

1. In Young's double-slit experiment, the source is white light. One of the holes is covered by a red filter and another by a blue filter. In this case
- 1) there shall be an interference pattern for red distinct from that for blue
 - 2) there shall be no interference fringes
 - 3) there shall be alternate interference patterns of red and blue
 - 4) there shall be an interference pattern for red mixing with one for blue

Sol. 2) there shall be no interference fringes

For sustained interference, the source must be coherent and should emit the light of same frequency. In the Young Double Slit experiment, one hole is covered with red and other with blue, which has different frequency, so no interference takes place.