

- 3 (a) State what is meant by a *progressive wave*.

.....

.....

..... [2]

- (b) Two sources S_1 and S_2 produce waves of the same frequency on the surface of some water.

- (i) State three conditions that must be satisfied for waves from the two sources to produce an observable interference pattern on the water surface.

1.

.....

2.

.....

3.

..... [3]

- (ii) Wavefronts produced by the two sources are illustrated in Fig. 3.1.

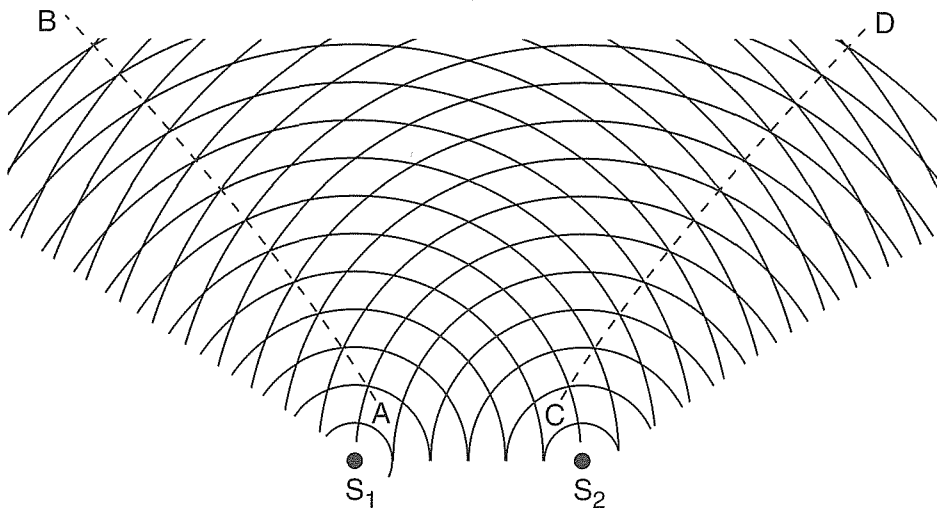


Fig. 3.1

Waves of maximum amplitude are observed along the directions AB and CD, among others.

1. Determine the number of directions between AB and CD along which maximum amplitude occurs.

number = [1]

2. On Fig. 3.1, draw a line to show one direction along which the waves have minimum amplitude. [1]