Paper Reference(s)   **31493H**

Pearson BTEC Level 3 Nationals Extended Diploma

Health and Social Care
Unit 3: Anatomy and Physiology for Health and Social Care

Wednesday 5 June 2019 – Morning

Time: 1 hour 30 minutes plus your additional time allowance

INSTRUCTIONS TO CANDIDATES
Write your centre number, learner registration number, surname, other names and your signature in the boxes below. Check that you have the correct question paper.

Centre No.							
Learner Registration No.							
Surname							
Other names							
Signature							
Paper Reference	3	1	4	9	3	H	

- Use BLACK ink or ball-point pen.
- Answer ALL questions.
- Answer the questions in the spaces provided
  – there may be more space than you need.

MATERIALS REQUIRED FOR EXAMINATION
Calculator (optional)

ITEMS INCLUDED WITH QUESTION PAPERS
Nil

INFORMATION FOR CANDIDATES

- 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 TO CANDIDATES

- 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.

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

1 **(a) State TWO types of muscle tissue. (2 marks)**

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2_____

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(Question continues on next page)

(Turn over)

(b) **Explain the function of TWO kinds of connective tissue other than blood. (4 marks)**

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2_____

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(Question continues on next page)

(c) Explain TWO functions of blood. (4 marks)

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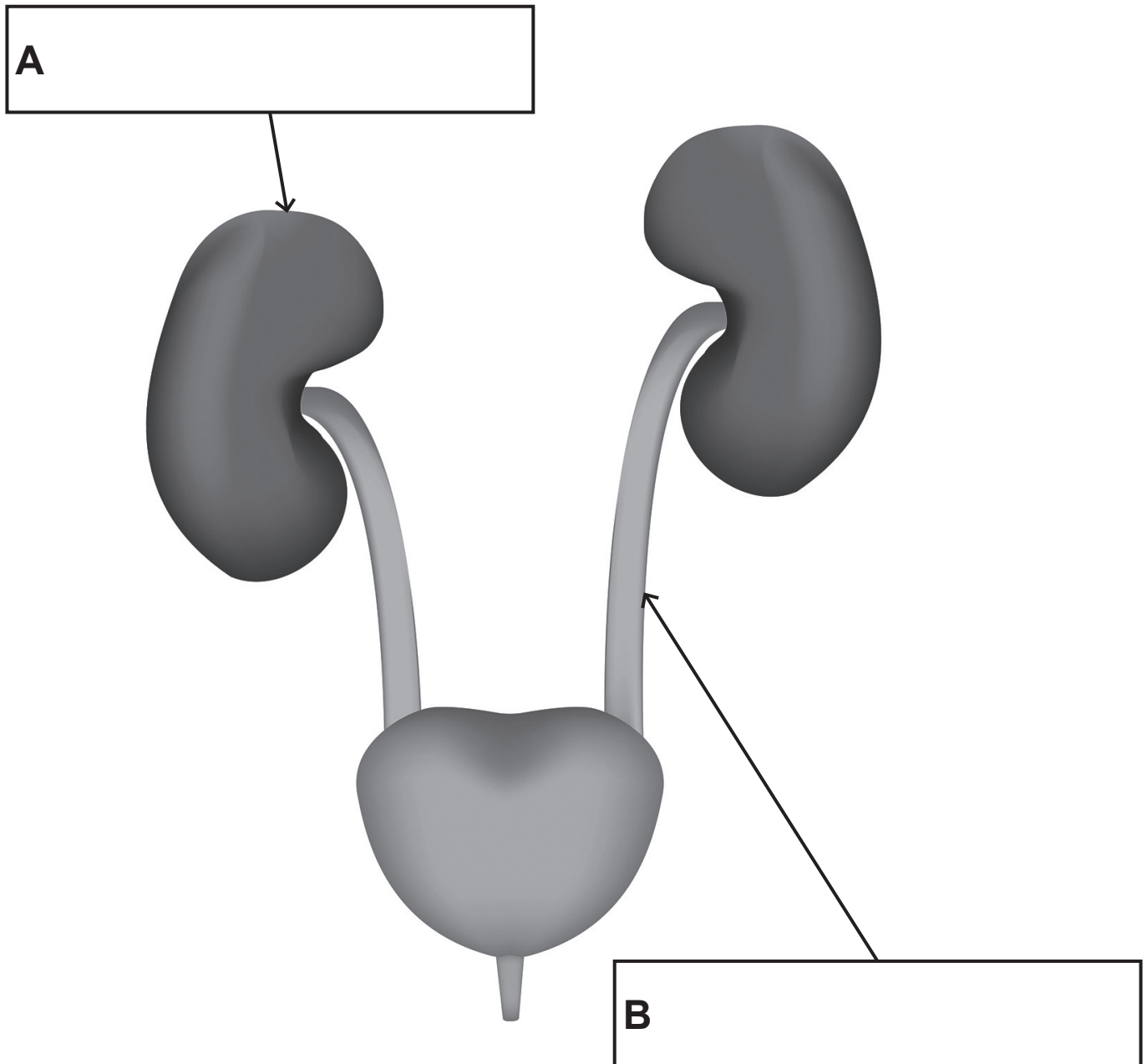**(TOTAL FOR QUESTION 1 = 10 MARKS)**

