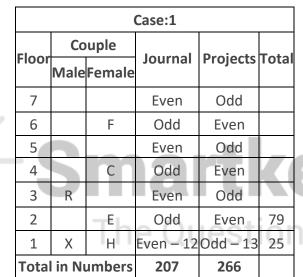
humbarad floor/2nd/4th/6th)	
numbered floor(2 nd /4 th /6 th)	

Two person living between R and F & One person Living between C and Total Assignment = 79

R lives immediately above 79.

Clearly C, E and F [and their Husbands] live in even numbered floors (2nd/4th/6th) irrespectively.

Based on the inference and references, we get two cases as follows,



	Case:2				
Flagr	Couple				
Floor	Male	Female	Journal Projects	Projects	rotai
7			Even	Odd	
6		C	Odd	Even	
5	R		Even	Odd	
4		Ε	Odd	Even	79
3			Even	Odd	
2		F	Odd	Even	
1	Χ	Ξ	Even – 12	Odd – 13	25
Total in Numbers		umbers	207	266	

References

T published twenty four journals and doesn't live on either top or lowest floor. P published sixteen journals.

Inferences

T = 24 journals (even number) not living in 1st or 7th floor.

according to table -1, He must live in odd numbered floor(only 5^{th} floor left in case (1) & 3^{rd} floor left in Case (2)

P = 16 journals (even number)

according to table -1, He must live in odd numbered floor (only 7^{th} floor left in both cases)

Thus, we get the table as,

	Case:1				
Поси	Couple				
Floor		Female	Journal	Projects	Total
7	Р		Even – 16	Odd	
6		F	Odd	Even	
5	Т		Even – 24	Odd	
4		С	Odd	Even	
3	R		Even	Odd	
2		E	Odd	Even	79
1	X	Ŧ	Even – 12	Odd – 13	25
Tota	l in Nu	umbers	207	266	

Case:2					
- 1	Couple		al	Duningto	Tatal
Floor	Male	Female	Journal	Projects	iotai
7	Р		Even – 16	Odd	
6		C	Odd	Even	
5	R		Even	Odd	
4		Е	Odd	Even	79
3	Т		Even – 24	Odd	
2		F	Odd	Even	
1	Χ	Н	Even – 12	Odd – 13	25
Total in Numbers		207	266		

References

Husband of A published forty seven projects, but doesn't live on one of the floors below R. Total assignments published by P is not sixty three.

Husband of C doesn't live immediately below the person who published forty seven projects.

Inferences

SI. No	References/Possibility
--------	------------------------

Husband of A published forty seven projects, but doesn't live one of floor below R.
 I.e. A [Husband] = No. of Projects = 47 (odd number) does not live below R. according to table – 1, A & Husband must live odd numbered floor (7th/5th/3rd)
 Total assignment published by P is not sixty three.
 Husband of C doesn't live immediately below the person who published forty seven projects.

Let us check possibility of each cases to locate A.

For Case: 1				
	Then P is Husband (7 th floor)			
	P = Journal = 16			
If A = 7 th floor	P = projects = 47			
	Total = 63 (which is not possible)			
	[Refer sl.no 2]			
	Then T is Husband (5 th floor)			
If A = 5 th floor	But C living in 4 th floor			
II A = 3 11001	(which is not possible)			
	[Refer sl.no 2]			
	Then R is Husband			
Then A = 3 rd floor	So A lives with R			
	[Which is possible]			

For Case: 2	
	Then P is Husband (7 th floor)
	P = Journal = 16
If A = 7 th floor	P = projects = 47
	Total = 63 (which is not possible)
	[Refer sl.no 2]
Thon A-	Then R is Husband (5 th floor)
Then, A = 5 th floor	So A lives with R
	[Which is possible]
If A = 3 rd floor	R lives in 5 th floor. Below R, A can't live. [which is not possible]
	[Refer sl.no 1]

So, Clearly A is wife of R in both cases. They live in 3rd floor (case 1) and 5th floor (case 2)

Then we get the table as,

	(Case:1		
Floor	uple	lournal	Projects	Total
	Female	Journal	Trojects	Total

7	Р		Even – 16	Odd	
6		F	Odd	Even	
5	Т		Even – 24	Odd	
4		С	Odd	Even	
3	R	А	Even	Odd – 47	
2		Е	Odd	Even	79
1	Χ	Н	Even – 12	Odd – 13	25
Total in Numbers		207	266		

Case:2					
Поон	Co	uple	Januara	Duaisata	Total
Floor		Female	Journal	Projects	rotai
7	Р		Even – 16	Odd	
6		С	Odd	Even	
5	R	Α	Even	Odd – 47	
4		Е	Odd	Even	79
3	1		Even – 24	Odd	
2		F	Odd	Even	
1	X	Н	Even – 12	Odd – 13	25
Tota	l in N	umbers	207	266	

Total assignment published by Husband of B is forty five, but number of projects published is greater than number of journals published.

