

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.**

(Continued on next page)

(Turn over)

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)**

1 _____

2 _____

(Question continues on next page)

(Turn over)

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

1 _____

(Continue your answer on next page)

2

(Question continues on next page)

(Turn over)

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

1 _____

(Continue your answer on next page)

(Turn over)

2 _____

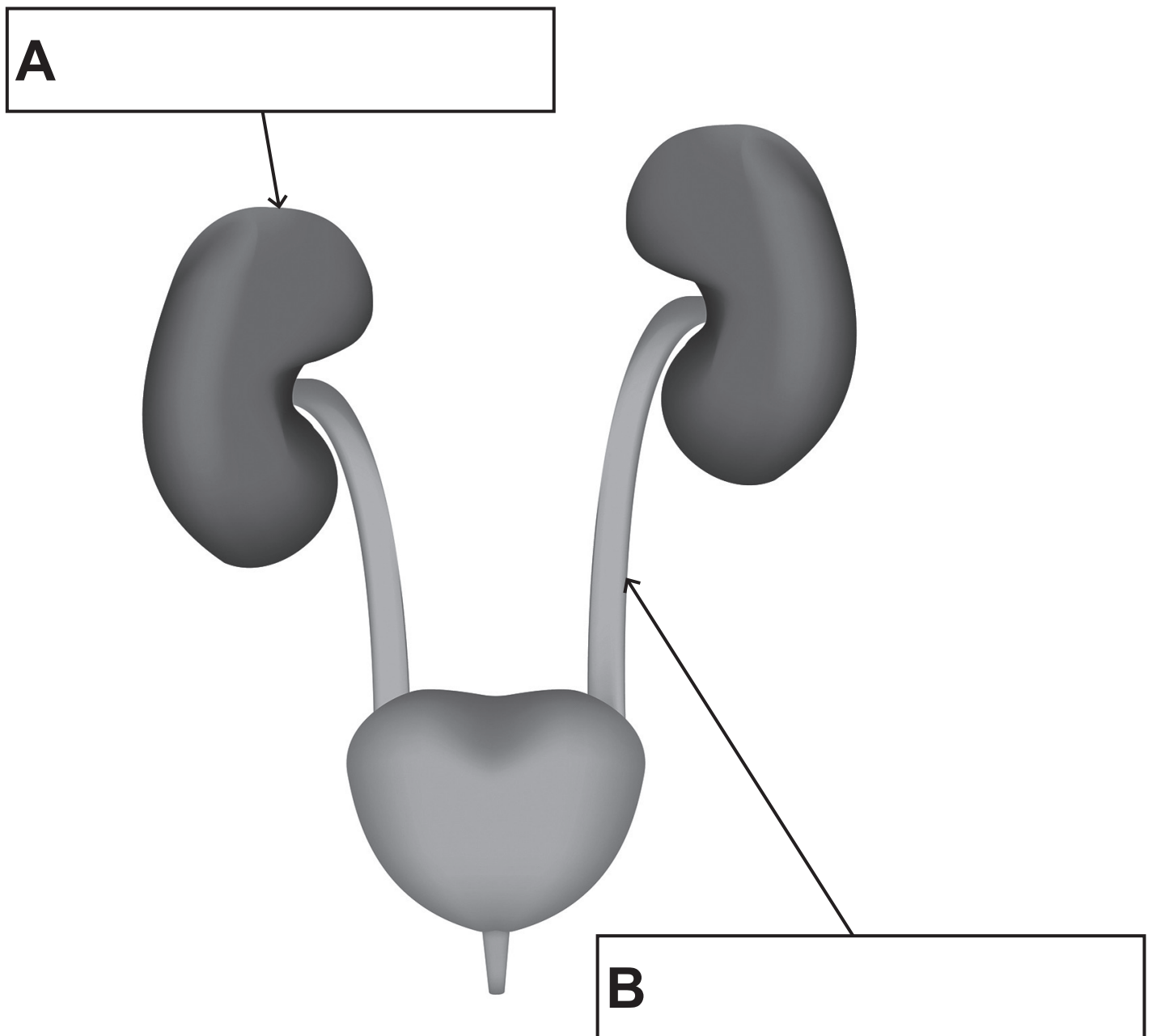
(Total for Question 1 = 10 marks)

(Questions continue on next page)

(Turn over)

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)



(Question continues on next page)

(Turn over)

10

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

Urethra

(Continue your answer on next page)

(Turn over)

Bladder

(Question continues on next page)

(Turn over)

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

1 _____

(Continue your answer on next page)

2 _____

(Total for Question 2 = 10 marks)

(Questions continue on next page)

(Turn over)

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

1 _____

(Continue your answer on next page)

(Turn over)

2

(Question continues on next page)

