Microscope Lab – Portfolio of Drawings and Answer Sheet

Name: _____

Part 1. Magnification of lenses 1)_____; 2)_____; 3)_____

Part 2. Depth of Field – overlapping threads

b) Low power diaphragm setting: _____

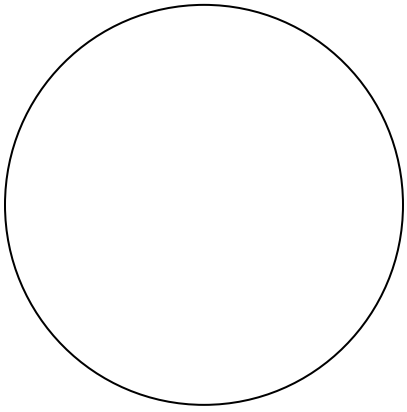
c) Medium power diaphragm setting: _____

d) High power diaphragm setting: _____

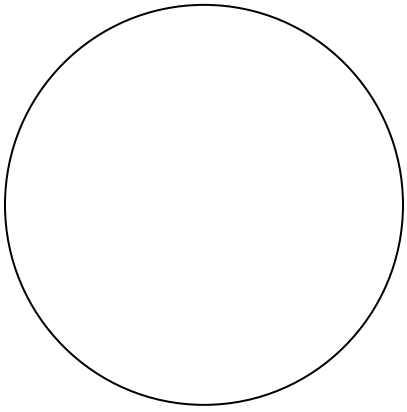
Focus at same time? e) Low - f) Med - g) High -

Order of threads (top to bottom): _____

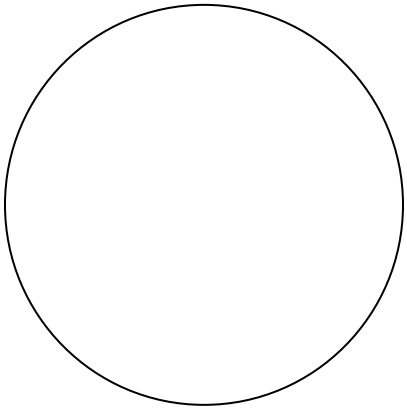
h) Intersection Drawings – Thick Threads



Low

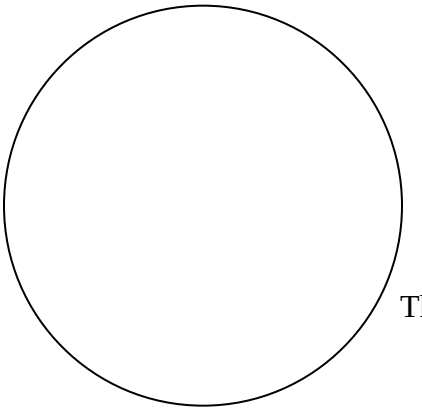


Medium



High

i) Intersection of Thin Fibers



Slide Number:

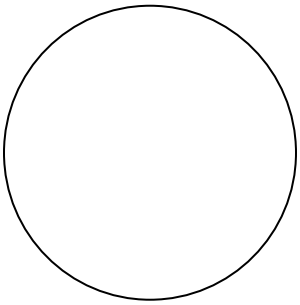
_____

Order of fibers (top to bottom):

