

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**TWENTY FIRST CENTURY SCIENCE**  
**ADDITIONAL APPLIED SCIENCE A**  
Life Care (Foundation Tier)

**A324/01**

**Wednesday 15 June 2011**  
**Morning**

**Duration: 45 minutes**

Candidates answer on the question paper.  
A calculator may be used for this paper.

**OCR supplied materials:**  
None

**Other materials required:**

- Pencil
- Ruler (cm/mm)



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**INSTRUCTIONS TO CANDIDATES**

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Answer **all** the questions.
- Do **not** write in the bar codes.

**INFORMATION FOR CANDIDATES**

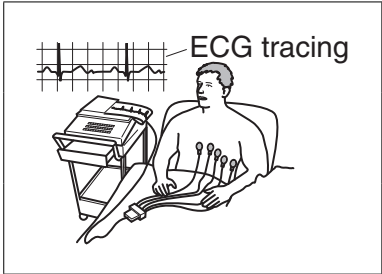
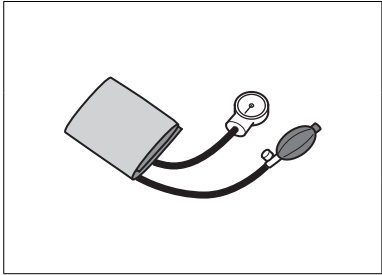
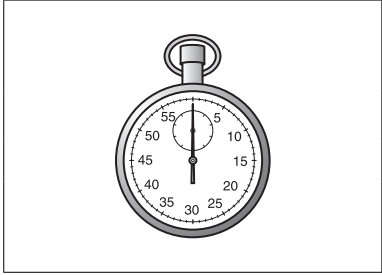
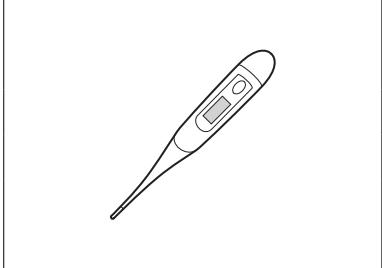
- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is **36**.
- This document consists of **8** pages. Any blank pages are indicated.

Answer **all** the questions.

1 Nurses use a variety of equipment to assess the condition of their patients.

Draw a straight line from the **picture** of each piece of **equipment** to its correct **name**.  
Then draw another straight line from the **name** to its correct **use**.

One has been done for you.

equipment	name	use
 <p>ECG tracing</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">clinical thermometer</div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">to measure blood pressure</div>
	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">stopwatch</div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">to measure pulse rate</div>
	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">sphygmomanometer</div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">to study the functioning of the heart</div>
	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">electrocardiogram</div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">to measure body temperature</div>

[4]

[Total: 4]

- 2 Regular contact between fitness coaches and their clients is very important. Which of the following reasons support this statement?

Put ticks (✓) in the boxes next to the **three** best reasons.

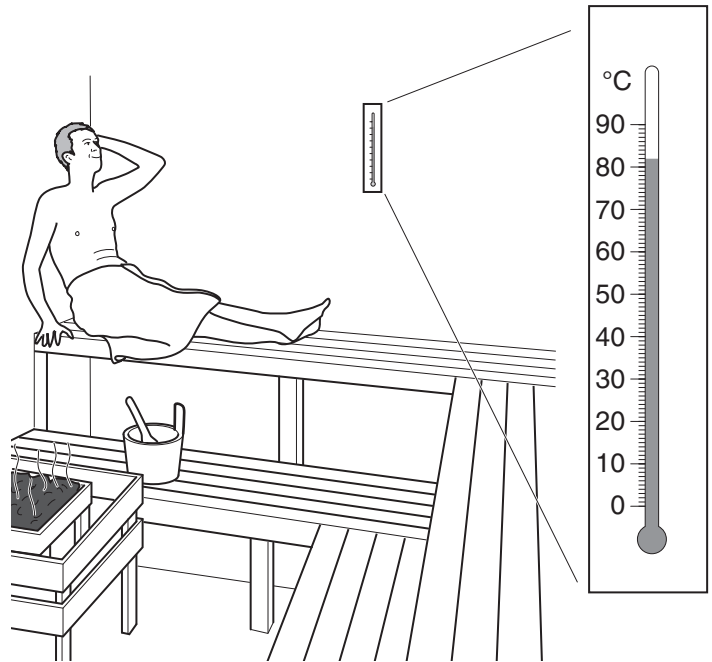
to discuss recent football results	
to discuss any injury concerns	
to find out about the coach's holiday plans	
to build up a trusting relationship	
to discuss progress and possible changes to a fitness programme	
to decide who is the team captain	

