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PT Set No 165

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

A premier public sector bank released notification for Scale - I officers for the states like Assam, Bihar, Gujarat, Haryana and Kerala. Number of vacancies for each category like SC, ST, OBC and General in all states are different. Numbers of vacancies in all categories of all the states are ranges from prime numbers (10 to 100, excluding 11).

- Total number of vacancies in Bihar, Gujarat and Haryana are 218, 242 and 182 respectively.
- Sum of number of vacancies of ST category of Assam and Bihar together is 30 in which Assam has less vacancies.
- General category of Gujarat has maximum number of vacancies.
- Difference between the number of vacancies for SC and ST category of Gujarat state respectively is 8.
- Total number of vacancies of state Assam is 2 more than the total number of vacancies of Kerala.
- Gujarat has 6 more vacancies for ST category than that of Kerala.
- OBC category of Haryana state has 2 vacancies less than the General category of Haryana.
- General category of Bihar has 10 more vacancies than Haryana in the same category, but the vacancies range from more than 50 to less than 80.
- Total number of vacancies for SC and ST category together in all states is 300.
- Sum of vacancies for SC and ST category of Assam state together is 54.
- Total number of vacancies of OBC category in all 5 states together is 38 less than total number of vacancies of general category in all 5 states.
- General category of Assam has 22 more vacancies than Kerala in the same category.
- OBC category of Bihar has 12 more vacancies than the General category of Bihar.
- Difference between the total number of vacancies of SC and ST category in all 5 states is half of the total number of vacancies of Assam.
- Difference between number of vacancies of ST category of Gujarat and Haryana is 10, but neither of the states has more than 30 vacancies in same category.
- Total number of vacancies of SC category is more than that of ST category.

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1. What is the total number of vacancies of OBC category in Kerala state?

A. 53 B. 41 C. 73 D. 47 E. Can't be determined

2. What is the sum of total number of vacancies of SC and General category of Haryana state?

A. 114 B. 90 C. 110 D. 104 E. Can't be determined

3. Which among the following states and the categories has 79 vacancies?

A. Gujarat, OBC B. Haryana, General C. Assam, OBC D. Bihar, SC E. None of these

4. 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. 31 B. 23 C. 37 D. 73 E. 67

5. Which of the following combinations is true?

A. Assam - OBC - 83 B. Haryana - ST - 29 C. Bihar - General - 61 D. Kerala - SC - 23 E. None of these

Correct Answers:

1	2	3	4	5
C	D	A	C	E

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Common explanation :



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References

Number of vacancies in all categories of all the states range from prime numbers (10 to 100, excluding 11).

Total number of vacancies in Bihar, Gujarat and Haryana are 218, 242 and 182 respectively.

Total number of vacancies of state Assam is 2 more than the total number of vacancies of state Kerala.

Total number of vacancies of SC and ST category together in all states is 300.

Total number of vacancies of OBC category in all 5 states together is 38 less than total number of vacancies of general category in all 5 states.

Difference between the total number of vacancies of SC and ST category in all 5 states is half of the total number of vacancies of Assam.

Total number of vacancies of SC category is more than ST category.

Inferences

From above statements,

- Prime numbers from 10 to 100 are 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89 and 97. Here excluding 11 means the number 11 is not included.
- So the number of vacancies is from 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89 and 97 in all categories of all 5 states.
- Note: Twenty numbers are there (5 states * 4 category = 20, all states have different vacancy)
- By using above numbers, we can find the total number of vacancies of all 5 states in all categories,

$$\text{Sum} = 13 + 17 + 19 + 23 + 29 + 31 + 37 + 41 + 43 + 47 + 53 + 59 + 61 + 67 + 71 + 73 + 79 + 83 + 89 + 97$$

$$\text{Total vacancies (5 states)} = 1032$$

Given (Total vacancies), Bihar = 218, Gujarat = 242 and Haryana = 182, from this total vacancies of Assam and Kerala can be determined.

$$(\text{Bihar} + \text{Gujarat} + \text{Haryana}) = 218 + 242 + 182 = 642$$

$$(\text{Assam} + \text{Kerala}) = \text{Total vacancies (5 states)} - (\text{Bihar} + \text{Gujarat} + \text{Haryana})$$

$$(\text{Assam} + \text{Kerala}) = 1032 - 642$$

$$(\text{Assam} + \text{Kerala}) = 390$$

$$\text{Given, Assam} = \text{Kerala} + 2$$

By using above equations, we get

$$(\text{Kerala} + 2 + \text{Kerala}) = 390$$

$$(2\text{Kerala}) = 390 - 2 = 388$$

$$\text{Kerala} = 388/2 = 194 \text{ (vacancies) and then Assam has,}$$

$$\text{Assam} = \text{Kerala} + 2 = 194 + 2 = 196 \text{ (vacancies)}$$

- **Given**, Total number of vacancies of SC and ST category together in all states is 300. From here we can find the total number of vacancies of OBC and General category.
- Total number of vacancies of OBC category in all 5 states together is 38 less than total number of vacancies of general category in all 5 states.

