

⑩ given,

$${}^{2n+1}P_{n+1} : {}^{2n-1}P_n = 3:5$$

$$\text{or, } \frac{(2n+1)!}{(2n+1-n+1)!} \times \frac{(2n-1-n)!}{(2n-1)!} = \frac{3}{5}$$

$$\text{or, } \frac{(2n+1)!}{(n+2)!} \times \frac{(n-1)!}{(2n-1)!} = \frac{3}{5}$$

$$\text{or, } \frac{(2n+1) \cdot 2n \cdot (2n-1)!}{(n+2)(n+1)n(n-1)!} \times \frac{(n-1)!}{(2n-1)!} = \frac{3}{5}$$

$$\text{or, } 20n+10 = 3n^2+9n+6$$

$$\text{or, } 3n^2-11n-4=0$$

$$\therefore n=4 \quad | \quad n=-\frac{1}{3}$$

$n=4$  is the answer given (Ans.)

\* formula :-

⑪ given,

$${}^{2n+1}P_{n+1} : {}^{2n-1}P_n$$

$${}^{n-1}P_3 : {}^{n+1}P_3 = 5:12$$

$$\text{or, } \frac{(n-1)(n-2)(n-3)}{(n+1)(n)(n-1)} = \frac{5}{12}$$

$$\text{or, } 12n^2 - 60n + 72 = 5n^2 + 5n$$

$$\text{or, } 7n^2 - 65n + 72 = 0$$

$$\therefore x = \frac{9}{7} \quad | \quad x = 8 \quad (\text{Ans.})$$

$$\text{⑫} \quad 4 \times {}^nP_3 = 5 \times {}^{n-1}P_3$$

$$\text{or, } 4 \times n(n-1)(n-2) = 5 \times (n-1)(n-2)(n-3)$$

$$\text{or, } 4n = 5n - 15$$

$$\therefore n = 15 \quad (\text{Ans.})$$

Betacor

⑬ 0 સર્વિસ લાઇન નંબર 250,

4	3	2	1	1
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$$= 24 \text{ નંબર } 1$$

0 ના સર્વિસ લાઇન નંબર 250,

3	3	2	1	2
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$$= 36 \text{ નંબર}$$

$\therefore$  તેમ જોડવામાં આવેલા નંબર

$$= 24 + 36 = 60 \text{ નંબર} \quad (\text{Ans.})$$

⑭

1	5	4	3
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$$= 60 \text{ નંબર } 1 (\text{Ans.})$$

⑮ Rajshahi નાથલ લાઇન સર્વિસ,

$$= \frac{18}{12 \cdot 12} = 10080 \text{ નંબર } 1$$

Barisal નાથલ લાઇન સર્વિસ,

$$= \frac{17}{12} = 2520$$

$$\text{જોડે, } \frac{10080}{2520} = 4 \quad (\text{proved})$$

⑯ Mathematics નાથલ લાઇન સર્વિસ

$$\text{or, } \frac{11}{12 \cdot 12 \cdot 12} = 4989600 \text{ નંબર} \quad (\text{Ans.})$$

મોબાઇલ લાઇન સર્વિસ નાથલ લાઇન સર્વિસ

$$\text{or, } \frac{18}{12 \cdot 12} \times \frac{14}{12} = 120960 \text{ નંબર} \quad (\text{Ans.})$$

Olmevas AM

Linamet

8) ସଂଖ୍ୟାଙ୍କର ସଂଖ୍ୟାଙ୍କର ନମ୍ବର  
Triangle ନମ୍ବର ନମ୍ବର ନମ୍ବର,  
 $18 - (16 \times 13) = 3600$  ନମ୍ବର  
(Ans.)

9) Parallel ନମ୍ବର ନମ୍ବର ନମ୍ବର,  
 $\frac{18}{12 \cdot 13} = 3360$  ନମ୍ବର (Ans.)

again,  
ସଂଖ୍ୟାଙ୍କର ନମ୍ବର ନମ୍ବର ନମ୍ବର,  
Pull are

$$\frac{16}{13} \times \frac{13}{12} = 360 \text{ ନମ୍ବର (Ans.)}$$

10) Postage ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର  
ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର  
1 2 3 4 5 6 7

$$4P_4 \times 3P_3 = 144 \text{ ନମ୍ବର (Ans.)}$$

again,  
ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର,  
 $14 \times 14 = 576$  ନମ୍ବର (Ans.)

11) Equation ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର  
ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର  
1 2 3 4 5 6 7 8

$$4P_3 \times 5P_4 = 2880 \text{ ନମ୍ବର (Ans.)}$$

12) Millennium ନମ୍ବର ନମ୍ବର ନମ୍ବର  
ନମ୍ବର:  
 $\frac{110}{12 \cdot 12 \cdot 12} = 22680$  ନମ୍ବର  
(Ans.)

ନମ୍ବର 6 ନମ୍ବର ନମ୍ବର ନମ୍ବର:  
 $\frac{18}{12 \cdot 12 \cdot 12} = 5040$  ନମ୍ବର  
(Ans.)