[2]

[Total: 2]

3 A sauna has been built at Mike's local fitness centre.

Mike tries out the sauna.



The thermometer shows the temperature of the sauna.

(a) What is the temperature of the sauna?

..... °C [1]

(b) Describe **two** ways Mike's body responds to this temperature.

1 .....

.....

2 .....

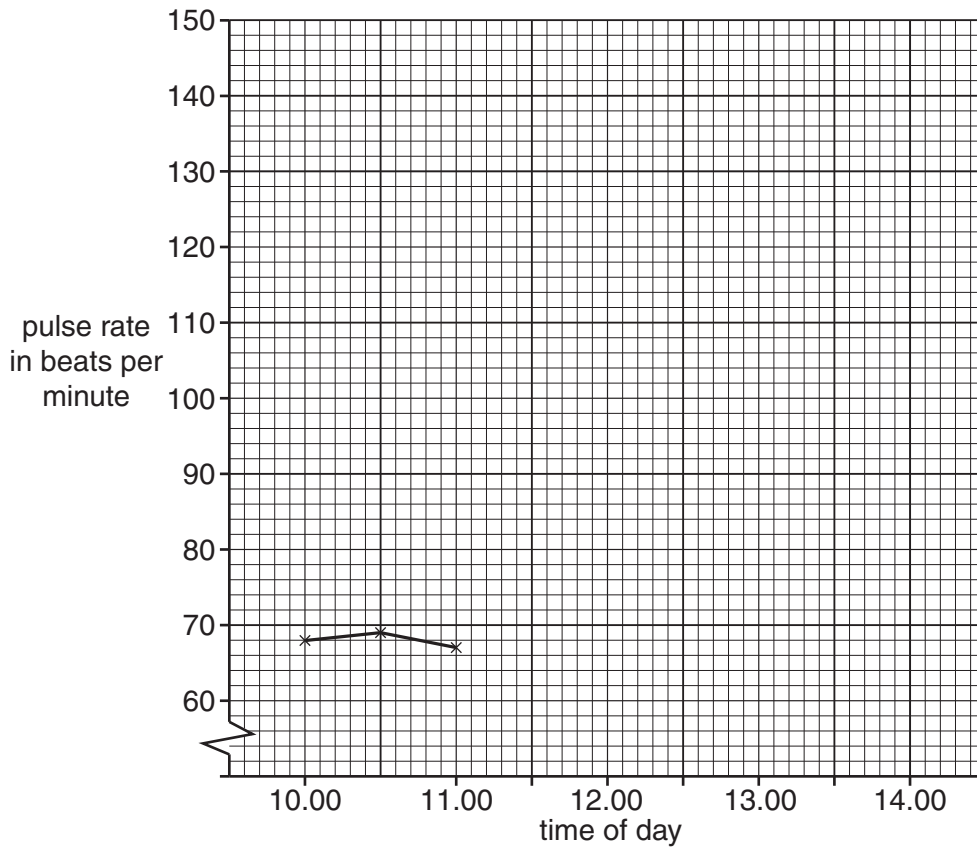
..... [3]

[Total: 4]

- 4 Joanna goes to an amusement park.  
The table shows her pulse rate at different times during the day.

time of day	pulse rate beats per minute
10.00	68
10.30	69
11.00	67
11.30	84
12.00	142
12.30	67
13.00	69
13.30	73
14.00	68

- (a) Plot a graph of Joanna's pulse rate.  
Some points have been done for you.  
Finish the graph by drawing the best line through the points.



