

Wednesday 5 June 2013 – Afternoon

GCSE ADDITIONAL APPLIED SCIENCE

A191/01 Science in Society (Foundation Tier)

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

Duration: 1 hour

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. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- 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).
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

- Your quality of written communication is assessed in questions marked with a pencil (✎).
- 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 **50**.
- This document consists of **12** pages. Any blank pages are indicated.

Answer **all** the questions.

1 Local organisations provide sport or fitness facilities for the community.

(a) Qualified practitioners work in these facilities.

(i) Write down **two** examples of these facilities.

For each one, describe the job of a qualified practitioner who works there.

Local Facility	Job of Qualified Practitioner

[4]

(ii) Suggest **two** different regulations that affect practitioners working at local facilities.

regulation 1

regulation 2

[2]

(b) Fitness programmes include a physical baseline assessment.

Suggest what a baseline assessment is and why it is done.

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..... [3]

[Total: 9]

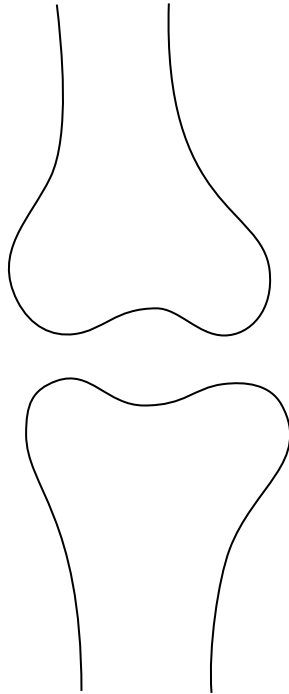
2 The diagram shows bones in a human joint.

Draw in the other parts of the joint.

Label the diagram and explain how the joint moves smoothly during exercise.



The quality of written communication will be assessed in your answer.



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..... [6]

[Total: 6]

3 Jenson is a sprinter who runs 100 metre races.

(a) During training he runs 250 m in 30 seconds.

(i) Calculate his average speed in metres per second.

Show your working. Give your answer to two significant figures.

speed =m/s [2]

(ii) Jenson’s coach measures his speed in m/s over different parts of a race.

Suggest why.

.....
 [2]

(b) After a race, Jenson has to give a urine sample.
 This is tested for performance enhancing drugs.

Write down **two** examples of performance enhancing drugs.

1
 2 [2]

(c) Jenson has an injury. He visits a physiotherapist.
 Physiotherapists treat skeletal muscular injuries.
 They need to use good practice and effective communication skills.

Draw a straight line to join the **skill** with its correct **example of use of skill**.

skill

example of use of skill

- Have a detached but personal relationship with the client.
- Make a judgement when the client’s statement conflicts with the evidence.
- Recognise the importance of teamwork.
- Collect information about the whole person.

- Consults with other professionals such as nurses and doctors.
- Asks questions about the symptoms, the work Jenson does, and his family.
- Does not get involved with any patient outside of office hours.
- Notices that Jenson’s fingers are stained with tobacco even though he said he does not smoke.

[3]

[Total: 9]

4 Jasmine is a student who is feeling very tired and weak.

A medical practitioner takes a sample of blood from Jasmine.

Describe and **explain** how the blood sample is taken and suggest what the blood could be tested for, giving reasons for the test.



The quality of written communication will be assessed in your answer.

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..... [6]

[Total: 6]

- 5 Neil is worried about his weight.
He goes to his local gym.
The fitness instructor records this information about Neil.

Body Mass	102 kg
Height	1.78 m

- (a) The formula for calculating a Body Mass Index (BMI) is shown below.

$$\text{BMI} = \frac{\text{body mass (kg)}}{[\text{height (m)}]^2}$$

Calculate Neil's Body Mass Index (BMI).

Show your working. Give your answer to the nearest whole number.






BMI = [3]

(b) Neil goes on a diet and reduces his mass to 93 kg.

