

# Assignment 02

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Section - 2

Ans. to the Q No. 1:

① Maximum height : 15 :

A | B | C | E

~~A~~B | C | E | F

~~A~~ | B | D | E

~~A~~C | B | E | G

② Fitness level :

A | B | C | E

36

~~A~~B | C | E | F

48

~~A~~ | B | D | E

28

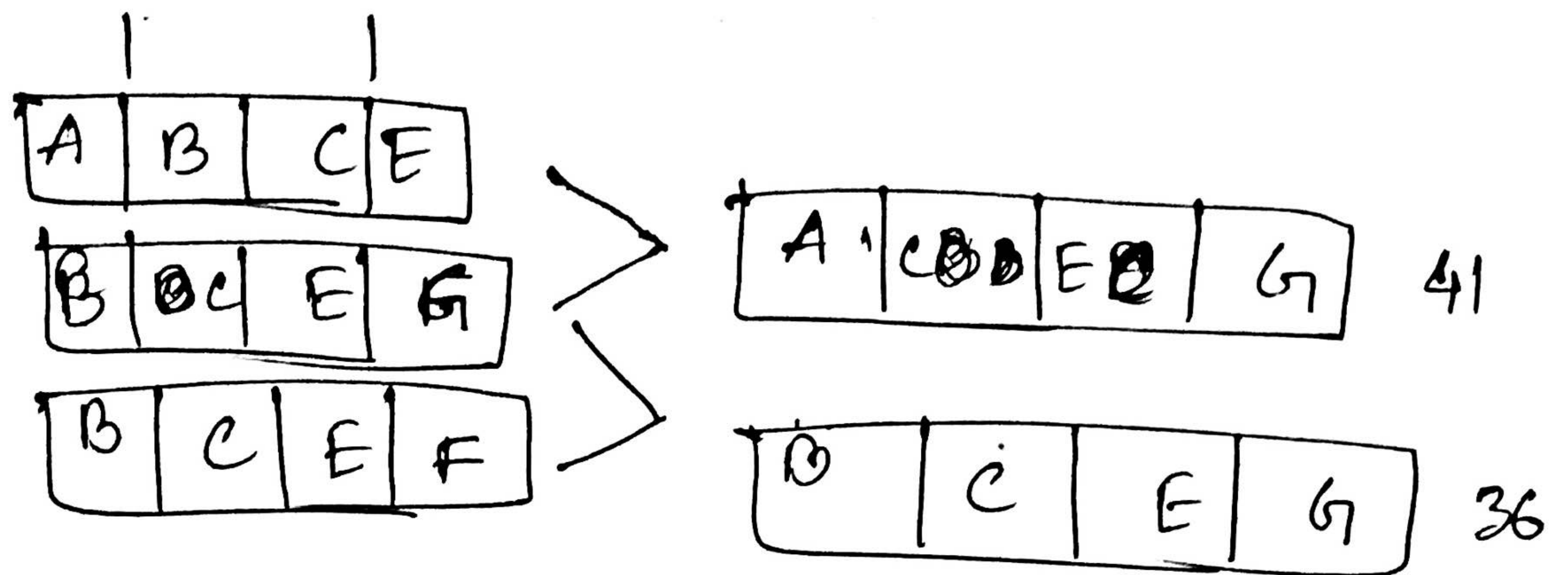
~~A~~C | B | E | G

36

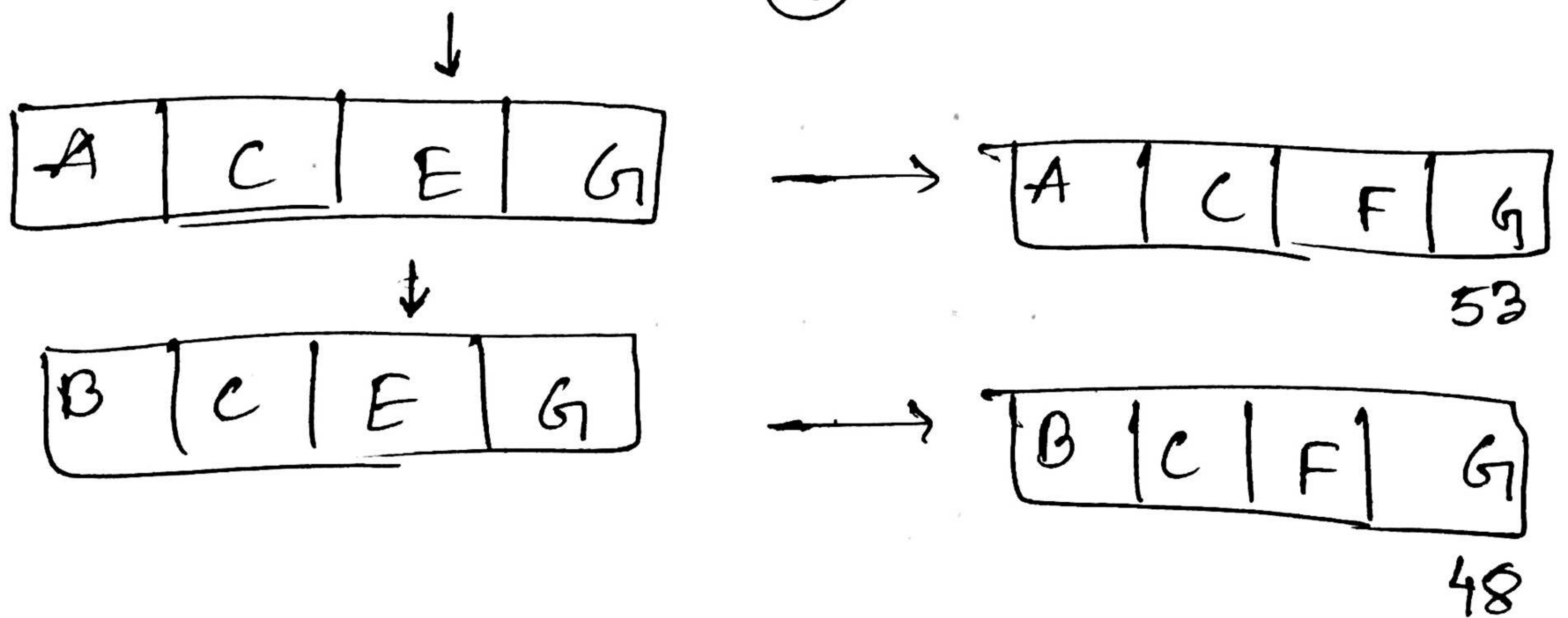
Two of the fittest chromosomes are  
A C E F and A B C E.