(Turn over)

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

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(Turn over)

17



Structure of a synovial joint

(Question continues on next page)

(Turn over)

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

1 _____

(Continue your answer on next page)

(Turn over)

2 _____

(Question continues on next page)

(Turn over)

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

(Continue your answer on next page)
(Turn over)

(Total for Question 3 = 18 marks)

(Questions continue on next page)

(Turn over)

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

1 _____

2 _____

(Question continues on next page)

(Turn over)

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

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(Turn over)

**(c) Describe hypothyroidism.
(6 marks)**

(Continue your answer on next page)

(Turn over)

(Total for Question 4 = 12 marks)

(Questions continue on next page)

(Turn over)

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

(Question continues on next page)

(Turn over)

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

(Question continues on next page)
(Turn over)

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

(Question continues on next page)
(Turn over)

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

(Continue your answer on next page)

(Turn over)

(Turn over)

(Questions continue on next page)
(Turn over)

- 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.**

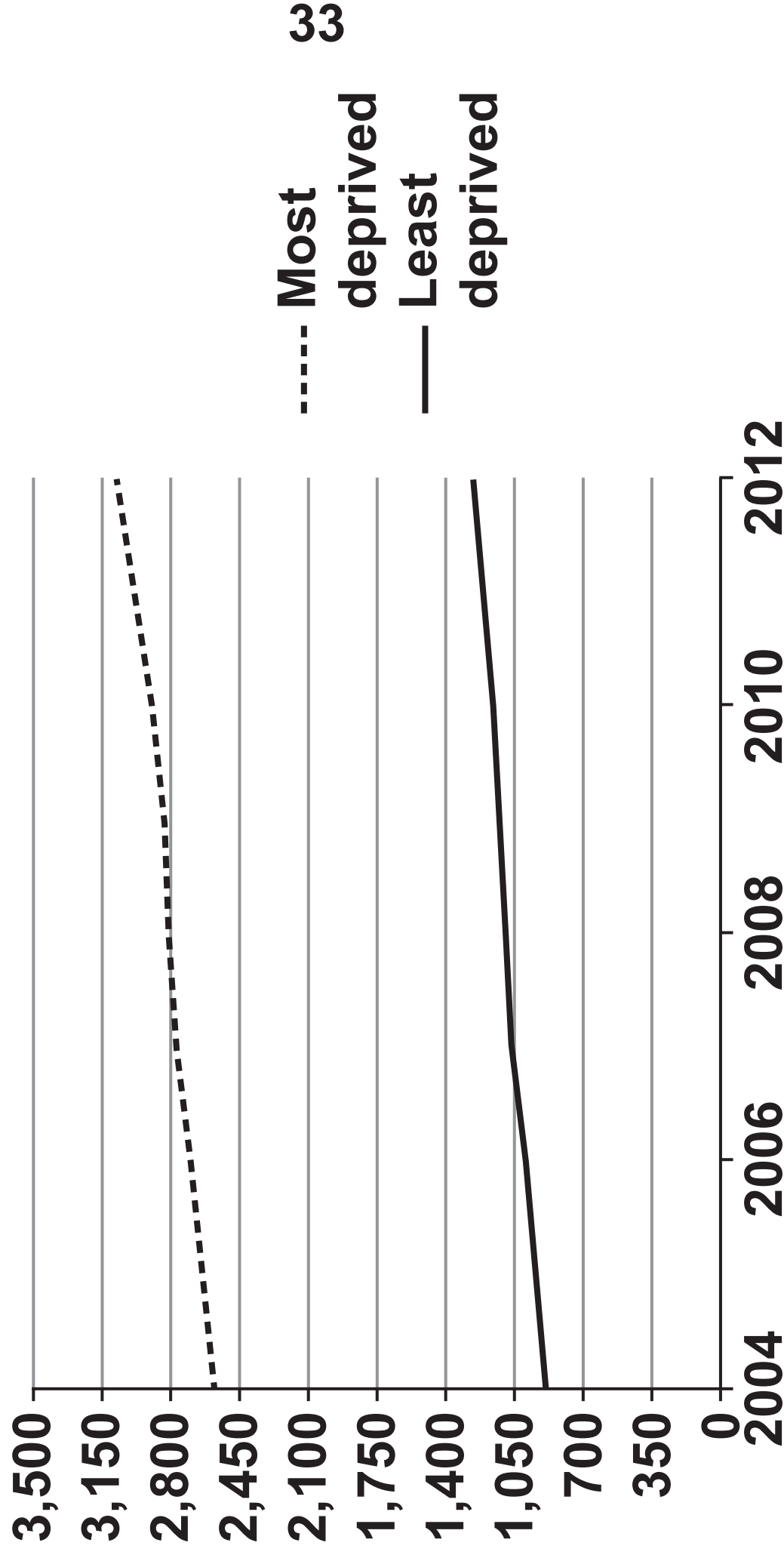
The research project team used The Health Improvement Network (THIN) database records for 2004–13 to estimate prevalence and incidence data. These 12·6 million patient records from 591 GP surgeries represent a sample of approximately 5% of the population. The team then scaled up the results to estimate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

