

March 5<sup>th</sup> MCM #9

<https://goo.gl/forms/Plgv7U3vZU32c74y1>

## March 6<sup>th</sup> TT #9

**9.2** Outline the role of the phloem in the active translocation of biochemicals. [5]

- A. Phloem is living tissue;
- B. Composed of companion cells / sieve tube members;
- C. Companion cells involved in ATP production;
- D. Sucrose / amino acids / products of photosynthesis transported;
- E. Bi-directional transport;
- F. Source / leaves to sink / fruits / roots / storage organs / named storage organ;
- G. Pressure flow hypothesis / movement of water into phloem causes transport;

## March 7<sup>th</sup> WW #9

**11.1.U12** Describe the production of monoclonal antibodies and their use in diagnosis and treatment. [6]

### **A. Production:**

1. Antigens injected into animal;
2. B-cells / plasma cells producing antibody (to injected antigen) extracted from animal;
3. B-cells fused with tumour cell / melanoma;
4. Hybridoma produced;
5. Proliferation of cells / cloning;
6. Antibodies produced and purified (in fermenters);

### **B. Use in diagnosis and treatments:**

1. One example of detection described (eg detection of HCG in pregnancy test kits / detection of HIV (ELISA));
2. An example of treatment described (eg injection of monoclonal antibodies in person infected with rabies);

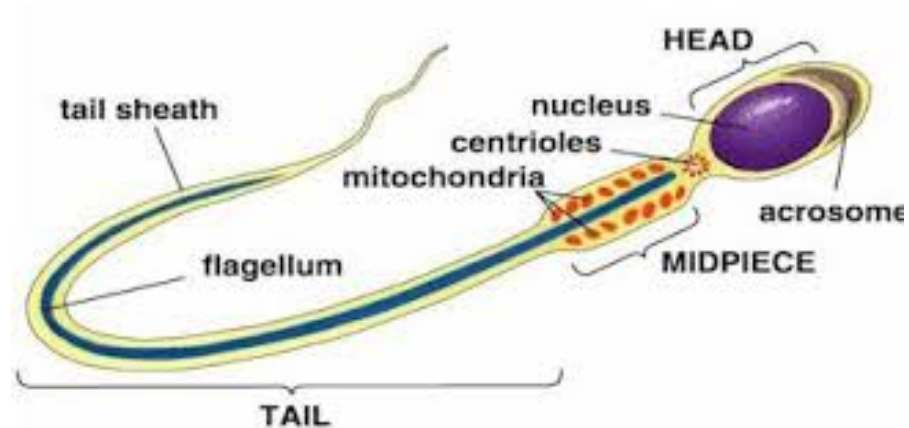
## March 9<sup>th</sup> TTh #9

Outline Darwin's theory of evolution. [5]

- A. (Darwin hypothesized) natural selection;
- B. More offspring are produced than can be supported (in the environment);
- C. Variation amongst the offspring;
- D. Competition for survival / resources / struggle for existence;
- E. Best adapted survive and reproduce;
- F. Genes are passed on to the offspring;
- G. Characteristics of a species gradually change over generations

March 8<sup>th</sup> FF #9

**11.4.U1** Draw and label a diagram of a mature sperm. [3]



- A. acrosome;
- B. head with nucleus;
- C. tail;
- D. midpiece with mitochondria;