

5 An experiment was conducted to examine the effect of ultraviolet radiation on the development of antibiotic resistance in a strain of bacteria. The table summarises the outcomes of this experiment.

Treatment	Antibiotic resistance				
	Antibiotic P	Antibiotic Q	Antibiotic R	Antibiotic S	Antibiotic T
No exposure to ultraviolet radiation	✓	✓	✗	✗	✗
Exposure to ultraviolet radiation	✓	✓	✗	✓	✗

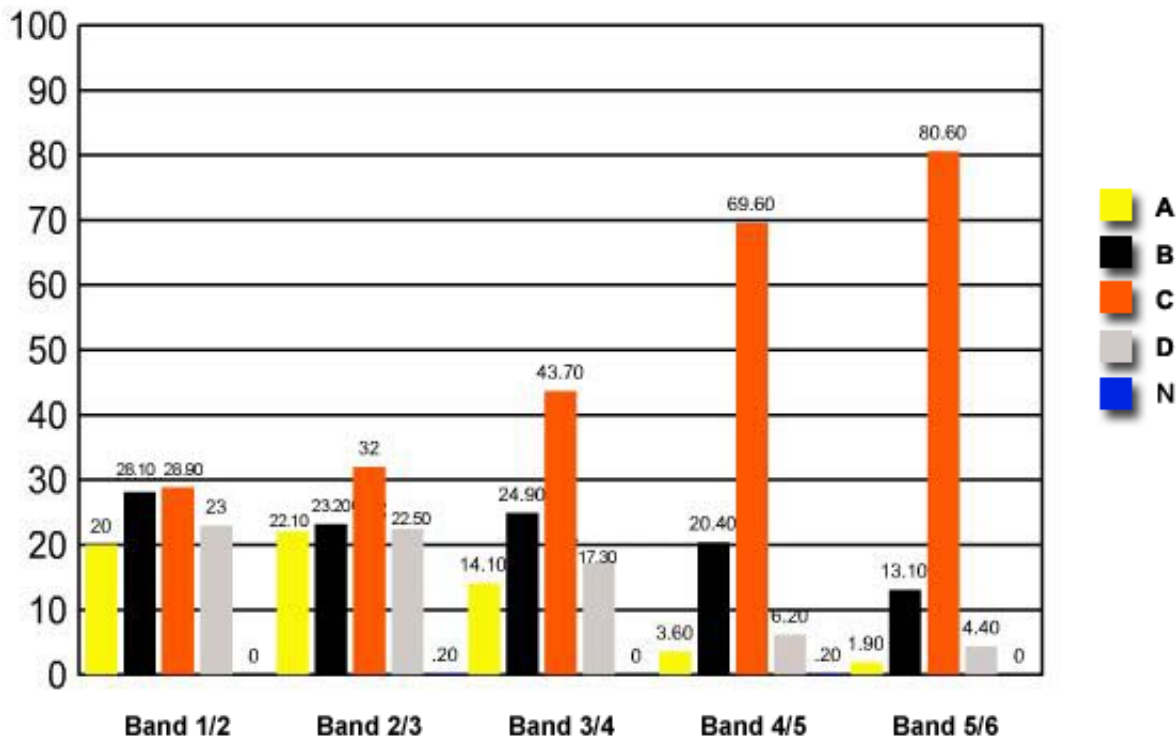
✓ = resistant ✗ = not resistant

Which of the following statements best summarises the stages in the development of the new strain of bacteria that was resistant to antibiotic S?

- (A) Hybridisation → Mutation → Natural Selection
- (B) Replication → Mutation → Natural Selection
- ✓ (C) Mutation → Natural Selection → Replication
- (D) Mutation → Hybridisation → Natural Selection

	Band 1/2	Band 2/3	Band 3/4	Band 4/5	Band 5/6
A	20	22.10	14.10	3.60	1.90
B	28.10	23.20	24.90	20.40	13.10
C	28.90	32	43.70	69.60	80.60
D	23	22.50	17.30	6.20	4.40
N	0	0.20	0	0.20	0

Question 5 : % answers correct by band range



The table and graph show, for the groups of students whose marks in the examination corresponded to the borderline between two bands, what percentages of each group selected the responses A, B, C and D. N is used to identify: No valid response.
