

- 23 The order of magnitude of the frequency of the longest-wavelength ultraviolet wave is expressed as  $10^x$  Hz.

What is the value of  $x$ ?

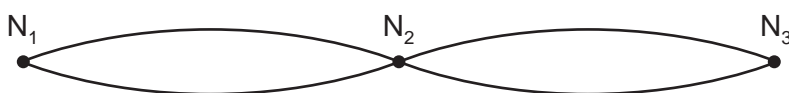
- A 13                      B 15                      C 17                      D 19

- 24 The light from two lasers passes through a vacuum. One laser emits red light and the other emits green light.

Which property of the two laser beams must be different?

- A amplitude  
B frequency  
C plane of polarisation  
D speed

- 25 The diagram shows a standing wave on a string. The standing wave has three nodes  $N_1$ ,  $N_2$  and  $N_3$ .



Which statement is correct?

- A All points on the string vibrate in phase.  
B All points on the string vibrate with the same amplitude.  
C Points equidistant from  $N_2$  vibrate with the same frequency and in phase.  
D Points equidistant from  $N_2$  vibrate with the same frequency and the same amplitude.

- 26 A parallel beam of light of wavelength 450 nm falls normally on a diffraction grating which has 300 lines/mm.

What is the total number of transmitted maxima?

- A 7                      B 8                      C 14                      D 15

**Space for working**