(Turn over)

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



(Question continues on next page)

(Turn over)

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

(Continue your answer on next page)

(Turn over)

(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)

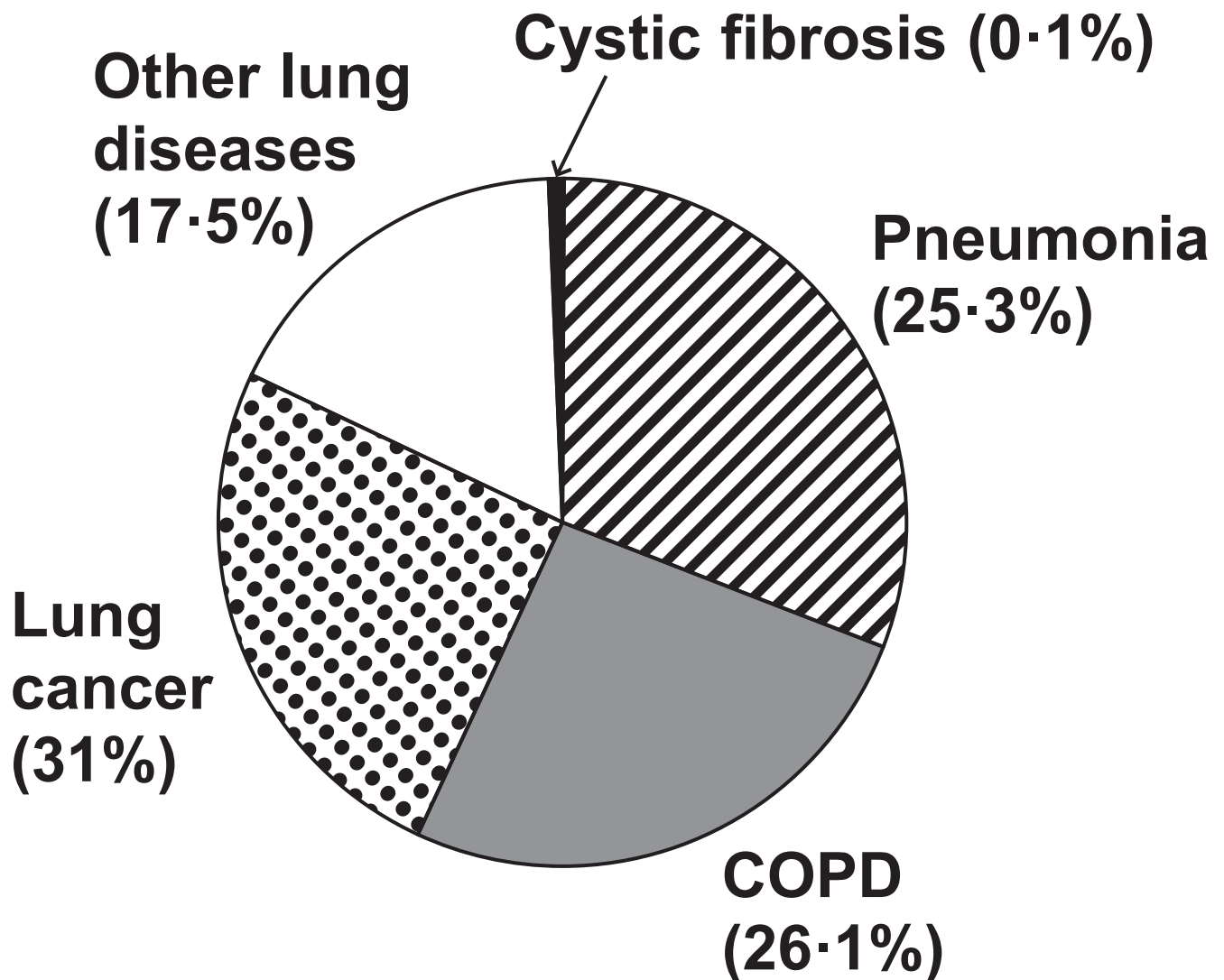
(Continue your answer on next page)

(Turn over)

(Question continues on next page)

(Turn over)

UK deaths from COPD compared with other lung diseases, 2012



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(Turn over)

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

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(Turn over)

(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)

(Continue your answer on next page)

(Turn over)

(Continue your answer on next page)

(Turn over)

1