



2020 Sec 4 Physics Notes Answers Chapter 10 Electromagnetic Spectrum

10.2

- (a) energy
- (b) transverse
- (c) vacuum
- (d) light
- (e) reflection, refraction
- (f) velocity; frequency; wavelength

10.21

Refer textbook p. 284

10.32

Refer textbook p. 289 & 290

- You are not required to memorize actual range of wavelength or frequency but it is good to have some idea of the relative order of magnitudes
- E.g. wavelength of radio waves: a few cm to 100 000 m
- E.g. wavelength of visible light: 400 nm (violet) to 700 nm (red)

10.4

- X-rays, gamma rays
- frequencies, wavelengths
- ionization
- destruction, modification

Exercise

1.

- (a) a beam of **protons** – not EM waves
- (b) a laser beam from a laser pointer – visible light
- (c) heat from a camp fire – infra-red rays
- (d) information transmitted through an optical fibre – visible light
- (e) colour of a flame from a Bunsen burner – visible light
- (f) gamma rays from a radioactive material – gamma rays
- (g) **electrons** emitted in a cathode ray tube in a conventional television – not EM waves