The correct answers are in the next section.

1. What two things does a pulse oximeter measure?
2. What is displayed on a pulse oximeter screen?
3. An oximeter probe has two parts. What are they?

There are TWO numerical values obtained from the pulse oximeter monitor:

- **The oxygen saturation of haemoglobin in arterial blood.** The value of the oxygen saturation is given together with an audible signal that varies in pitch depending on the oxygen saturation. A falling pitch indicates falling oxygen saturation. Since the oximeter detects the saturation peripherally on a finger, toe or ear, the result is recorded as the peripheral oxygen saturation, described as SpO2.

- **The pulse rate** in beats per minute, averaged over 5 to 20 seconds. Some oximeters display a pulse waveform or indicator that illustrates the strength of the pulse being detected. This display indicates how well the tissues are perfused. The signal strength falls if the circulation becomes inadequate.
Pulse Oximeter – demonstration

Demonstrate to the instructor or to a colleague:

1. How to charge the oximeter battery and store the accessories ready for clinical use.
2. How to select the most appropriate sensor for the patient.
3. How to apply the sensor to the patient correctly.
4. The battery condition indicator – what does the reading show?
5. How to switch on the monitor and describe the self-check routine.
6. The features of the main display.
7. The features of the waveform or pulse indicator.
8. How to adjust the alarm limits.
9. How to adjust the pulse sound volume.
10. How to turn the backlight on or off.

Answer the following two questions.

11. What conditions could cause inaccurate readings?
12. How should the sensor site be selected?
Knowledge about pulse oximetry

Answer these questions about pulse oximetry. More than one answer may be correct.

1. The pulse oximeter measures:
   a. Haemoglobin level in blood
   b. The amount of oxygen contained in the blood
   c. Percentage of haemoglobin saturated with oxygen
   d. Pulse rate
   e. Cardiac output

2. Which of the following (if any) statements is true about oximeter probes?
   a. Ear probes tend to read higher than finger probes
   b. Probes are expensive
   c. The probe can be cleaned gently with soapy water
   d. If a signal is not present, the probe is always faulty
   e. Nail varnish does not affect probe function

3. Which of the following can cause false readings on a pulse oximeter?
   a. Dark skinned patients
   b. Fast pulse rates with normal blood pressures
   c. Overhead lights shining on probes
   d. Carbon monoxide poisoning
   e. Oxygen treatment

4. Oxygen saturation:
   a. Should always be 100% during anaesthesia
   b. Is normally above 95% in a healthy 2-year-old
   c. Is normally less than 93% in a 70-year-old
   d. Only becomes seriously low when under 75%
   e. Is not worth measuring during spinal anaesthesia for Caesarean section

5. The following may reduce the chance of a successful oximeter reading:
   a. Fever
b. Hypertension
c. Sickle cell disease
d. Arrhythmia
e. Hypovolaemia