<u>Inferences</u>

Total Assignment (Journal + Pr	ojects) by [B & Husband] = 45,
Given, No. of Proje	cts> No. of Journals
For Case: 1	For Case: 2
(Possible 5 th or 7 th floor)	(3 rd or 7 th floor)

If B lives in 5 th floor,	If B lives in 3 rd floor,
Then T is Husband	Then T is Husband
(BT couple) Total Journal = 24	(BT couple) Total Journal = 24
(BT couple) (Journal + Projects) = 45	(BT couple)(Journal + Projects) = 45
(BT couple) Total projects =	(BT couple) Total projects =
45 – 24 = 21	45 – 24 = 21
But, No. of Projects > No. of Journals	But, No. of Projects > No. of Journals
Which is not satisfied	Which is not satisfied
If B lives in 7 th floor,	If B lives in 7 th floor,
Then P is Husband	Then P is Husband
(BP Couple) Total Journal = 16	(BP Couple) Total Journal = 16
(BP couple) (Journal + Projects) = 45	(BP couple) (Journal + Projects) = 45
(BP couple) Total projects =	(BP couple) Total projects =
45 – 16 = 29	45 – 16 = 29
(BP couple) Total projects = 29	(BP couple) Total projects = 29
INO OT Projects > NO OT Journals	No. of Projects > No. of Journals [29 > 16]
Which is satisfied	Which is satisfied

So, Clearly in both cases, B is the wife of P lives in 7th floor Total assignment = 45, Total Journal = 16 and Total projects = 29

Thus we get the table as,

Case:1					
E1	Couple				
Floor	Male	Female	Journal	Projects	Total
7	Р	В	Even - 16	Odd - 29	45

6		F	Odd	Even	
5	Т		Even - 24	Odd	
4		С	Odd	Even	
3	R	Α	Even	Odd - 47	
2		Е	Odd	Even	79
1	Χ	Н	Even - 12	Odd - 13	25
Total	in Nu	umbers	207	266	

Case:2					
Пос	Couple			Dua!aata	Takal
Floor	Male	Female	Journal	Projects	lotai
7	Р	В	Even - 16	Odd - 29	45
6		С	Odd	Even	
5	R	Α	Even	Odd - 47	
4		Е	Odd	Even	79
3	Т		Even - 24	Odd	
2	1	F	Odd	Even	5
1	X	Н	Even - 12	Odd - 13	25
Total in Numbers			207	266	



Total number of assignments published by Q is multiple of 9, but he is not the husband of C. Total assignments (project + journal) published by U is sixty seven.

<u>Inferences</u>

SI.No References/Possibility

Total number of assignments published by Q is multiple of 9, but he is not the husband of C.

i. Q is not husband C. So he didn't live in 4th floor in Case (1) and 6th floor in

Case (2).

ii. Q and Wife Total assignment is multiple of 9. So he didn't live in 2nd floor (case 1) and 4th floor in Case (2) [Note: Both of these floors Total is 79, which is not multiple of 9].

iii. So Q lives in 6th floor (case 1) and Q lives in 2nd floor (case 2).

Clearly, Q is husband of F in both cases

Total assignment (project + journal) published by U is sixty seven.

Total assignment (project + journal) by U and wife = 67

Note: U can't live in 2nd floor (case 1) and 4th floor (case 2), since Total assignment 79 is occupied.

So only possible is, U lives in 4th floor (case 1) and 6th floor (case 2).

Clearly, U is husband of C in both cases

Now, if you see the cases, two slots are left in Male and Female column.

