

General Certificate of Education
January 2003
Advanced Subsidiary Examination



GENERAL STUDIES (SPECIFICATION B)
Unit 3 Space

GSB3

Monday 20 January 2003 Afternoon Session

In addition to this paper you will require:

- an 8-page answer book;
- graph paper;
- a calculator;
- drawing instruments.

Time allowed: 1 hour 15 minutes

Instructions

- Use blue or black ink or ball-point pen.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. The *Paper Reference* is GSB3.
- Answer **all** questions.
- Do all rough work in the your answer book. Cross through any work you do not want marked.

Information

- The maximum mark for this paper is 60.
- Mark allocations are shown in brackets.

Advice

- You will be assessed on your ability to:
 - select and use a form and style of writing appropriate to purpose and complex subject matter;
 - organise relevant information clearly and coherently, using specialist vocabulary when appropriate;
 - ensure text is legible, and spelling, grammar and punctuation are accurate, so that meaning is clear.

Answer questions 1 and 2

1

Total for this question: 30 Marks

Study the tables on pages 3 and 4. **Table 1** shows the percentage of estimated emissions of methane and nitrous oxide gases, listed according to their source in the UK in 2001. **Table 2** shows the estimated emissions of carbon dioxide gas, also by source, in the UK in 2001.

Having studied the tables, answer **all** the following questions:

- (a) Using **Table 1** construct a bar chart showing the contribution of each source (as a percentage) to the total estimated emissions of methane for 2001 in the UK. *(4 marks)*
- (b) (i) The total mass of nitrous oxide emissions in the UK in 2001 was 181 thousand tonnes. Using the percentages shown in **Table 1** calculate the mass of nitrous oxide emitted by production processes. *(2 marks)*
- (ii) Using **Table 2** calculate the percentage of the total estimated emissions of carbon dioxide contributed by power stations. *(2 marks)*
- (c) Give reasons for the differences between the figures for Road Transport and Railways (**Table 2**). *(4 marks)*
- (d) The target, agreed in Kyoto, for the emission of greenhouse gases is a 5% reduction on 2001 levels. This target should be reached by 2012. Using the tables and your own knowledge, how far is this a realistic target? *(8 marks)*
- (e) We know that emissions of greenhouse gases are affecting the global climate, yet we are doing little to reduce these emissions. How far do you consider this to be a *moral* issue? *(10 marks)*

ESTIMATED EMISSIONS OF METHANE BY MAIN SOURCE CATEGORY (UK, 2001)

SOURCE	
Landfill + waste disposal	30%
Animal wastes	38%
Coal-mines	12%
Gas leakage	15%
Offshore oil + gas	2%
Transport + domestic	3%

ESTIMATED EMISSIONS OF NITROUS OXIDE BY MAIN SOURCE CATEGORY (UK, 2001)

SOURCE	
Production processes	11%
Power stations	4%
Industrial combustion	1%
Non-livestock agriculture	63%
Animal wastes + waste disposal	9%
Transport	12%

Table 1

ESTIMATED EMISSIONS OF CARBON DIOXIDE (UK, 2001)

SOURCE	THOUSANDS OF TONNES (Expressed as mass of carbon emitted)
Power stations	38 000
Domestic	23 200
Commercial, public and agricultural combustion	8 300
Other industrial combustion	16 800
Refineries	5 000
Iron and steel	6 200
Combustion in fuel extraction	5 900
Road transport	31 200
Off-road sources	1 600
Military	900
Extraction and distribution of fossil fuels	200
Railways	400
Total	137 700

Table 2

2

Total for this question: 30 Marks

Study the two tables opposite. **Table 3** shows the number of out-of-town developments in the UK from 1989 to 1999. **Table 4** is a graph showing the life span trend of small businesses, reported in July 1999.

Having studied the tables, answer **all** the following questions:

- (a) (i) Using **Table 3** construct a line graph showing the number of out-of-town developments for the years 1992 - 1997 inclusive. *(4 marks)*
- (ii) Give reasons for the difference between the figures for the years 1989 and 1992 (**Table 3**). *(4 marks)*
- (b) (i) Using **Table 3** what was the percentage decrease of developments between 1989 and 1999? *(2 marks)*
- (ii) Using **Table 3** what percentage of the total number of developments shown in the table were completed in 1993? *(2 marks)*
- (c) Using **Table 4** and your own knowledge what deductions might be made about the trend shown in the graph? *(8 marks)*
- (d) “Out-of-town business developments are having a damaging effect on town-centre businesses.”
To what extent is this a valid assertion? *(10 marks)*

OUT OF TOWN DEVELOPMENTS (UK, 1989 - 1999)

Number of shopping developments, retail warehouse parks and factory outlet centres (over 50,000 square feet) completed each year

Year	Number of Developments
1989	74
1990	46
1991	13
1992	10
1993	30
1994	43
1995	39
1996	52
1997	46
1998	42
1999	39

Table 3

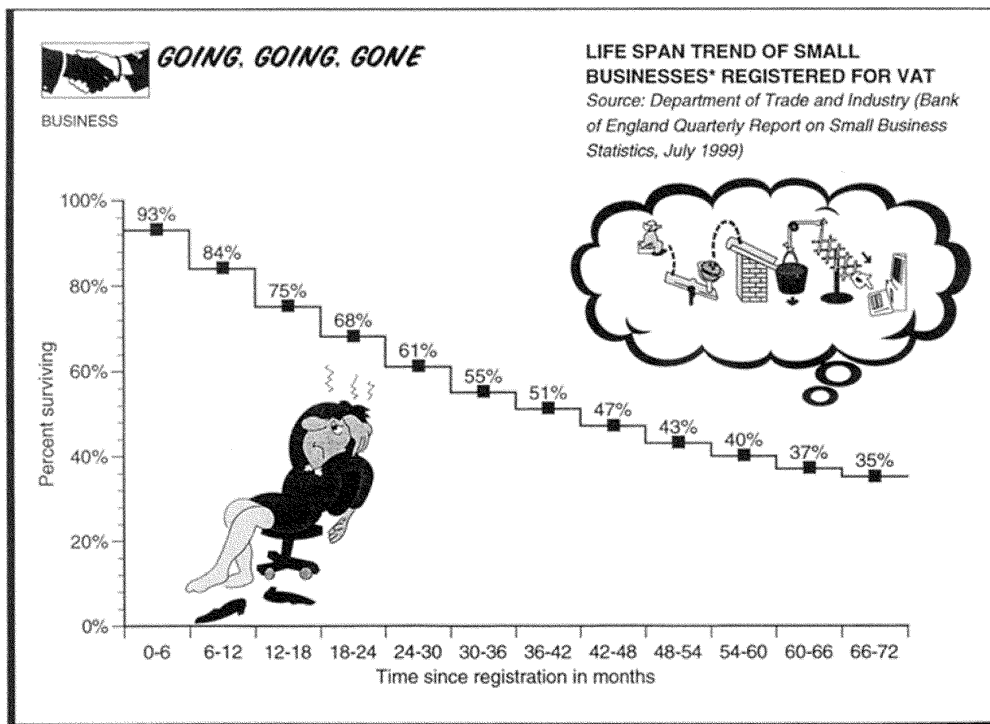


Table 4