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Surname					Other names					
Pearson BTEC Level 3 Nationals Extended Diploma	Centre Number					Learner Registration Number				
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<h1>Health and Social Care</h1> <h2>Unit 3: Anatomy and Physiology for Health and Social Care</h2>										
Wednesday 6 June 2018 – Morning						Paper Reference				
Time: 1 hour 30 minutes						<b>31493H</b>				
Calculator (optional).									Total Marks	
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### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*

### Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- You may use a calculator.

### Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL questions. Write your answers in the spaces provided.

1 (a) (i) Define basal metabolic rate.

(1)

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(ii) State **one** function of adipose tissue.

(1)

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(b) (i) Outline **two** different ways the body uses negative feedback to regulate body temperature.

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(ii) Describe how the failure of homeostatic mechanisms can lead to hypothermia.

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**(Total for Question 1 = 10 marks)**

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2 (a) Explain how the nervous system controls involuntary activities in the body.

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(b) (i) State **two** symptoms of Parkinson's disease.

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(ii) Explain how Parkinson's disease causes symptoms.

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(Total for Question 2 = 10 marks)

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3 (a) Describe meiosis.

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(b) Compare foetal development in the first and third trimesters of pregnancy.

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(c) Explain the role of the ovaries in controlling the menstrual cycle.

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(d) Explain the symptoms and consequences of endometriosis.

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**(Total for Question 3 = 18 marks)**

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**QUESTION 4 BEGINS ON THE NEXT PAGE**



4 (a) One function of the pituitary gland is to control growth.

Outline **one other** function of the pituitary gland.

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(b) (i) Describe the 'flight or fight' response.

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(ii) Explain the effects of hypothyroidism.

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**(Total for Question 4 = 12 marks)**

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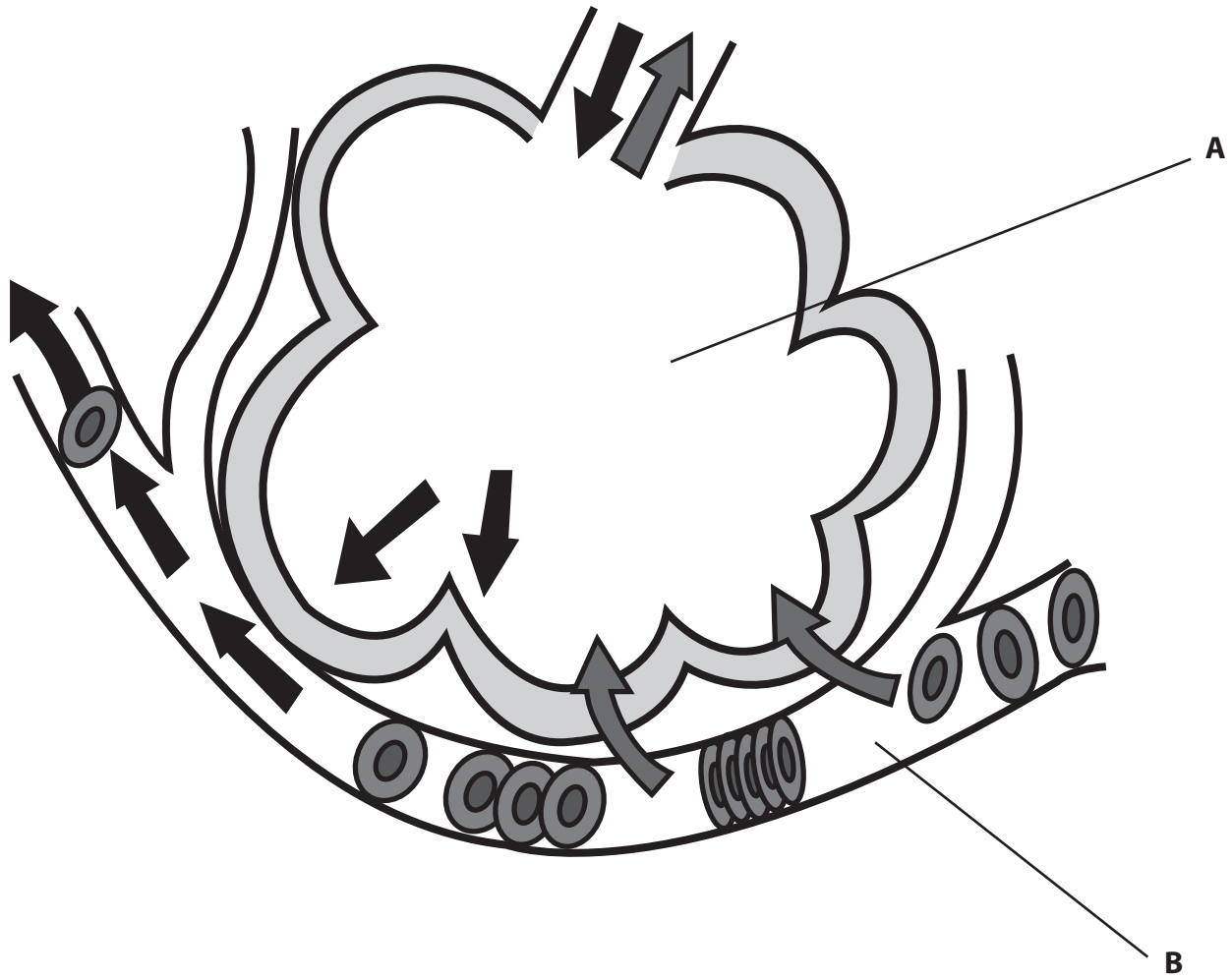
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The diagram shows gas exchange in the lungs.



5 (a) (i) Outline the role of structures A and B in the diagram.

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(ii) Describe **one** way the lungs are adapted for effective gas exchange.

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(b) Explain **two** symptoms of chronic obstructive pulmonary disease.

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P 5 1 9 5 0 R A 0 1 1 1 6

(c) Discuss how the cardiovascular system enables effective oxygenation of the tissues.

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(d) Compare aerobic and anaerobic respiration.

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**(Total for Question 5 = 22 marks)**

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### Chronic Obstructive Pulmonary Disease (COPD) and Asthma in England

Chronic Obstructive Pulmonary Disease (COPD) is the fifth biggest killer disease in the UK, killing approximately 25,000 people a year in England. Premature mortality from COPD in England was almost twice as high as the European (EU-15) average in 2008 and premature mortality for asthma was over 1.5 times higher.

Although deaths from asthma have remained at between 1000 and 1200 deaths a year since 2000, it is estimated that 90% of deaths are associated with preventable factors. Almost 40% of these deaths are in the under 75 age group. Asthma is also responsible for large numbers of hospital admissions, the majority of which are emergency admissions.

(Source: Crown copyright 2011)

- 6 (a) (i) Compare the mortality statistics for COPD and asthma in the article above. (2)

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- (ii) Explain the differences in incidences of COPD and asthma. (4)

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(b) When researching respiratory diseases, researchers use statistics to identify areas of interest.

Explain how statistics can be used for this.

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(c) Cystic fibrosis is an inherited disorder that affects the lungs and other parts of the body. The parents of a person with cystic fibrosis may not have cystic fibrosis themselves.

Explain why, including a genetic diagram in your answer.

(8)

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(Total for Question 6 = 18 marks)

TOTAL FOR PAPER = 90 MARKS

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