(Questions continue on next page)

The diagram below shows parts of the urinary system.

2   (a) Identify structures A and B on the diagram of the
         urinary system.   (2 marks)

A

B

(Question continues on next page)

(b) **Outline the role of the following: (4 marks)**

Urethra

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Bladder

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(Question continues on next page)

(c) Explain TWO effects of renal failure. (4 marks)

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(TOTAL FOR QUESTION 2 = 10 MARKS)

(Questions continue on next page)

(Turn over)

3 **(a)** **Outline TWO functions of the skeletal system.**
(4 marks)

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(Question continues on next page)

(b) **Compare fibrous joints and cartilaginous joints. (4 marks)**

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(Question continues on next page)

(Turn over)

Structure of a synovial joint

(Question continues on next page)

(c) **Explain TWO functions of synovial fluid in a joint.**
     (4 marks)

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(Question continues on next page)

(Turn over)

(d) **Explain the problems that a fracture of the femur may cause. (6 marks)**

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(Turn over)

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(TOTAL FOR QUESTION 3 = 18 MARKS)

(Questions continue on next page)

4   (a) State TWO roles of the pituitary gland. (2 marks)

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2_____

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(Question continues on next page)

(b) **Describe the effects of adrenaline on the body.**
(4 marks)

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(Question continues on next page)

(Turn over)

(c) Describe hypothyroidism. (6 marks)

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(Continue your answer on next page)

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(TOTAL FOR QUESTION 4 = 12 MARKS)

(Questions continue on next page)

5 **(a)** **Outline ONE role of air passages in the nose.**
(2 marks)

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(Question continues on next page)

(b) Describe how alveoli are adapted to carry out their function. (4 marks)

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(Question continues on next page)

(Turn over)

(c) Explain how the respiratory muscles allow ventilation of the lungs. (4 marks)

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(Question continues on next page)

(d) Explain the effect of smoking on body systems.
(8 marks)

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(Continue your answer on next page)

(Turn over)

(Continue your answer on next page)