We know,

Total vacancies (5 states) = 1032

Given, (ST + SC) = 300 (all 5 states)

Then, (OBC + General) = Total vacancies (5 states) - (ST + SC)

(OBC + General) = 1032 - 300

(OBC + General) = 732

Given, OBC (vacancies) = General (vacancies) - 38

By using above equation,

(General - 38 + General) = 732

2General = 732 + 38 = 770

General = 770/2 = 385 vacancies

Therefore, OBC = 385 - 38 = 347 vacancies

- Given, Difference between numbers of vacancies of all 5 states between SC and ST category is half of the total number of vacancies of Assam state.
- Total number of vacancies of SC category is more than ST category.

Half of the total number of vacancies of Assam = 196/2 = 98 vacancies

Therefore, difference between SC and ST category (all 5 states together) = 98 &

SC category > ST category

Given, (ST + SC) = 300 (all 5 states)

Also, (SC - ST) = 98 \Rightarrow SC = 98 + ST

By using above equation, (ST + ST + 98) = 300

2ST = 300 - 98 = 202 \Rightarrow ST = 202/2 = 101 vacancies

Therefore, SC = 98 + ST \Rightarrow 98 + 101 = 199 vacancies

By using all calculations we get the table as follows,

State	SC	ST	OBC	General	Total
Assam					196
Bihar					218
Gujarat					242
Haryana					182
Kerala					194
Total	199	101	347	385	1032

References

Sum of number of vacancies of ST category of Assam and Bihar together is 30 in which Assam has less vacancy.

Difference between number of vacancies of ST category of Gujarat and Haryana is 10, but neither of the states

has more than 30 vacancies in same category.

Gujarat has 6 more vacancies in ST category than that of Kerala.

Inferences

From above statements,

Given, (Assam + Bihar), ST category = 30 & Assam < Bihar

Among given numbers only possibility is, Assam = 13 [ST Category] & Bihar = 17 [ST Category]

Given, Difference, ST Category = Gujarat (or) Haryana - Haryana (or) Gujarat = 10

ST Category, Gujarat & Haryana < 30

Among given numbers only possibility is, Gujarat or Haryana = 29 & Haryana or Gujarat = 19

By this difference gets 10 in ST Category of Gujarat & Haryana.

Given, Gujarat [ST category] = Kerala [ST category] + 6

We Know, Total ST [Category in all 5 states] = 101 Vacancies

We calculated, (Assam + Bihar + Gujarat + Haraya), ST category = (13 + 17 + 29 + 19) \Rightarrow 78

Therefore, Kerala, ST category = Total - (Assam + Bihar + Gujarat + Haraya) \Rightarrow 101 - 78

Kerala, ST category = 23 Vacancies

By this, Gujarat, ST category = 29 Vacancies i.e. (23 + 6) &

Haryana, ST category = 19 vacancies

By using above calculation, we get the following table as shown below,

State	SC	ST	OBC	General	Total
Assam		13			196
Bihar		17			218
Gujarat		29			242
Haryana		19			182
Kerala		23			194
Total	199	101	347	385	1032

References

General category of Gujarat has maximum number of vacancies.

General category of Bihar has 10 more vacancies than Haryana in the same category, but the vacancies range from more than 50 to less than 80.

General category of Assam has 22 more vacancies than Kerala in the same category.

Inferences

From above statements,

General category of Gujarat = 97 (maximum number of vacancies)

Bihar, General category = Haryana + 10
 Vacancies are ranged from 50 to 80
 Therefore the only possible number is 61 & 71 among prime numbers.
 Thus, Haryana, General category = 61 vacancies
 Bihar, General category = 61 + 10 = 71 vacancies

Given, Assam, General category = Kerala + 22
 We Know, Total General [Category in all 5 states] = 385 Vacancies
 Now, (Assam + Kerala), General = Total - (Gujarat + Haryana + Bihar)
 (Assam + Kerala), General = 385 - (97 + 61 + 71) \Rightarrow 385 - 229
 (Assam + Kerala), General = 156

We know, Assam = Kerala + 22 then we get,
 (Kerala + 22 + Kerala), General = 156
 (2Kerala), General = 156 - 22 \Rightarrow 134
 Kerala, General \Rightarrow 134/2 = 67 vacancies
 Then we get,
 (Assam + 67), General = 156
 Assam, General = 156 - 67 \Rightarrow 89 vacancies

By using above calculation, we get the following table as shown below,



State	SC	ST	OBC	General	Total
Assam		13		89	196
Bihar		17		71	218
Gujarat		29		97	242
Haryana		19		61	182
Kerala		23		67	194
Total	199	101	347	385	1032

References

OBC category of Bihar state has 12 more vacancies than the General category of Bihar.