_____

Thin fibers, High power

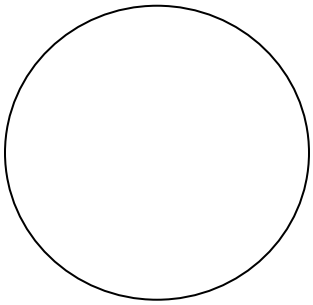
Part 3. Field of View - measurements



Low

_____mm

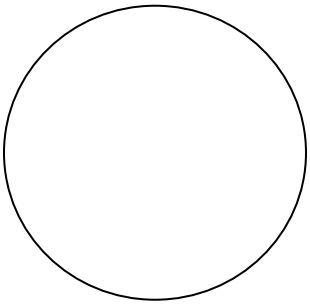
_____ μ



Medium

_____mm

_____ μ



High

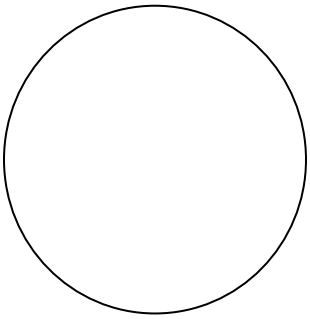
_____mm

_____ μ

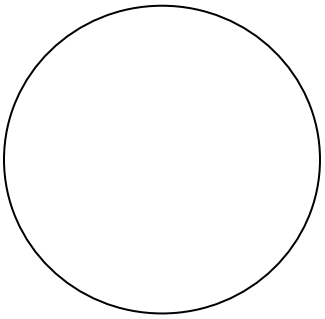
Part 4. Magnification - Microwords

Microword Slide Number _____

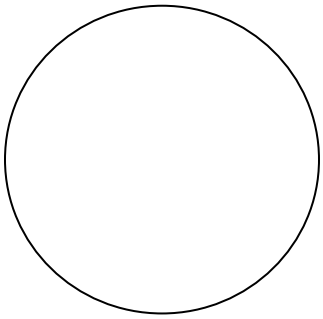
Microword: _____



Low



Medium



High

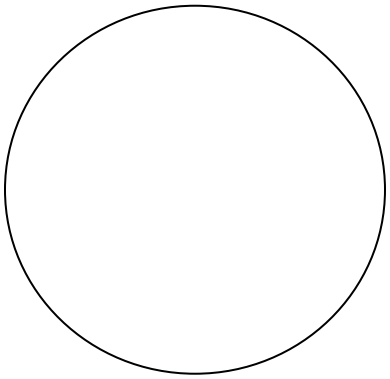
Part 5. Wet Mounts, Orientation

a) _____

b) _____

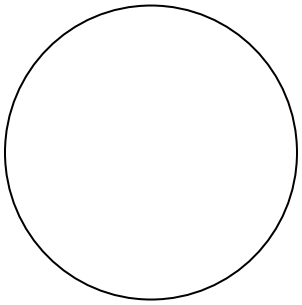
c) _____

d) letter ‘e’

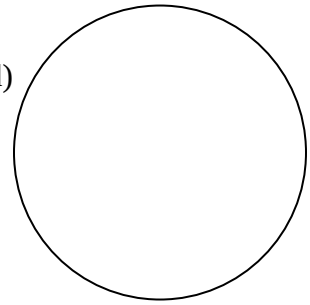


Part 6. Stains and Light Adjustments

c) What happened to starch + iodine:_____

b) 

Unstained

d) 

Stained

Part 7.

Comparison of Fields of View – Objects and Area

Lens	*# of grains end to end*	*Diameter FOV (μ)*	*Diameter of 1 grain (μ)*	**Total # of grains*
Low				
High				

* Total # of grains is found by taking [# of grains end-to-end / 2]^2

b) Comparison of diameters of grains. Are they the same? Why or why not?

c) Difference in # of objects: $\sqrt{\frac{Total\#grains\,low\,power}{Total\#grains\,high\,power}} =$ _____

Ideally, the answer above should be exactly '10'. If your answer is not, then give some reasons why your answer for the # of objects is not equal to '10'. *Hint, consider methods, counts, diameters, location of the starch grains on the slide, etc.*

Part 7, continued…

d) Difference in area:

Magnification of High Power: _____

e) $\frac{Mag.\,High\,Power\,=}{Mag.\,Low\,Power\,=}\,=$ _____

f) The answer for 'e' *Difference in area* should be the number '10', which should also be the same as the Comparison of the *Difference in # of objects* 'c'. If your answers for 'c' and 'e' are not exactly identical, explain why, giving at least two possible reasons for the discrepancy.

Part 8. True or False

Answer each of the following statements as true or false. If false, change a word or words to make it true.

_____ 1. Objects viewed under the microscope appear upside down.

_____ 2. When moving the slide towards the left, objects viewed through the microscope move left.

_____ 3. The diaphragm is used to adjust the amount of light entering the microscope.

_____ 4. All objects in different depths appear in focus at the same time while using high power.

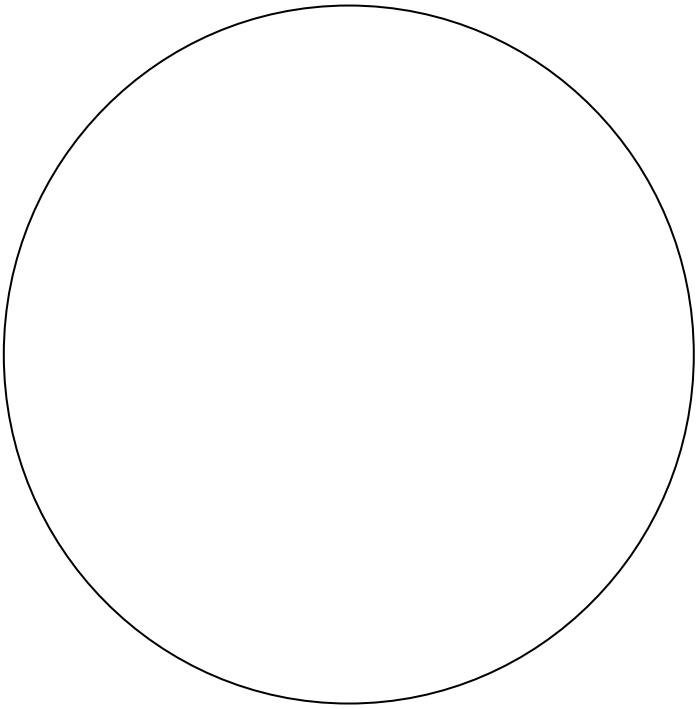
_____ 5. Stains are used to help make clear objects appear lighter under the microscope.

