TEAM EVENT – 2012 Agronomy C.D.E.

There are four parts to this part of the competition. It is suggested that each team member complete one part of the Team Activity and if time permits team members may check other members' work. If a team has three members (or fewer), a member may complete more than one part. You will have **30 minutes** to complete this activity. Transfer all answers to the **Team Event** bubble sheet. Make sure the **Chapter Name and Team Number** is on the sheet.

Part 1: **Soybean Replant Decisions**:

1. Using Table 1, if you figure that it costs $100 per acre for replanting. At what percentage stand loss would it be profitable to replant if soybean sale price is $14/bushel? Assume the soybeans were planted at 8 seeds per foot of row.

> A. 20%   B. 30%   C. 40%   D. 50%

2. According to Table 1, would the percentage stand reduction needed to justify replanting change if there were 4 plants per foot of row versus the 8 plants per foot of row in question 1?

> A. Yes   B. No

TABLE 1

Percentage of full-yield potential for soybeans, as influenced by plant density established and stand reduction 2 to 4 weeks after planting.

	Plants per foot of row		
Stand reduction (%)	8	6	4
	Percent of yield potential		
0 (full stand)	100	97	95
10	98	96	93
20	96	93	91
30	93	90	88
40	89	86	83
50	84	81	78
60	78	75	73

The reduction in stand was achieved by random placement of 12-inch gaps within 30-inch rows and the "plants/foot of row" were without gaps or skips.

Source: University of Illinois.

TABLE 2

Effect of plant density at three stages of development on soybean yield.

	Thinning stage		
Plant density	VC[a]	V3	V6
Plants/acre		Bushels/acre[b]	
150,000 (no thinning)	45.1	45.5	45.3
125,000	44.8	46.0	45.0
100,000	45.1	48.1	44.0
75,000	44.2	44.7	41.4
50,000	41.6	38.5	33.3
1-ft gaps[c] (75,000)	43.6	43.8	40.2
2-ft gaps (75,000)	41.5	41.3	38.8

[a] VC, cotyledon stage; V3, third node stage; and V6, sixth node stage.
[b] LSD (0.05) = 2.1 bushels/acre difference between any two means.
[c] 1- and 2-foot within row gaps were applied 2–4 weeks after planting

Source: University of Minnesota.

3. According to Table 2, at V3 and V6 stages between what populations were there the largest yield losses?
> A. 50,000 – 75,000   B. 75,000-100,000 C. 100,000-125,000 D. 125,000-150,000

4. Were the losses at VC between 75,000 and 100,000 plants per acre **statistically significant** if the markets are high?
> A. Yes   B. No

5. Soybean plants can adjust for lower populations because of their ability to _____.
> A. Tiller   B. Branch   C. Reroot   D. Regerminate

6. Soybean plants will not survive if hail severs the plant below the:
> A. Cotyledon   B. Terminal bud   C. Flowers   D. Trifoliate leaves

2012 Team Event – Part 2   (Fungicide Application)

Use the Quadris label to answer the questions for this section.

7. Quadris can be used to control:
    A. Aphids
    B. Army worms
    C. Soybean cyst nematodes
    D. Northern corn leaf blight

8. How long can the active ingredient (azoxystrobin) remain in the soil?
    A. 3-4 days
    B. 2-3 weeks
    C. 3-4 weeks
    D. Several months

9. Once this product is applied, a worker should wait to enter the area for:
    A. 4 hours
    B. 1 day
    C. 4 days
    D. 1 week

10. If a Group 11 fungicide is applied to the seed, which of the following is true?
    A. None will need to be applied after emergence.
    B. Do not apply another Group 11 fungicide for 3 weeks.
    C. Wait to apply Quadris until just prior to tasseling.
    D. Quadris could be applied anytime until harvest.

11. When applying Quadris, a sprayer pump must maintain _____ psi at the nozzles.
    A. 10-15
    B. 20-25
    C. 25-30
    D. 35-40

12. A producer wants to spray two applications of Quadris at the maximum rate to control gray leaf
      spot. If the producer has 2000 acres of corn, how may gallon containers will need to be purchased?
    A. 243 gallons
    B. 485 gallons
    C. 970 gallons
    D. 2000 gallons

2012 Team Event- Part 3   (Fertilizer Needs)

You have been asked to develop a fertilizer program for a local producer. The producer plants 1200 acres of corn. All of the ground was planted to soybeans last year and 62 bushels per acre of soybeans were harvested. The producer uses a nitrogen credit of one pound of nitrogen per bushel of soybeans produced and uses 1.2 pounds of nitrogen needed per bushel of his yield goal to determine needs. Based on soil productivity a yield goal of 190 bushels per acre seems reasonable. A soil test was taken and came back with needs of 0-40-100 per acre. (Numbers may be rounded)

13. How much muriate ofpotash (0-0-60) will need to be applied per acre?
     A. 66 pounds
     B. 125 pounds
     C. 167 pounds
     D. 197 pounds

14. The local co-op has diammonium phosphate (18-46-0). How much will need to be applied per acre
     meet the phosphorus needs?
     A. 87 pounds
     B. 115 pounds
     C. 218 pounds
     D. 460 pounds

15. If anhydrous ammonia is used, how many pounds will need to be applied per acre?
     A. 82 pounds
     B. 122 pounds
     C. 203 pounds
     D. 278 pounds

16. If urea (46%) were used to meet total nitrogen, how much would be needed per acre?
     A. 77 pounds
     B. 122 pounds
     C. 361 pounds
     D. 493 pounds

17. Which primary nutrient is not tested for in a soil lab?
     A. Nitrogen
     B. Phosphorus
     C. Potassium
     D. All of these are tested for in soil labs

18.   Which nutrient is noted for leaching in the soil?
     A. Nitrogen
     B. Phosphorus
     C. Potassium
     D. All of these

Team event-Part 4 (Seeding)

A producer asked you to determine her seed needs. The producer raises 80 acres of oats, 600 acres of soybeans, and 1200 acres of corn.

19. If she wishes to seed 96 pounds of PLS per acre of oats, determine the actual seeding rate/acre if oat seed has a germination rate of 96% and is 90% pure.
     A. 82.9 pounds per acre
     B. 92.16 pounds per acre
     C. 100 pounds per acre
     D. 111.1 pounds per acre

20. Corn is sold in 80,000 kernel units. How many bags should be ordered to plant the corn if a planting rate/acre of 36,000 is used?
     A. 264bags
     B. 540 bags
     C. 2223 bags
     D. 2667 bags

21. The producer wants to plant soybeans at 140,000 seeds per acre. There are 5 seeds per gram of soybeans and 454 grams in a pound. How many pounds of seed are needed per acre?
     A. 61.67 pounds
     B. 90.80 pounds
     C. 308.37 pounds
     D. 1541.8 pounds

22. Assume the producer wants a final stand of 36,000 plants per acre and their records indicate a seedling loss of 8 per cent. The producer should:
     A. Plant 33,120 seeds per acre.
     B. Plant 38,880 seeds.
     C. Plant 39,130 seeds.
     D. Control leaf blight.

23. Which of the three crops would suffer the most from hail damage shortly after emergence?
     A. Corn
     B. Oats
     C. Soybeans
     D. All three would suffer the same yield loss

24. Which of these crops would be most likely to tiller?
     A. Corn
     B. Oats
     C. Soybeans
     D. None of these crops would tiller

25. Which crop would have the highest seeding rate (seeds/acre)?
     A. Corn
     B. Soybeans
     C. Oats