

# Medical Applications Higher Tier

Route: Question-Draft 1



√ Check

the

Describe the features of ultrasound and X-rays, and what happens to each type of wave after it has entered the human body. (6 marks)

## **Command word**

S Link sentences

with a range of

## Describe:

 $\hat{\mathbf{i}}$ 

To give an ordered account of a method, process or principle.

## **Connectives**

¶ Make sure you include the following

**Keywords** 

Edit your first draft using the

**Markscheme** 

First, next, and, then also, in addition finally, lastly

Electromagnetic, wave frequency, wavelength transverse, ionising, skin, bone longitudinal, hearing, hertz boundary, reflect, speed, medium



# Marking points Medical applications

#### Route: Markscheme-Draft 2

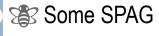




**SPAG** 

There is a basic description
of a wave
or there is a basic description
of what happens to either wave
when they enter the body.

#### 3-4 marks



errors

A clear description of both waves or what happens to both waves inside the body or a clear description of one wave and what happens to the wave inside the body

#### 5-6 marks

Almost faultless

**SPAG** 

Detailed description of both waves and detailed description as to what happens to either wave inside the body.

#### Model answer

Improve your

first draft

Second draft

X-rays are high <u>energy</u>, high <u>frequency</u> and <u>short wavelength electromagnetic</u> waves with <u>ionising</u> properties. These <u>transverse</u> waves are absorbed by bone but travel through skin.

Ultrasound is a *longitudinal* wave with a frequenxy

of above 20000 Hz (above the human limit).

Inside the body it travels at different speeds through

different <u>media</u> and is <u>reflected</u> at their boundaries.



# Medical Applications Higher Tier

Route: Question-Draft 1



✓ Check

the

# Describe how you could use a clamp and stand, a steel rod, a plumb line, a ruler and pen to find the centre of mass of a shape. (6 marks)

## **Command word**

S Link sentences

with a range of

## Describe:

To give an ordered account of a method, process or principle.

## **Connectives**

¶ Make sure you include the following

## **Keywords**

Edit your first draft using the

Markscheme

First, next, and, then also, in addition finally, lastly

Hole ends

pencil line straight

cross, balance



# Marking points Medical applications

#### Route: Markscheme-Draft 2

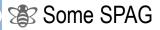




**SPAG** 

There is a basic description of how to find the centre of mass that is unclear but works.

#### 3-4 marks



errors

A clear description of how to determine the centre of mass. The method works.

## 5-6 marks

<sup>Iobc</sup> Almost faultless

**SPAG** 

Detailed description of how to find the centre of mass.

The method

works.

#### Model answer

Improve your

first draft

Second draft



Firstly, <u>clamp</u> the <u>steel rod</u> horizontally from the clamp. Next, make <u>a hole</u> in the shape

and hang the shape by the rod through the hole.

Now hang the <u>plumb line</u> from the rod.

Mark the ends of the plumb line on the shape and

use a ruler to draw a straight line. Make another

hole and repeat the process. The centre of mass is

where the two lines cross. Balance the shape.



# Magnetic fields Higher Tier

Route: Question-Draft 1



VOICON

the

## relay switches work. . (6 marks)

i

Explain how

## **Command word**

Link sentences
with a range of

Explain:
To link
all points
made
logically.

## **Connectives**

¶ Make sure you include the following

So that, so, that means therefore consequently as a result because

## Keywords

Edit your first draft using the

**Markscheme** 

Current, coil
electromagnet
magnetic field
iron bar
contacts, circuit



# Marking points Magnetic fields







**SPAG** 

There is a brief
explanation
of how a current
is caused in
the circuit.

#### 3-4 marks



errors

There is some
explanation
of how a current
is caused to
flow in a circuit.

## 5-6 marks

<sup>Iαbc</sup> Almost faultless

**SPAG** 

There is a clear and detailed explanation of how a current is caused to flow in a circuit.

#### Model answer

Improve your

first draft

Second draft

When  $\underline{\textit{a current}}$  flows through

an <u>electromagnet</u> a <u>magnetic field</u>

Is produced around the electromagnet.

This means that the i<u>ron bar</u> is attracted

and pulled on to the electromagnet.

As a result <u>contacts/ switch gaps</u> are closed

which completes the circuit.

<u>Current can now flow</u> through the circuit..



## P3.3a

# Magnetic fields Higher Tier

Route: Question-Draft 1



✓ Check

the

Explain how transformers work.

. (6 marks)

## **Command word**

Link sentences

with a range of

# Explain: To link all points made logically.

## **Connectives**

¶ Make sure you include the following

So that, so, that means therefore consequently as a result

## Keywords

Edit your first draft using the

**Markscheme** 

Current, input
alternating
primary, secondary, coil
magnetic field
induce, voltage

because

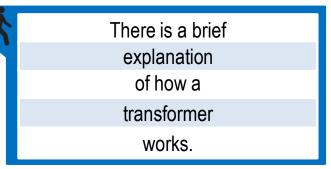


## P3.3a

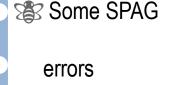
# Marking points Magnetic fields

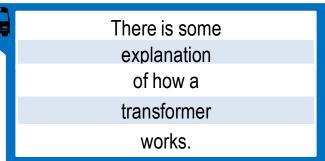






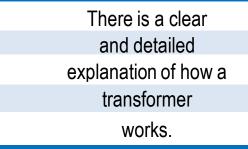






## 5-6 marks

Almost faultless
SPAG



## Model answer

Improve your first draft

When an alternating current
is supplied to the primary coil
an alternating magnetic field
is produced in the iron core.
This magnetic field now links
with the secondary coil which
induces and alternating voltage
across the secondary coil.

Second draft