_____ 6. Low power shows more area than high power.

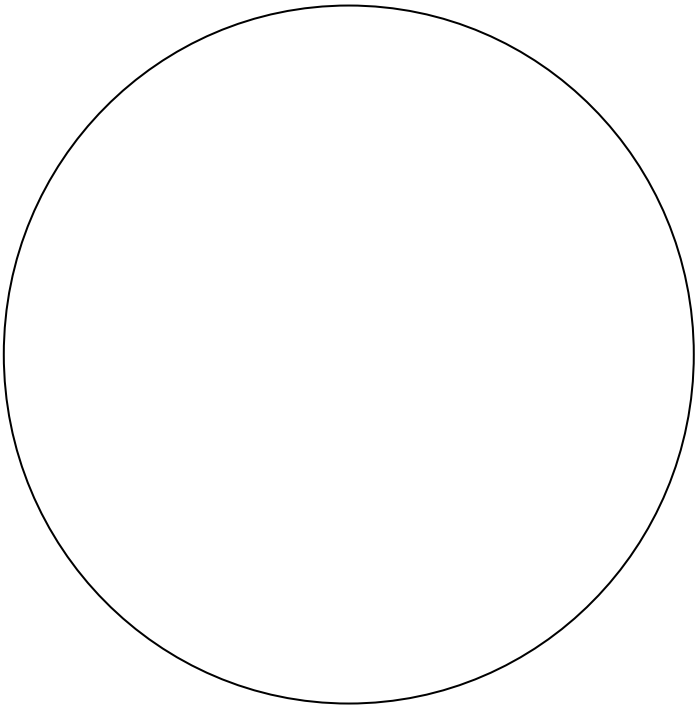
_____ 7. High power shows more detail than low power.

_____ 8. When looking at starch grains, an observer will likely see about 20 times more grains under low power than under high power.

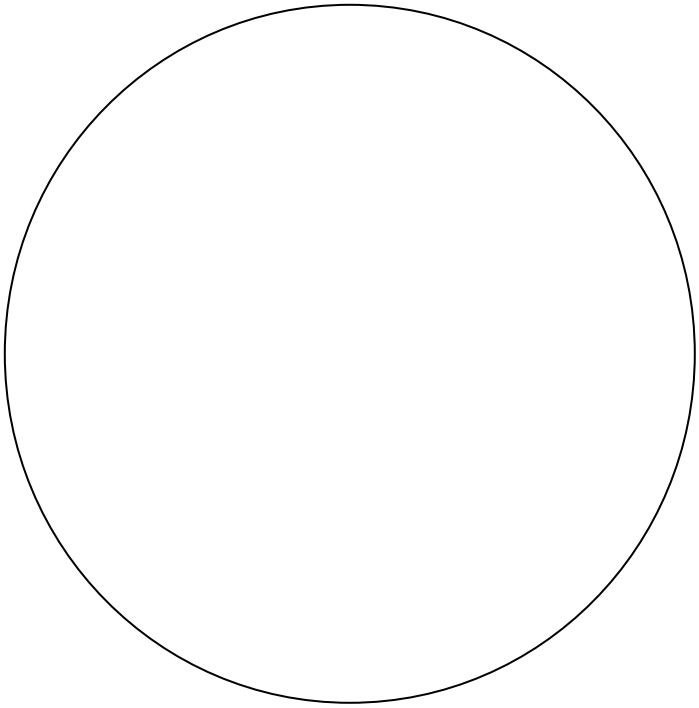
Part 9. Specimen Slides (label the organism being drawn)



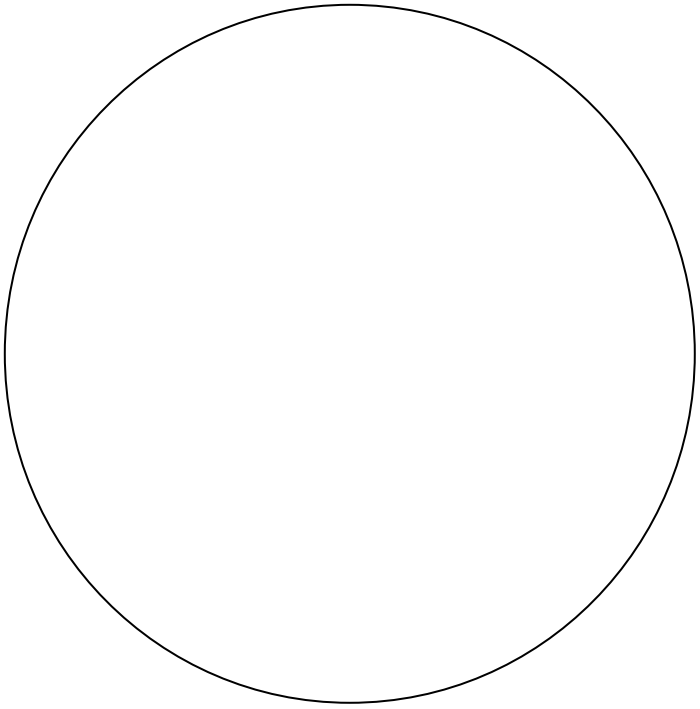
_____



_____



_____



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