

- 4 (a) State what is meant by *interference*.

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..... [1]
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- (b) (i) A beam of white light is shone normally onto a diffraction grating with 300 lines per millimetre. The light source consists of wavelength between 400 nm to 700 nm.

Determine the highest order of the full spectrum that can be produced.

highest order = [2]

- (ii) Determine whether the first and the second spectra overlap. Show your calculations clearly.

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..... [3]

- (c) At the edge of the central maximum bright fringe, it is observed that there are coloured fringes. Explain this phenomenon.

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..... [2]
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