Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						5	6	2	7	/	3	B	Signature	

Paper Reference(s)

5627/3B

Edexcel GCSE

Biology B (1529)

(Modules 13 and 14)

Paper 3B

Foundation Tier

Friday 15 June 2007 – Morning

Time: 30 minutes

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
1	
2	
3	
4	
5	
6	
7	
Total	

Materials required for examination
Nil

Items included with question papers
Nil

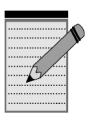
Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initial(s) and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
Show all stages in any calculations and state the units. Calculators may be used.
Include diagrams in your answers where these are helpful.
Some questions must be answered with a cross in a box (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 7 questions in this question paper. The total mark for this paper is 30.
There are 8 pages in this question paper. Any blank pages are indicated.

Advice to Candidates



This symbol shows where the quality of your written answer will also be assessed.

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Turn over

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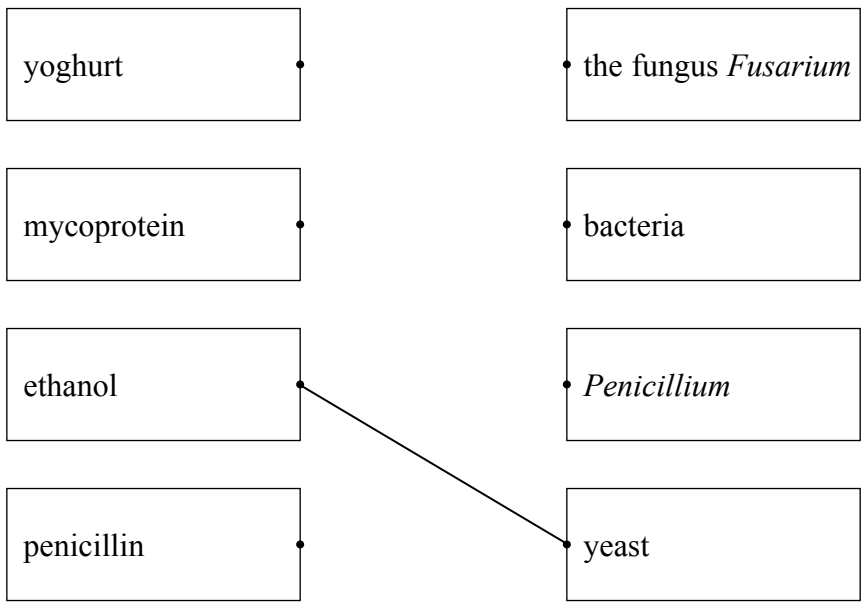
Leave blank

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

1. Draw a straight line from each product to the organism that makes it.
One has been done for you.



Q1

(Total 3 marks)

2. Choose words from the box to complete the following sentences.

air	**bottled**	**food**	**pathogens**	**poisonous**	**treated**

(a) Microorganisms that cause disease are called .....
(1)

(b) The influenza virus is one example of a microorganism that causes disease.

The influenza virus is mainly spread through .....
(1)

(c) Water can spread the bacteria that cause cholera so it is important that water is

..... to make it safe to drink.
(1)

Q2

(Total 3 marks)

Leave blank

3. Dolly the sheep was the first cloned mammal.

(a) Mark a cross (☒) next to the correct word to complete each sentence.

(i) Dolly's DNA is **different** ☒ **identical** ☒ **superior** ☒ to the sheep from which she was cloned.

(1)

(ii) When producing a clone, the **cytoplasm** ☒ **membrane** ☒ **nucleus** ☒ of an egg cell is replaced.

(1)

(b) Some scientists are researching cloning using humans.

(i) Suggest an advantage of cloning using humans.

.....

.....

(1)

(ii) Explain why some people may not agree with cloning using humans.

.....

.....

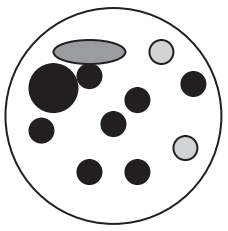
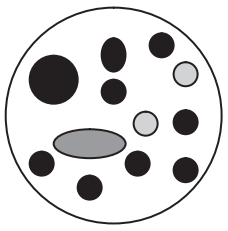
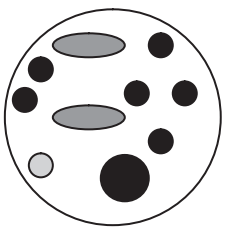
(1) **Q3**

(Total 4 marks)

Leave blank

4. Some students did an investigation to find the effect of pasteurisation on milk.
They heated five samples of milk to different temperatures for six minutes. The students then spread a drop of milk from each sample on to five different sterile agar plates which were then incubated.
The results are shown in the table.

(a) Complete the table by counting the number of colonies growing on each agar plate.
One has been done for you.

temperature, to which milk was heated (°C)	**diagram of agar plate after incubation (each shaded area represents one bacterial colony)**	**number of colonies**
40		11
50		
60		
70		
80		

(1)

Leave blank

(b) (i) Suggest the lowest temperature which killed a significant number of bacteria.

