

Microbial physiology answer sheet

Bacterial growth

1. Name four ways of bacterial growth and explain each in brief detail.
Binary fission
Multiple fission
Budding
sporulation
2. State four requirements of replication.
DNA replication finished before the separation
Correct septum positioning
Chromosomes move to opposite poles
Biosynthesis
3. Describe the separation process of the bacterial cells that have replicated.
Ftsz proteins form contractile ring and the min proteins determine correct place for septum.
4. Where is DNA replicated?
Membrane bound replication Factory
5. State three ways of counting bacteria and state the pros and cons of each.
Spectrophotometer
Counting chamber
Dilution and cell plating
6. Average doubling time = _____.
Mean generation time
7. Under _____ conditions, doubling occurs at regular intervals and results in _____ growth.
Constant, exponential

DNA in bacteria

1. Cyanobacteria has about _____ copies of its chromosome in each cell.
10
2. Bacterial nucleoid has _____ 60%, _____ 30% and _____ 10%.
DNA, RNA and protein
3. How many replication points do bacterial DNA have?
One
4. Bacterial genome takes minimum 30 minutes to replicate. But mean doubling time could be 10 minutes, How?
5. Daughter cells copy before end of transcription
6. How many different ways can DNA be read?
6
7. Do bacteria have exons?
Yes
8. State 5 things learnt from studying bacterial genomes.
Small genome is less complex organisms
Minimal set of genes for viability
Evolutionary Diversity
Organisation of genes in operons