For Case: 1

For Case: 2

D (female) lives in 5th floor D (female) lives in 3rd floor whose Husband is Twhose Husband is T

S(male) lives in 2nd floor S(male) lives in 4th floor whose wife is E

Clearly, T is Husband of D and S is Husband of E in both cases

Now, we get the table with all the couple living in apartments, as

Case:1					
-1		uple			
Floor	Male	Female	Journal	Projects	Total
7	Р	В	Even - 16	Odd - 29	45
6	Q	F	Odd	Even	

5	Т	D	Even - 24	Odd	
4	\supset	С	Odd	Even	67
3	R	Α	Even	Odd - 47	
2	S	Е	Odd	Even	79
1	Χ	Н	Even - 12	Odd - 13	25
Total in Numbers		207	266		

Case:2					
Floor	Couple			Droinata	
Floor		Female	Journal	Projects	TOtal
7	Р	В	Even - 16	Odd - 29	45
6	U	С	Odd	Even	67
5	R	Α	Even	Odd - 47	
4	S	Е	Odd	Even	79
3	Т	D	Even- 24	Odd	
2	Q	F	Odd	Even	
1	Χ	Н	Even - 12	Odd - 13	25
Total	l in Nu	umbers	207	266	

Total assignments (project + journal) published by husband of D is two more than the total assignments (project + journal) published by S.

The journal published by the person who lives on third floor is six more than that of by the person who lives on fifth floor.

E published 10 projects more than R's journal.

Husband of F published 10 journals more than the husband of E.

Inferences

SI.No	References / Possibility – Calculation
Note:	In both the cases only floor is different for some couple, but their numbers distribution are
So we	can calculate the values as common.

Total assignment (project + journal) published by husband of D is two more than the total assignment (project + journal) published by S.

i.e. Total assignment (project + journal) by [TD couple] = 2 + Total assignment (project + journal) by [SE couple]

From above cases,

[SE Couple] Total Assignment = 79, then Total assignment (project + journal) by [TD couple] = 2 + 79 = 81

We know, TD couple Total Journal = 24, Then Total project = 81 – 24 = 57 Clearly, (Both cases)

Couple	Journal	Projects	Total
TD	24	57	81
SE	_	_	79

The journal published by the person who lives on third floor is six more than that of by the person who lives on fifth floor.

ne ()Hestior

G<mark>iven, No. of</mark> Journal(3rd floor) – No of Journal (5th floor) = 6 No. <mark>of Journ</mark>al(3rd floor) = 6 + No of Journal (5th floor)

For case: 1

TD couple(5th floor), Total Journal = 24

Then, 3^{rd} floor (RA couple's Journal) = 24 + 6 = 30

Clearly,

RA couple Journal = 30

RA couple Projects = 47

A couple Assignment = 30 + 47 = 77

For case: 2

TD couple(3rd floor), Total Journal = 24

Then, 5^{th} floor (RA couple's Journal) = 24 - 6 = 18

Clearly,

RA couple Journal = 18

RA couple Projects = 47

RA couple Assignment = 18 + 47 = 65

E published 10 projects more than R's journal.
 Given, [SE couple's Total projects] = 10 + [RA couple's Journal]

2

For case: 1 [RA couple's Journal] = 30 [SE couple's Total projects] = 10 + 30 = 40 [SE Couple] Total Assignment = 79 [SE couple's Total Journal] = 79 - 40 = 39 For case: 2 [RA couple's Journal] = 18 [SE couple's Total projects] = 10 + 18 = 28 [SE Couple] Total Assignment = 79 [SE couple's Total Journal] = 79 – 28 = 51 Husband of F published 10 journals more than the husband of E. Given, [QF Couple] Total Journal = 10 + [SE couple] Total Journal For case: 1 [SE couple] Total Journal = 39 [QF Couple] Total Journal = 10 + 39 [QF Couple] Total Journal = 49 For case: 2 [SE couple] Total Journal = 51 [QF Couple] Total Journal = 10 + 51 [QF Couple] Total Journal = 61

By filling all Numbers from above table we get cases as,

Case:1					
- 1	Couple				
Floor	Male	Female	Journal	Projects	rotai
7	Р	В	Even - 16	Odd - 29	45
6	Q	F	Odd - 49	Even	
5	Т	D	Even - 24	Odd - 57	81
4	U	С	Odd	Even	67
3	R	Α	Even - 30	Odd - 47	77

2	S	Е	Odd - 39	Even - 40	79
1	Χ	Н	Even - 12	Odd - 13	25
Total in Numbers		207	266		

Case:2					
Floor	Couple				
	Male	Female	Journal	Projects	ıotal
7	Р	В	Even - 16	Odd - 29	45
6	U	С	Odd	Even	67
5	R	Α	Even - 18	Odd - 47	65
4	S	Е	Odd - 51	Even - 28	79
3	Т	D	Even - 24	Odd - 57	81
2	Q	F	Odd - 61	Even	
1	Χ	Н	Even - 12	Odd - 13	25
Total in Numbers		207	266		

Total number of assignments published by Q is multiple of 9.