..... °C

(1)

(ii) Suggest a reason why using the number of colonies grown in this investigation may not be a reliable way to test the effectiveness of pasteurisation.

.....

.....

(1)

(c) State the temperature and time used in the 'flash process' for milk pasteurisation.

temperature …… °C

(1)

time …… s

(1) **Q4**

(Total 5 marks)

Leave blank

5. Read this account.

> One morning Mrs Jones bought a frozen chicken. She put the frozen chicken on the kitchen table to defrost for one hour. She then cooked the chicken for lunch. She cooked the chicken until the skin was brown then left it to cool by an open window.
> The Jones family ate their chicken salad for lunch. They said that the chicken was very juicy.
> The next day all the family were sick.

(a) Suggest the name of a micro-organism that may have caused the family to become sick.

.....

(1)

(b) Some of Mrs Jones' actions may have caused the family to be sick.
Explain how two of these actions caused sickness.

Action 1 .....

.....

.....

(2)

Action 2 .....

.....

.....

(2) **Q5**

(Total 5 marks)

Leave blank

6. Soy sauce is made in two stages.
In stage 1, the fungus *Aspergillus* is used to ferment mashed up soya beans and roasted wheat.
In stage 2, yeasts and the bacterium *Lactobacillus* are used to ferment the mixture again before it is filtered, pasteurised and bottled.

(a) Soya beans have a high protein content.
Describe the features of the fungus *Aspergillus* which make it suited for stage 1.

.....

.....

.....

.....

(2)

(b) State how the bacterium *Lactobacillus* lowers the pH in stage 2.

.....

.....

(1)

(c) Explain why the mixture is filtered in stage 2.

.....

.....

.....

.....

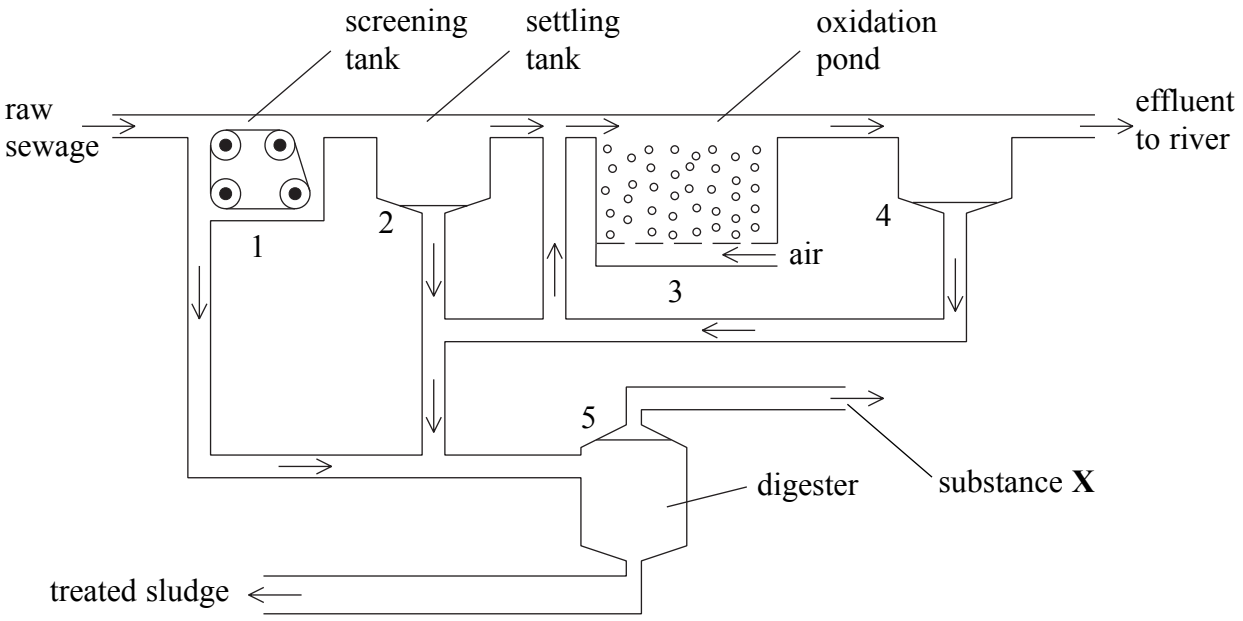
(1)

Q6

(Total 4 marks)

Leave blank

7. The diagram shows the main stages in the activated sludge treatment of sewage.



(a) Describe how the microorganisms process the sewage in stage 3.
Include the conditions required for the microorganisms to digest the sewage effectively.

.....

.....

.....

.....

.....

.....

.....

(4)

(b) (i) Name substance **X** produced in stage 5. .....

(1)

(ii) Give one use for the treated sludge produced during stage 5.

.....

.....

(1)

Q7

(Total 6 marks)

TOTAL FOR PAPER: 30 MARKS

END