SANGAM S K M COLLEGE-NADI

YEAR 12 BIOLOGY SOLUTION

WEEK 2

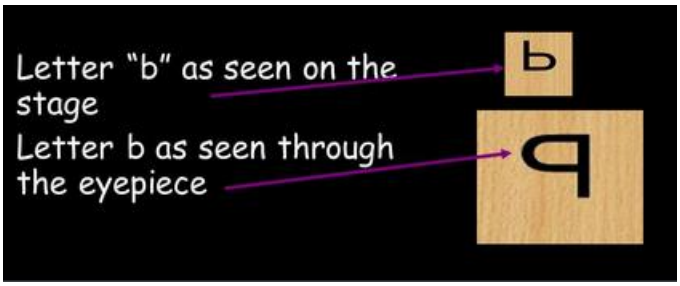
1.

(i) Cell size = diameter field of view / estimate number of cells
= 4.5mm / 4
=1.125mm x 1000
=**1125 µm**

(ii) Diameter FOV @ HP = TM of LP/TM of HP x diameter FOV @ low power
=40/400 x 4.5 mm
=0.45mm x 1000
= 450 µm

2. Magnification – **make tiny specimen appear bigger**
Resolution- **ability to differentiate 2 or more things that appear as one with naked eyes.**

3.



- **Enlarged and inverted.**

4. Cell size = diameter field of view / estimate number of cells
= 1.5 mm / 6
=0.25mm x 1000
=**250 µm**

5. TM = Eye piece x Objective lens
400x = 10x x X
X = 40x

6. 400 X = 16 cells * Use factor
40X = x cells
X cells = 160 cells

7.

(i) stage 5 - **Cleavage**
stage 6 - **Blastulation**

(ii) **Digestive tract.**

(iii) **Mitosis leads to cell division and cell growth whereas cleavage leads to cell division only.**

8.

(i) Ectoderm - **skin cell, neuron of brain, pigment cell**

(ii) Mesoderm- **cardiac muscle, skeletal muscle cell, red blood cell**

(iii) Endoderm- **lung cell, thyroid cell, digestive cell**

9.

Prokaryotes	Eukaryotes
❖ Cell wall made of muramic acid ❖ Chlorophyll contained in the chromatophores. ❖ No nucleus ❖ DNA lies in the cytoplasm ❖ Single circular chromosome + plasmid ❖ Endoplasmic reticulum absent ❖ Mitochondria absent ❖ Golgi Apparatus absent ❖ DNA replication in cytoplasm ❖ DNA replication unidirectional ❖ Transcription and translation occur simultaneously.	❖ Cell wall made of cellulose ❖ Chlorophyll contained in the chloroplast. ❖ Have membrane-bound nucleus ❖ DNA found in nucleus ❖ Many linear chromosomes ❖ Endoplasmic reticulum present ❖ Mitochondria present ❖ Golgi Apparatus present ❖ DNA replication in nucleus ❖ DNA replication bidirectional ❖ Transcription and translation occur in a sequence.

10. **-cell motility , cell shape, cell adhesion**