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(TOTAL FOR QUESTION 5 = 18 MARKS)
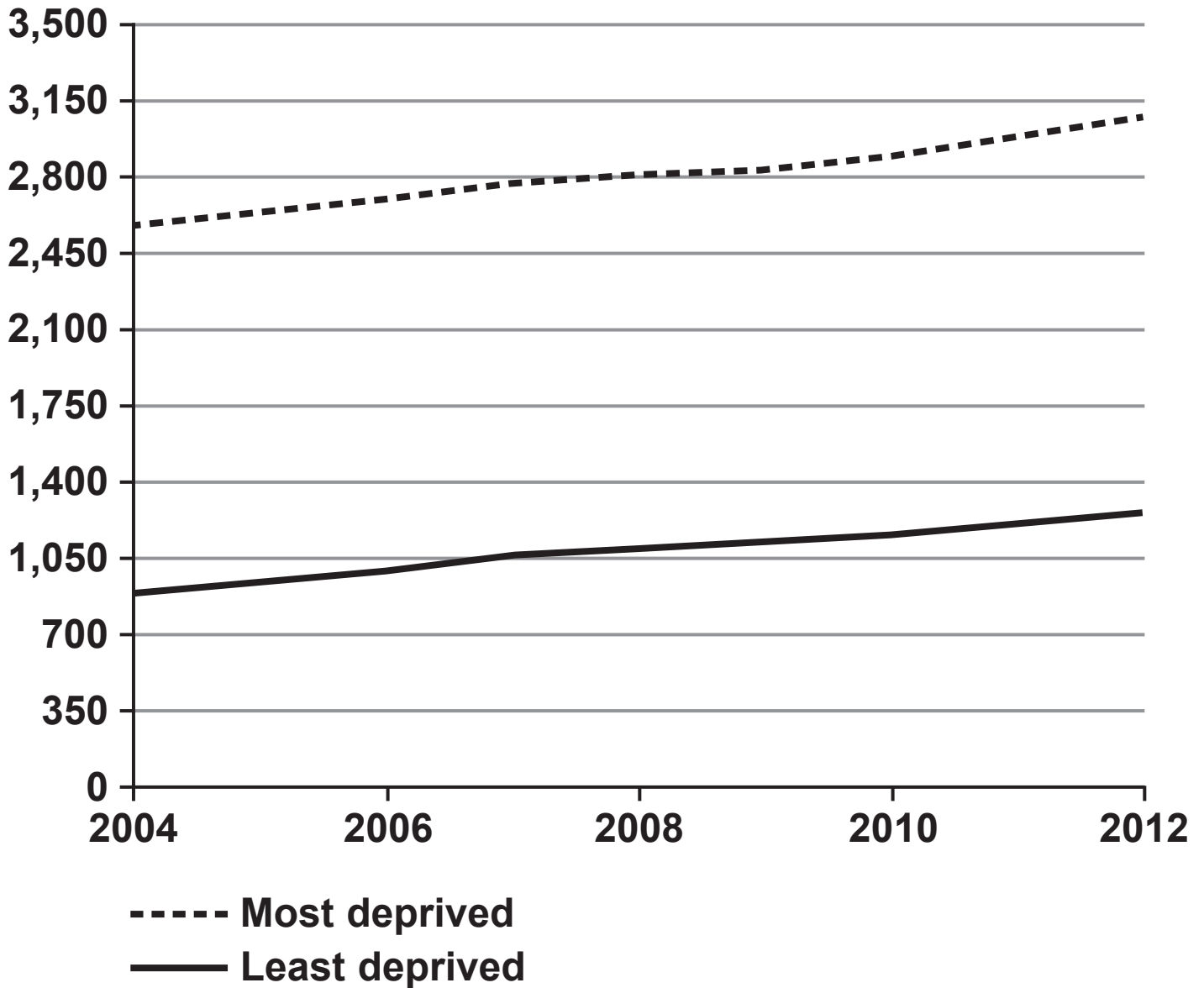
(Questions continue on next page)

6   The data for Question 6 results from a three-year epidemiological research project – 'The respiratory health of the nation' – funded by the British Lung Foundation.

The research project team used The Health Improvement Network (THIN) database records for 2004–13 to estimate prevalence and incidence data. These 12·6 million patient records from 591 GP surgeries represent a sample of approximately 5% of the population. The team then scaled up the results to estimate prevalence in the whole population.