OBC category of Haryana state has 2 vacancies less than the General category of Haryana.

Sum of vacancies of SC and ST category of Assam state together is 54.

Difference between the number of vacancies for SC and ST category of Gujarat state respectively is 8.

Inferences

From above statements,

Given, Bihar, OBC category = Bihar, General Category + 12
 We know,

Bihar, General category = 71 vacancies
Bihar, OBC category = $71 + 12 \Rightarrow 83$ vacancies

Given, Haryana, OBC category = Haryana, General Category - 2
We know,

Haryana, General category = 61 vacancies
Haryana, OBC category = $61 - 2 \Rightarrow 59$ vacancies

By using Bihar, OBC = 83 vacancies, we can determine the number of vacancies of SC category of Bihar as given below,

We know, Total vacancies, Bihar = 218 [all 4 categories]
From calculations, Bihar, ST + OBC + General = $17 + 83 + 71 = 171$
Bihar, SC category = Total, Bihar - Bihar, (ST + OBC + General)
Then, Bihar, SC category = $218 - 171 \Rightarrow 47$ vacancies
By using Haryana, OBC = 59 vacancies, we can determine the number of vacancies of SC category of Haryana as given below,

We know, Total vacancies, Haryana = 182 [all 4 categories]
From calculations, Haryana, ST + OBC + General = $19 + 59 + 61 = 139$
Haryana, SC category = Total, Haryana - Haryana, (ST + OBC + General)
Then, Haryana, SC category = $182 - 139 \Rightarrow 43$ vacancies

Given, Assam, SC + ST = 54 vacancies
Assam = 13 [ST Category]
Assam, SC category = $54 - 13 \Rightarrow 41$ vacancies

Given,

Difference between the number of vacancies SC and ST category of Gujarat state respectively is 8.

Given, Gujarat, (SC - ST) $\Rightarrow 8$
Gujarat, ST category = 29 Vacancies
Gujarat, SC - 29 = 8 \Rightarrow SC = $8 + 29 = 37$ vacancies
Now we can find number of vacancies of OBC category of Assam, as shown below
We know, Total vacancies, Assam = 196 [all 4 categories]

From calculations, Assam, SC + ST + General = $41 + 13 + 89 = 143$
Assam, OBC category = Total, Assam - Assam, (SC + ST + General)
Then, Assam, OBC category = $196 - 143 \Rightarrow 53$ vacancies
Now we can find number of vacancies of OBC category of Gujarat, as shown below
We know, Total vacancies, Gujarat = 242 [all 4 categories]
From calculations, Gujarat, SC + ST + General = $37 + 29 + 97 = 163$
Gujarat, OBC category = Total, Gujarat - Gujarat, (SC + ST + General)
Then, Gujarat, OBC category = $242 - 163 \Rightarrow 79$ vacancies

Now we can find number of vacancies of SC and ST category respectively of Kerala as shown below,
Total SC category vacancies = 199 [all 5 states] i.e. Assam = 41, Bihar = 47, Gujarat = 37 & Haryana = 43
Therefore, Assam + Bihar + Gujarat + Haryana = $41 + 47 + 37 + 43 = 168$
Then, Kerala, SC = Total - (Assam + Bihar + Gujarat + Haryana)

Kerala, SC = 199 - 168 \Rightarrow 31

Finally, the remaining vacancies left are 73, which are number of vacancies of ST category of Kerala state (or) we can determine the same value by using above method.

Thus we get the completed table as shown below,

State	SC	ST	OBC	General	Total
Assam	41	13	53	89	196
Bihar	47	17	83	71	218
Gujarat	37	29	79	97	242
Haryana	43	19	59	61	182
Kerala	31	23	73	67	194
Total	199	101	347	385	1032



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Explanations:

1. The following common explanation, we get "OBC - Kerala - 73".

Hence, option C is correct.

2. The following common explanation, we get "104".

Haryana - SC = 43 & Haryana - General = 61 and Sum = 43 + 61 = 104

Hence, option D is correct.

3. The following common explanation, we get "**Gujarat - OBC**".

Hence, option A is correct.

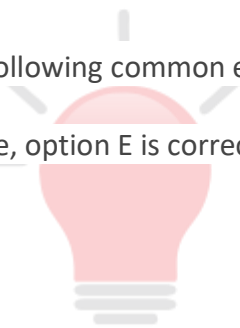
4. The following common explanation, we get "**Gujarat - SC - 37**".

Remaining 4 options are the number of vacancies of Kerala state in all 4 categories.

Hence, option C is correct.

5. The following common explanation, we get "**None of these**".

Hence, option E is correct.



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