

Permutation and Combination - Class XI

Past Year JEE Questions

Questions

Question: 01

The number of functions f from $\{1, 2, 3, \dots, 20\}$ onto $\{1, 2, 3, \dots, 20\}$ such that $f(k)$ is a multiple of 3, whenever k is a multiple of 4, is :

- A. $6^5 \times (15)!$
- B. $5^6 \times 15$
- C. $(15)! \times 6!$
- D. $5! \times 6!$

Solutions

Solution: 01

Explanation

$f(k) = 3m$ (3, 6, 9, 12, 15, 18)

for $k = 4, 8, 12, 16, 20$

6.5.4.3.2 ways

For rest numbers $15!$ ways

Total ways = $6! (15!)$