[3]

- (b) (i) What is Joanna's resting pulse rate?  
..... beats per minute [1]

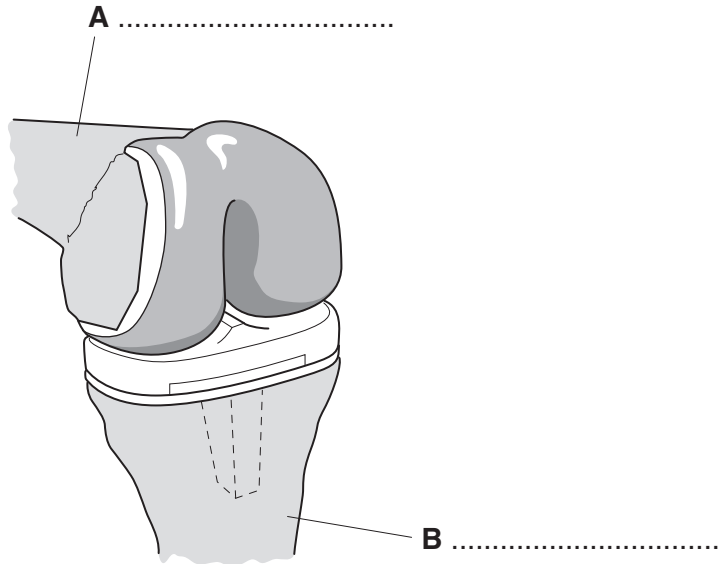
- (ii) Suggest a reason why Joanna's pulse rate increased suddenly.  
..... [1]

- (c) Sometimes a person's pulse can be weak.  
Suggest one possible cause for a weak pulse.  
..... [1]

[Total: 6]  
Turn over

5 Mark had an operation on his knee.  
An artificial knee joint was fitted.  
The diagram shows Mark's new knee joint.

(a) (i) Complete the diagram by naming the two bones labelled **A** and **B**.



[2]

(ii) Write down the names of **three** structures that are **not** shown in the diagram, but are necessary for a joint to work.

- 1 .....
- 2 .....
- 3 ..... [3]

(b) Before Mark can leave the hospital he will have to see several health practitioners.  
One of these is a physiotherapist.

(i) Describe the role of a physiotherapist.

- .....
- ..... [2]

(ii) Give the title and role of **two other** health practitioners who deliver direct health care.

title	role
1	
2	

[4]

(c) During Mark's time in hospital, health practitioners have kept accurate records about him.

Which of the following statements explain the need for accurate record keeping?

Put ticks (✓) in the boxes next to the **three** best statements.

to alert staff to any allergies Mark has	
to inform staff of the medication Mark has received	
to make sure Mark is fed on time	
to warn staff that Mark does not like to be woken too early	
to help staff monitor Mark's progress	
to find out which TV channels Mark likes to watch	
to ensure Mark gets regular visitors	

[3]

[Total: 14]

6 (a) Ahmed works in the hospital accident and emergency unit.

The list describes his patients.

- A a man with a suspected broken arm
- B an unconscious person who is not breathing
- C a teenager with a small cut on the finger
- D a woman complaining of chest pains
- E a man wanting batteries for his hearing aid

He has to prioritise patients for emergency treatment.

Write the letters **A**, **B**, **C**, **D** and **E** in the boxes to show the order in which Ahmed should prioritise the patients.

--	--	--	--	--

[3]

(b) Ahmed refers patients for further techniques and treatment. Some of these techniques are non-invasive.

(i) Which non-invasive technique would show that an arm is broken?

..... [1]

(ii) Suggest **two** advantages of using a non-invasive technique.

1 .....

2 ..... [2]

[Total: 6]

**END OF QUESTION PAPER**



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