Look at the table.

height cm	weight kgs																							
	45.4	47.6	49.9	52.2	54.4	56.7	59.0	61.2	63.5	65.8	68.0	70.3	72.6	74.8	77.1	79.4	81.6	83.9	86.2	88.5	90.7	93.0	95.3	97.5
152.4	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
154.9	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40
157.5	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	33	34	35	36	37	37	39
160.0	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	32	32	33	34	35	36	36	38
162.6	17	18	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	31	32	33	34	35	35	37
165.1	16	17	18	19	20	20	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	34	35
167.6	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	29	30	31	32	33	33	34
170.2	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28	29	29	30	31	32	32	33
172.7	15	16	16	17	18	19	19	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	31	32
175.3	14	15	16	17	17	18	19	20	20	21	22	22	23	24	25	25	26	27	28	28	29	30	30	31
177.8	14	15	15	16	17	18	18	19	20	20	21	22	23	23	24	25	25	26	27	28	28	29	29	30
180.3	14	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24	25	25	26	27	28	28	28	30
182.9	13	14	14	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	27	29
185.4	13	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28
188.0	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	25	25	26	26	27
190.5	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	23	23	24	25	25	25	26
193.0	12	12	13	14	14	15	15	16	17	17	18	18	19	20	20	21	22	22	23	23	24	25	25	26

 underweight  ideal  overweight  obese  extremely obese

 underweight = 12 – 18
 normal healthy weight = 18 – 24
 overweight = 25 – 29
 obese = 30 – 39
 extremely obese = 40+

Use the table to determine Neil’s new BMI chart score.

BMI = [1]

(c) How does this change Neil’s BMI category?

..... [1]

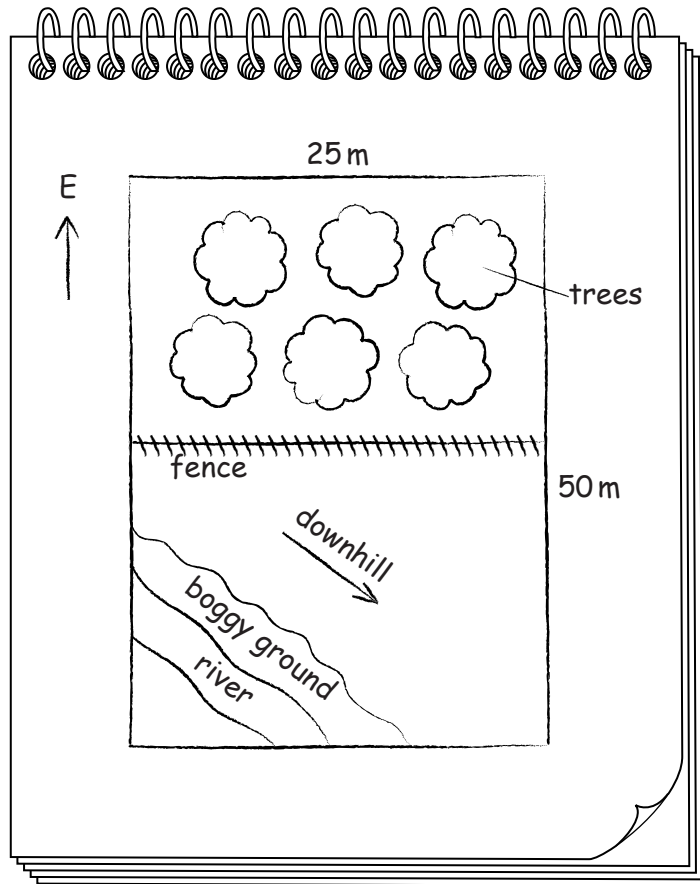
(d) What advice should Neil’s fitness instructor give him?

.....

 [2]

[Total: 7]

6 Chris makes a sketch of an area where she is doing fieldwork.



(a) Calculate the area of land that Chris has sketched.

Show your working. Give the units in your answer.

area of land = [2]

(b) Write down **six** things, other than length, that Chris has recorded in her sketch.

- 1
- 2
- 3
- 4
- 5
- 6

[3]

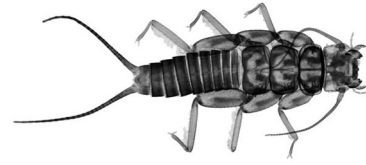
(c) Chris caught three organisms in the river.



A

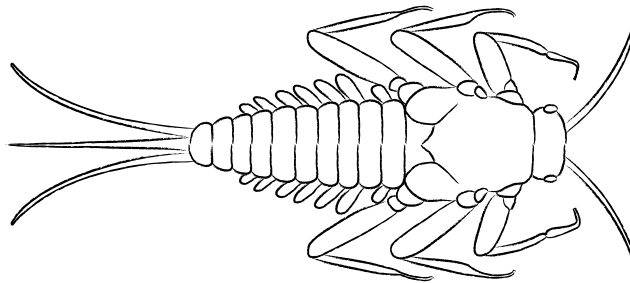


B



C

She drew a diagram of the organism in photograph B.



Put rings on the diagram around two features that are **not** found on either of the other organisms. [2]

[Total: 7]

11
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