Name:

Microbiology: Chapter 6

Review Outline

Physical Requirements for Growth

1. Fill in the table below regarding the temperature requirements for microbial growth (5 Questions).

|  |  |  |  |
| --- | --- | --- | --- |
| Organism Type | Optimum Growth Temperature | Grows at Temperature (Min/Max) | Miscellaneous Facts |
| Psychrophile |  |  |  |
| Psychrotroph |  |  |  |
| Mesophile |  |  |  |
| Thermophile |  |  |  |
| Hyperthermophile/Extreme Thermophile |  |  |  |

1. Fill in the table below regarding pH (3 Questions).

|  |  |
| --- | --- |
| A). What pH do most bacteria grow at? |  |
| B). What is an acidophile? |  |
| C). What is a buffer? |  |
| D). How does food preservation work? |  |

1. Fill in the table below regarding salt concentrations (2 Questions).

|  |  |  |
| --- | --- | --- |
| Organism Type | Salt Requirement/Preference | Miscellaneous Facts |
| Extreme/ Obligate Halophile |  |  |
| Facultative Halophile |  |  |

Chemical Requirements for Growth

1. Fill in the table regarding CHONPS (2 Questions).

|  |  |
| --- | --- |
| Element | Molecules it Creates |
| C |  |
| H |  |
| O |  |
| N |  |
| P |  |

1. What are superoxide free radicals?

1. Fill in the table below regarding methods of handling superoxide free radicals ( 4 Questions).

|  |  |  |
| --- | --- | --- |
| Enzyme | Reaction it performs | What Organisms contain this enzyme. |
| SOD |  |  |
| Catalase |  |  |
| Peroxidase |  |  |

1. Fill in the table below regarding oxygen consumption ( 8 Questions) .

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Organism Type | Environment(s) it can grow in. (Think O2, Candle Jar, and/or Anaerobe Box). | Contains SOD(Check the box) | Contains catalase(Check the box) | Appearance in Thioglyolate BrothExplain where you would see growth in the tube.  |
| Obligate Aerobe |  |  |  |  |
| Facultative Anaerobe |  |  |  |  |
| Microaerophile |  |  |  |  |
| Obligate Anaerobe |  |  |  |  |
| Aerotolerant Anaerobe |  |  |  |  |

Lab Skills

1. Fill in the table below regarding OFG Tubes ( 1 Question).

|  |  |  |  |
| --- | --- | --- | --- |
| Type of Organism | Appearance of Open Tube | Appearance of Oil Covered Tube | Explain the process/mechanism responsible for the appearance in the tubes.  |
| Oxidizer |  |  |  |
| Fermenter |  |  |  |
| Non-Utilizer |  |  |  |

1. Fill in the table below regarding Starch Plates ( 1 Question).

|  |  |  |
| --- | --- | --- |
| Type of Organism | Appearance of Plate (After Iodine Test) | Explain the process/mechanism responsible for the appearance in the of the iodine test.  |
| Can Use Starch  |  |  |
| Can’t Use Starch |  |  |

1. Fill in the table regarding TSI slants (4 Questions).

|  |  |  |  |
| --- | --- | --- | --- |
| Type of Organism | Appearance of Slant | Appearance of Butt | Explain the process/mechanism responsible for the appearance in the of tube.  |
| Glucose Utilizer  |  |  |  |
| Glucose and Lactose/Sucrose |  |  |  |
| Peptone Utilizer (No Sugars) |  |  |  |

1. Fill in the table regarding media types (10 Questions).

|  |  |  |  |
| --- | --- | --- | --- |
| Type of Media | How does it work? | What types of plates have we used? | Explain the mechanism of the plate(s).  |
| Selective  |  |  |  |
| Differential |  |  |  |
| 1. Compare and Contrast Complex and Chemically Defined Media ( 2 Questions).
2. Be able to analyze growth curves for organisms at varying conditions (8 Questions).
3. Know how to calculate number of cells after a given number of generations (1 Question).
4. Know how bacteria reproduce (1 Question).
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