13) Direction ନମ୍ବର ନମ୍ବର  
ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର

1) ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର  
ନମ୍ବର ନମ୍ବର

$$\frac{18}{12 \cdot 13} = 1 = 3359 \text{ ନମ୍ବର (Ans.)}$$

11) ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର  
ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର

$$\frac{15}{12} = 1 = 59 \text{ ନମ୍ବର (Ans.)}$$

111) ନମ୍ବର 6 ନମ୍ବର ନମ୍ବର ନମ୍ବର  
ନମ୍ବର ନମ୍ବର ନମ୍ବର ନମ୍ବର  
ନମ୍ବର:

$$\frac{15}{12} \times 13 = 1 = 359 \text{ ନମ୍ବର (Ans.)}$$

14) 14 ନମ୍ବର 1, 5, 6 ନମ୍ବର ନମ୍ବର  
ନମ୍ବର ନମ୍ବର  $= (14 - 1) = 13$  ନମ୍ବର  
ନମ୍ବର 6 ନମ୍ବର 2 ନମ୍ବର ନମ୍ବର  $= 13 + 2 = 15$  ନମ୍ବର

$$\therefore \text{ନମ୍ବର ନମ୍ବର} = 14 \times 15P_{10} = 2 \text{ (Ans.)}$$



15) Total number =  $5-1 \times 5$   
 $= 2880$  number (Ans.)

16) Total digits: -

$3^5 = 243$  number (Ans.)

17) Number: -

$5P_2 \times 8P_3 = 6720$  number (Ans.)

18) Engineering - number of students

Ans:  $\frac{11}{13 \cdot 12 \cdot 12} = 277200$  number (Ans.)

Engineering - number of students

$\frac{19}{13 \cdot 12 \cdot 12} = 15120$  number (Ans.)

Engineering - number of students

$\frac{18}{13 \cdot 12 \cdot 12} = 1680$  number (Ans.)

19) Combination:

$9 \cdot 10 \cdot 10 \cdot 10 \cdot 10$   
 $= 90000$  number

[Answer is]

Combination number of students

20) Number of students

1	1	1	1	10	10	10	10	10	10	10	10
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$= 10000000$  number (Ans.)

Number of students

1	1	1	1	10	10	10	10	10	10	2
---	---	---	---	----	----	----	----	----	----	---

$= 2000000$  number (Ans.)

21) Number of students

1	1	1	1	4	10	10	10	10	10	10
---	---	---	---	---	----	----	----	----	----	----

$= 4000000$  number (Ans.)

22) Number of students

3	3	2	1	2
---	---	---	---	---

$= 36$  number (Ans.)

23) Number of students

$17 - 16 \times 12 = 3600$  number (Ans.)

24) Director - number of students

$\frac{18}{12} - 14 \times \frac{5}{12} = 18720$  number (Ans.)

25) Examination - number of students

$\frac{11}{12 \cdot 12 \cdot 12} = \frac{17}{12 \cdot 12} \times \frac{5}{12} = 4914000$  number (Ans.)

26) Calculus માટેના અભ્યાસમાં

$$\therefore \frac{18}{12 \cdot 12 \cdot 12} = 5040 \text{ નીચે (Ans.)}$$

અન્ય 6 ભાગો જોઈ અન્ય પાઠ્ય,

$$3 \times \frac{16}{12 \cdot 12} = 540 \text{ નીચે (Ans.)}$$

27) 5 થી વધુ જોઈ નહિતો

$$\text{દાખલો બાદ: } 15 \\ = 120 \text{ થી.}$$

28) Engineering માટેના અભ્યાસમાં

$$= \frac{111}{13 \cdot 13 \cdot 12 \cdot 12} = 277200 \text{ નીચે (Ans.)}$$

e જોઈ જોઈ અન્ય દાખલો થઈ,

$$\frac{19}{13 \cdot 12 \cdot 12} = 15120 \text{ નીચે (Ans.)}$$

e અન્ય અન્ય દાખલો થઈ:

$$\frac{18}{13 \cdot 12 \cdot 12} = 1680 \text{ નીચે (Ans.)}$$

29) અભ્યાસમાં અન્ય નિર્ધારિત અન્ય:

$$10P_3 = 720 \text{ નીચે (Ans.)}$$

30) Textile માટેના અભ્યાસમાં

$$\text{અન્ય: } \frac{17}{12 \cdot 12} = 1260 \text{ નીચે (Ans.)}$$

$$\text{અન્ય જોઈ પાઠ્ય: } \frac{15}{12} \times \frac{13}{12} = 180 \text{ નીચે (Ans.)}$$

i 2) 3 4 5 6 7

અભ્યાસમાં અન્ય અન્ય દાખલો

$$\text{અન્ય: } \frac{3P_3 \times 4P_4}{12 \cdot 12} = 36 \text{ નીચે (Ans.)}$$

31) જો અભ્યાસ 6 થી અન્ય:

$$\frac{16}{12 \cdot 13} = 60 \text{ નીચે (Ans.)}$$

① અન્ય	③ અન્ય	② અન્ય
1	2	2 $\frac{15}{12 \cdot 12}$
1	3	1 $\frac{15}{13}$
0	2	3 $\frac{15}{12 \cdot 13}$

$$= 30 + 20 + 10$$

$$= 60 \text{ નીચે (Ans.)}$$

32) Immediate માટેના અભ્યાસમાં

$$\frac{19}{12 \cdot 12 \cdot 12} = 45360 \text{ નીચે (Ans.)}$$

અન્ય: A અન્ય:

$$\frac{17}{12 \cdot 12 \cdot 12} = 630 \text{ નીચે (Ans.)}$$

31)