DAA (1) 19DCS093 WAVES

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Ans - (1)

=> Pivot number = 7

=> For first phase.

7 11 14 6 9 4 3 12
  i j

7 11 14 6 9 4 3 12
  i j

7 3 14 6 9 4 11 12
  i j

7 3 4 6 9 14 11 12
  i j

7 3 4 6 9 14 11 12
  j i

=> Now, we will interchange the position of pivot and element at index j

=> | 6 | 3 | 4 | 7 | 9 | 14 | 11 | 12 |

=> The above will be the sequence after first phase.

Ans-(2)

= Suppose;

S1 => 24 45 63 85
S_2 => 17 31 50 96

S => -

S1 => 24 45 63 85
S2 => 31 50 96

S => 17

S1 => 45 63 85
S2 => 31 50 96
S => 17 24

S1 => 45 63 85
S2 => 50 96

S => 17 24 31

S1 => 63 85
S2 => 50 96

S => 17 24 31 45

S1 => 63 85
S2 => 96

S => 17 24 31 45 50

S1 => 85
S2 => 96

S = 17 24 31 45 50 63

S1 = -
S2 = 96

S = 17 24 31 45 50 63 85

=> S1 = - S2 = -

S => | 17 | 24 | 31 | 45 | 50 | 63 | 85 | 96 |

=> Average case time complexity for merge sort
=> O(n log n)