

RST Quiz 4 [REDACTED]
Second Quarter
Chapter 2 & 3 Seed Analyst Training and
Chapter 2 AOSA Rules
[REDACTED]

Name _____

- 1) For lots of more than _____ bags, sample _____ bags plus at least _____ of the number of bags in the lot.
- 2) Regardless of the lot size, it is not necessary to sample more than _____ bags.
- 3) The two "working samples are called the _____ and the _____ samples.
- 4) The _____ sample is the sample on which the purity analysis is made.
- 5) The _____ sample is the sample on which the noxious-weed seed examination is made.
- 6) The weight of the purity working sample and its corresponding noxious weed seed working sample may be determined from Table 1 in the AOSA Rules by a kind of seed that is similar in size and weight and which provide approximately _____ seeds in the purity working sample.
- 7) Give the minimum weights for a composite sample to evaluate purity, germination and noxious weed examination:
 - a) Alfalfa, bromegrass, crimson or red clover
 - b) sudangrass
 - c) Tree seeds
- 8) What is the difference between a Boerner divider and a Gamet Precision divider?
- 9) Describe the steps involved in using a seed divider.

10) In a 50 gram noxious weed examination of alfalfa seed with an actual working weight of 50.05 grams, 6 dodder seed were found. Calculate the number of dodder seeds per pound:

11) In a 0.25 gram purity examination of bentgrass, with an actual working weight of 0.2567 grams, 6 windgrass florets were found. Calculate the number of windgrass florets per ounce.

12) What is the approximate number of seeds in a gram of Phleum pratense?

13) What is the minimum weight for analysis in the following mixtures:

<u>Crop</u>	<u>Percent</u>	<u>Weight (gr)</u>
a) Red Fescue	14.60	3
b) Ky. Bluegrass	40.54	1
c) Orchardgrass	30.05	3
d) Ryegrass	5.16	5

a) Ky. Bluegrass	30.46	1
b) Orchardgrass	25.03	3
c) Bentgrass	10.10	.25

14) Match the following - items can be used more than once:

pure seed
weed seed
inert matter

- a) Broken and unattached wings of shrub and tree seeds.
- b) Immature seeds (with seed coat) that are cracked or otherwise damaged
- c) Immature florets of quackgrass in which the caryopses are less than 1/3 the length of the palea.
- d) Seed units with nematode galls or fungus bodies and spongy or corky caryopses which are entirely enclosed within the seed unit.
- e) Allium spp. bulbets which have any part of the husk remaining and are not damaged at the basal end.
- f) Non-legume seeds that are broken but are larger than one half the original size.
- g) Dodder seeds that are devoid of embryos, ashy gray to creamy white in color.
- h) Seed that have started to germinate.
- i) Separated cotyledons of legumes, irrespective of whether or not the radicle-plumule axis and/or more than half the seed coat may be attached.
- j) Intact fruits w/o seeds of Asteraceae.
- k) Soil particles, sand or stones.
- l) Capsules or clusters of Juncus spp.
- m) Allium spp. bulbets which are devoid of a husk, are not damaged at the basal end and are retained on a 1/13" round hole sieve.
- n) Seeds of legumes, crucifers and conifers with the seed coats entirely removed.
- o) Fruit portions or fragments of monogerm beets.
- p) Entire coated units regardless of whether or not they contain a seed
- q) Damaged seed (other than grasses) with over half the embryo missing

- r) Black colored Buckhorn seeds.
- s) Allium spp. bulblets that show damage to the basal end w/o a husk.
- t) Allium spp. bulblets that are devoid of a husk and pass through a 1/13' sieve.

15) Define a multiple unit:


- a)
- b)
- c)

16) True or False:

- a) The length of the awn shall be disregarded when determining the length of the fertile floret or an attached structure.
- b) Coated seed is a seed unit covered with any substance which changes the size, shape, or weight of the original seed
- c) The minimum size for samples of coated units to be submitted for a purity analysis is 2500 units
- d) The purity analysis of coated seed is separated into the following: pure seed coat, uncoated crop seed; inert matter, uncoated weed seed.
- e) When doing a noxious weed exam, it is not necessary to determine the individual number of seeds on capsules of dodder, berries of nightshade or fruits of other noxious weed that contain more than one seed.
- f) In the chemical test to distinguish sweetclover, seed coats of yellow sweetclover will stain brown - black.
- g) Cultivar determination can be based on the seedling, growing plant and mature characteristics.

- h) Chemical tests for cultivar identification can be done on the submitted sample prior to a purity analysis
- i) High peroxidase activity is indicated by a colorless solution.
- j) Oat seeds are considered partially fluorescent or fluorescent if the lemma or palea fluoresce or appear light in color under UV light.
- k) In determining mixtures of yellow and white sweetclover, at least 600 seeds should be used.
- l) A fluorescence test shall be made on all samples of ryegrass for which the percentage of perennial ryegrass and/or Italian ryegrass is to be reported.

17) Give the scientific names for the following:

- a) 
- b) Crown vetch
- c) Hairy vetch
- d) Button clover
- e) Suckling clover
- f) Berseem clover
- g) Alsike clover
- h) Korean lespedeza
- i) Rose clover

18) Calculate the following:

a) Percent yellow and white sweetclover

Pure Melilotus ssp. = 98.76%

Number of seed tested = 400

Number of seed staining dark brown or black = 32

b) Calculate % Annual and Perennial ryegrass

Label: Annual Ryegrass	58.41%
Creeping Red Fescue.....	18.63%
Variety A Perennial Ryegrass.....	9.78%
Variety B Perennial Ryegrass.....	9.56%

Lab Tests: Test Fluorescence = 81.91%

Pure Ryegrass = 78.06%

AOSCA List: Variety A Perennial Ryegrass VFI = 0.00%

Variety B Perennial Ryegrass VFI = 2.50%

19) Match the following:

- | | |
|---------------------|---|
| a) Rachis | 1) Has sessile flowers attached directly to the main axis. |
| b) Inflorescence | 2) Protective sheath over the radicle |
| c) Umbel | 3) A bristle-like tip which projects from the lemma |
| d) Panicle | 4) Flowers on pedicels originating from one point |
| e) Spike | 5) Part of the embryonic axis below attachment of the cotyledons and above the radicle which develops into the stem |
| f) Spiklet | 6) Embryonic leaves enclosed by the coleoptile |
| g) Glume | 7) Female reproductive structure |
| h) Awn | 8) Funiculus at flowering |
| i) Callus | 9) The main axis of the flower or leaf . |
| j) Lemma | 10) Flowers which have only the male or female organs present |
| k) Ovary | 11) At maturity it is the seed coat or testa |
| l) Integuments | 12) Anther and filament |
| m) Hilum | 13) The larger of the two bracts surrounding the caryopsis |
| n) Pistil | 14) At maturity it is the fruit. |
| o) Stamens | 15) Loosely arranged flowers on a branched infloescences |
| p) Imperfect flower | 16) Thickened tissue at the base of the lemma |
| q) Coleorhiza | 17) The flower structure of the plant; e.g. umbel, spike, panicle |
| r) Plumule | 18) Empty bracts at the base of the grass spiklet |
| s) Hypocotyl | 19) A flower or group of flowers. |

20) Name and describe the 4 major parts of a flower:

a)

b)

c)

d)

21) Define an incomplete flower

22) Define perfect flower

23) Define angiosperm and gymnosperm

24) Outline the general development of an ovule in an angiosperm flower.

25) Outline (in general) fertilization and seed development.