

Culturing Microorganisms MS

QUESTION 1

| QUESTION | ANSWER | EXTRA INFORMATION | MARKS |
|-------------|--------|--|-------|
| 1 | | 1 mark for each line extra line from List A Action cancels the mark | 4 |
| Total Marks | | | 4 |

QUESTION 2

| QUESTION | ANSWER | EXTRA INFORMATION | MARKS |
|-------------|----------------|-------------------|-------|
| a)i) | energy | | 1 |
| a)ii) | microorganisms | | 1 |
| b)i) | 25oC | | 1 |
| b)ii) | pathogens | | 1 |
| Total marks | | | 4 |

QUESTION 3

| QUESTION | ANSWER | EXTRA INFORMATION | MARKS |
|-------------|------------------|-------------------|--------|
| a)i) | inoculating loop | | 1 |
| a)ii) | V W | either order | 1 1 |
| a)iii) | Z | | 1 |
| b) | carbohydrates | | 1 |
| Total marks | | | 5 |

QUESTION 4

| QUESTION | ANSWER | EXTRA INFORMATION | MARKS | | | | | | | | | | |
|---|--|---|-----------------|--|-----------------------------------|---|---------------------------------|--|---|--|----------------------------|---|---|
| a) | <table border="1"> <thead> <tr> <th>List A - Action</th> <th>List B - Effect</th> </tr> </thead> <tbody> <tr> <td>The agar jelly is heated at 120 °C for</td> <td>To reduce the growth of pathogens</td> </tr> <tr> <td>Make sure the temperature for growing the microorganisms is</td> <td>To kill unwanted microorganisms</td> </tr> <tr> <td>The lid of the Petri dish is held on with tape</td> <td>To prevent microorganisms from the air getting into the</td> </tr> <tr> <td></td> <td>To prevent oxygen entering</td> </tr> </tbody> </table> | List A - Action | List B - Effect | The agar jelly is heated at 120 °C for | To reduce the growth of pathogens | Make sure the temperature for growing the microorganisms is | To kill unwanted microorganisms | The lid of the Petri dish is held on with tape | To prevent microorganisms from the air getting into the | | To prevent oxygen entering | 1 mark per correct line each extra line cancels 1 mark | 3 |
| List A - Action | List B - Effect | | | | | | | | | | | | |
| The agar jelly is heated at 120 °C for | To reduce the growth of pathogens | | | | | | | | | | | | |
| Make sure the temperature for growing the microorganisms is | To kill unwanted microorganisms | | | | | | | | | | | | |
| The lid of the Petri dish is held on with tape | To prevent microorganisms from the air getting into the | | | | | | | | | | | | |
| | To prevent oxygen entering | | | | | | | | | | | | |
| b)i) | dish 2 has (colonies of) microorganisms / bacteria / (but there are none in dish 1) | allow fungi / pathogens / microbes / germs allow more microorganisms in dish 2 | 1 | | | | | | | | | | |
| b)ii) | untreated milk contains living microorganisms or microorganisms killed by UHT or no living microorganisms in UHT milk | ignore microorganisms enter from the air | 1 | | | | | | | | | | |
| b)iii) | dish 3 was not opened or it was sterilised or nothing / no milk was added | do not allow no growth of microorganisms because of lack of air / oxygen ignore microorganisms cannot enter from the air | 1 | | | | | | | | | | |
| Total marks | | | 6 | | | | | | | | | | |

QUESTION 5

| QUESTION | ANSWER | EXTRA INFORMATION | MARKS |
|----------|--|---|-------|
| a) | to kill microorganisms / to sterilise / to show that any microorganisms present at the end had appeared during the investigation | allow microbes / bacteria / fungi do not allow viruses / germs allow destroyed for kill do not allow get rid of or remove microbes | 1 |
| b)i) | B is sealed / closed / covered / has (rubber) bung or A is left open | | 1 |
| b)ii) | A has microorganisms or B has | ignore B is clear | 1 |

| | | | |
|-------------|--|--|---|
| | no microorganisms | ignore reasons given | |
| b)iii) | microorganisms enter (from the only enter air) or microorganisms if flask is left open | do not allow nothing can enter flask B | 1 |
| b)iv) | microorganisms grow / appear / present | allow bacteria / microbes / fungi | 1 |
| c) | living organisms are produced only by other living organisms | | 1 |
| Total marks | | | 6 |