Inferences

Case (1): To find [UC Couple] Journal:

Total No of Journal (7 Professors) = 207

Then, 16 + 49 + 24 + [UC couple's Journal] + 30 + 39 + 12 = 207

[UC couple – Journal] = 207 – (170) = 37

[UC couple's Total Journal] = 37

We know, [UC couple – Total Assignment] = 67

[UC couple – Total projects] = 67 - 37 = 30

[UC couple's Total projects] = 30

Case (2): To find [UC Couple] Journal:

Total No of Journal (7 Professors) = 207

Then, 16 + 18 + 51 + [UC couple's Journal] + 24 + 61 + 12 = 207

[UC couple - Journal] = 207 - (182) = 25

[UC couple's Total Journal] = 25

We know, [UC couple – Total Assignment] = 67

[UC couple – Total projects] = 67 - 25 = 42

[UC couple's Total projects] = 42

Case (1): To find [QF Couple] Projects:

Total No of Projects(7 Professors) = 266

Then, 29 + [QF Couple's Project] + 57 + 30 + 47 + 40 + 13 = 266

[QF Couple's Project] = 266 - (216) = 50

[QF Couple's Total Project] = 50

[QF Couple's Total Journal] = 49

[QF Couple's Total Assignment] = 50 + 49 = 99 (Multiple of 9)

(All conditions satisfied)

Case (2): To find [QF Couple] Projects:

Total No of Projects(7 Professors) = 266

Then, 29 + 42 + 47 + 28 + 57 + [QF Couple's Project] + 13 = 266

[QF Couple's Project] = 266 – (216) = 50

[QF Couple's Total Project] = 50

[QF Couple's Total Journal] = 61

[QF Couple's Total Assignment] = 50 + 61 = 111 (Not Multiple of 9)

(All conditions not satisfied)

Case:1					
Floor	Couple				Total
	Male	Female	Journal Projects		
7	Р	В	Even - 16	Odd - 29	45
6	Q	F	Odd - 49	Even - 50	99
5	Т	D	Even - 24	Odd - 57	81
4	U	C	Odd - 37	Even - 30	67

3	R	А	Even - 30	Odd - 47	77
2	S	Е	Odd - 39	Even - 40	79
1	Χ	Н	Even - 12	Odd - 13	25
Total in Numbers		207	266		

	Case:2[Eliminated] QF total multiple of 9					
-1	Couple					
Floor	Floor Male Female Journal	Projects	Total			
7	Р	В	Even - 16	Odd - 29	45	
6	U	С	Odd - 25	Even - 42	67	
5	R	Α	Even - 18	Odd - 47	65	
4	S	Е	Odd - 51	Even - 28	79	
3	Т	D	Even - 24	Odd - 57	81	
2	Q	F	Odd - 61	Even - 50	111	
1	Χ	Н	Even - 12	Odd - 13	25	
Total in Numbers		207	266			



The Question Bank

Thus we get the final Table as,

Case:1					
El	Couple				
Floor		Female	Journai	Projects	rotai
7	Р	В	16	29	45
6	Q	F	49	50	99
5	Т	D	24	57	81
4	U	С	37	30	67
3	R	Α	30	47	77
2	S	E	39	40	79
1	Χ	Η	12	13	25
Total	Total in Numbers			266	473

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Explanations:

1. The following common explanation, we get "Total Assignments QF couple = 49 + 50 = 99 Assignments".

Hence, option D is correct.

2. The following common explanation, we get "Total Assignments 99 by couple QF lives in 6th floor and 2nd floor. So 3 couples".

Hence, option D is correct.

3. The following common explanation, we get "D & S are not husband and wife".

Remaining options consist of Husband and Wife.

Hence, option E is correct.

4. The following common explanation, we get "TD couple, 57 projects & 24 Journal".

Hence, option B is correct..

5. The following common explanation, we get "P - 16 - 29".

Hence, option E is correct.

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