S2 Physics

MEDICAL PHYSICS

Study Guide

The Use of Thermometers

At the end of the section I can:

- ❑ 1. State that a thermometer requires some measurable physical property that changes with temperature.
- ❑ 2. Describe the operation of a liquid in glass thermometer.
- ❑ 3. Describe the main differences between a clinical and ordinary thermometer.
- ❑ 4. Describe how body temperature is measured using a clinical thermometer.
- ❑ 5. Explain the significance of body temperature in diagnosis of illness.

S2 Physics

MEDICAL PHYSICS

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Using Sound

At the end of the section I can:

- ❑ 1. State that a solid, a liquid or a gas is required for the transmission of sound.
- ❑ 2. Explain the basic principles of a stethoscope as a “hearing aid”
- ❑ 3. State that high frequency vibrations, beyond the range of human hearing, are called ultrasounds
- ❑ 4. Give an example of the use of ultrasound in medicine.
- ❑ 5. State that sound loudness is measured in decibels.
- ❑ 6. Give a few examples of sound levels in the range 0 dB - 120 dB

S2 Physics

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Light and Sight

At the end of the section I can:

- ❑ 1. Describe a simple experiment to find the focal length of a spherical convex lens.

- ❑ 2. Describe the focusing of light on the retina of the eye.

- ❑ 3. State the meaning of long and short sight

- ❑ 4. Explain the use of lenses to correct long and short sight

- ❑ 5. Explain the use of fibre optics in the endoscope (fibroscope).

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Using the Spectrum

At the end of the section I can:

- ❑ 1. Describe one use of X-rays in medicine.

- ❑ 2. State that photographic film can be used to detect X-rays.

- ❑ 3. Describe the use of ultraviolet and infrared in medicine.

- ❑ 4. State that excessive exposure to ultraviolet radiation may produce skin cancer.

S2 Physics

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Nuclear Radiation

At the end of the section I can:

- ❑ 1. State that radiation can kill living cells or change the nature of living cells.

- ❑ 2. Describe one medical use of radiation based on the fact that radiation can destroy cells (e.g. instrument sterilisation, treatment of cancer).

- ❑ 3. Describe one medical use of radiation based on the fact that radiation is easy to detect.

- ❑ 4. State that radiation energy may be absorbed in the medium through which it passes.