The research project team obtained mortality data from the Office for National Statistics for England and Wales, the General Register Office for Scotland and the Northern Ireland Statistics and Research Agency.

(Question continues on next page)

Number of people per 100,000 ever diagnosed with Chronic Obstructive Pulmonary Disorder (COPD), by standard of living, 2004–12

- - - - - **Most deprived**
———— **Least deprived**

(Question continues on next page)

(a) **Compare the change in COPD rates between the most and least deprived groups in society. (4 marks)**

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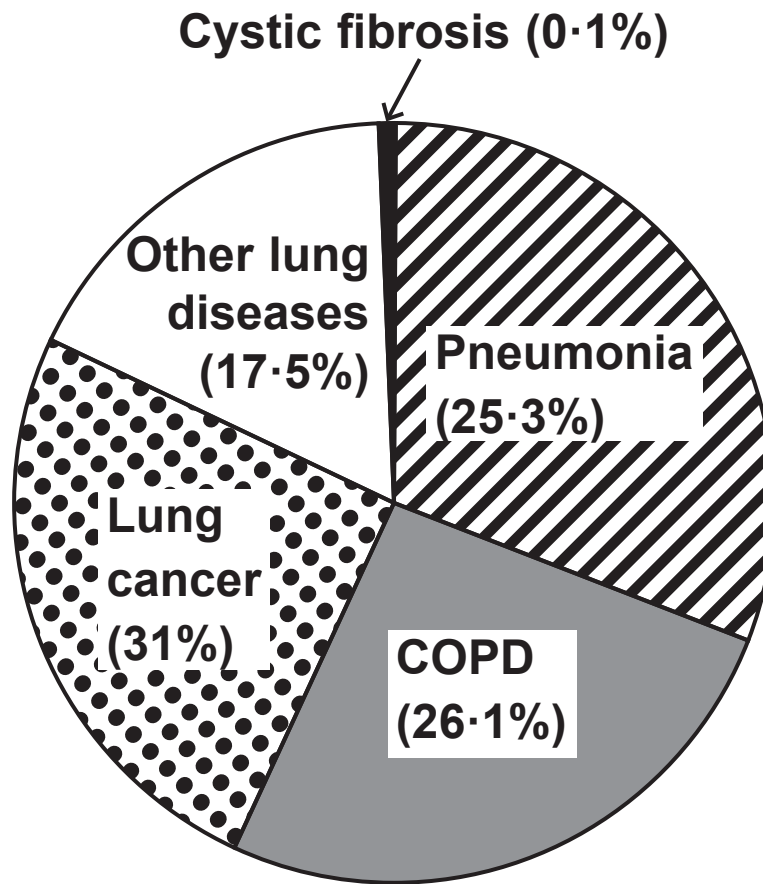_____

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(Question continues on next page)

(Turn over)

Of the 29,776 people who died from COPD in 2012:

- **2,719 were aged 15–64**
- **27,056 were aged 65 and above.**

(b) **Explain why people in the 65 and above age group are more likely to die of COPD. (4 marks)**

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(Question continues on next page)

UK deaths from COPD compared with other lung diseases, 2012

Cystic fibrosis (0·1%)

Other lung diseases (17·5%)

Pneumonia (25·3%)

Lung cancer (31%)

COPD (26·1%)

(c) Describe the effect of different lung diseases on death rates, in 2012. (6 marks)

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(Continue your answer on next page)

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(TOTAL FOR QUESTION 6 = 14 MARKS)

(Questions continue on next page)

(Turn over)

Huntington's disease is an inherited disorder that affects the nervous system.

7 **What is the probability of a child with one parent who has Huntington's disease, being a sufferer themselves?**

Include a genetic diagram in your answer. (8 marks)

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(Continue your answer on next page)

(Turn over)

(Continue your answer on next page)

(Turn over)

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(TOTAL FOR QUESTION 7 = 8 MARKS)

TOTAL FOR PAPER = 90 MARKS
END