- ③ Single point crossover in between 3 of the fittest chromosomes to retrieve 2 best off springs.



- ④ Mutating the ~~to~~ two offsprings found from ~~a~~ number ③





Ans. to the Q No. 3:

① Yes, genetic algorithm is appropriate for solving this problem. Genetic algorithm basically randomizes the population. So after certain iterations there is a chance of retrieving a population which is the best or close to the best.

② Maximum weight limit is = 21.

$$\cancel{P+O+M+R}$$

$$\cancel{P+N+Q+R}$$

~~Fitness level~~

$$M+N+O+R$$

$$M+O+Q+R$$

$$P+Q+R+O$$

$$M+O+P+R$$

③ Fitness level of the chromosomes are -

$$M+N+O+R = 10 + 5 + 15 + 3 = 33$$

$$M+O+Q+R = 10 + 15 + 6 + 3 = 34$$

$$P+Q+R+O = 7 + 6 + 3 + 15 = 31$$

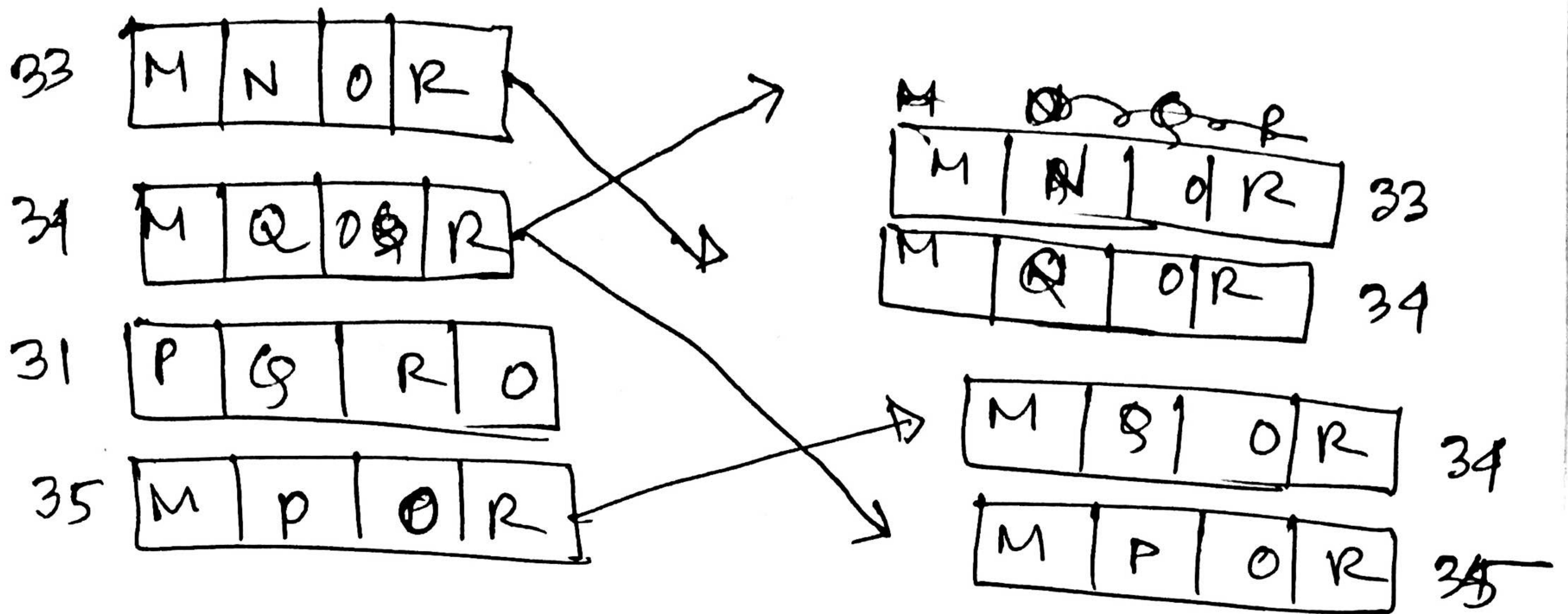
$$M+O+P+R = 10 + 15 + 7 + 3 = 35$$

Two of the fittest chromosomes are  
( $M+O+P+R$  and  $M+O+Q+R$ )



④

Crossover amongst the fittest 3:



Mutating:

