

2009 OHIO DAIRY PRODUCTS EXAM March 28, 2009

- record answer on supplied answer sheet

WRITTEN TEST-Milk

Production

1. Milk production in 2007 in the United States rose to 20,260#/cow and was followed closely by _____ with 17,857#/cow
 - a. India
 - b. Russia
 - c. Canada
 - d. Australia

2. California and Wisconsin lead the country in total milk production states followed by _____ as the third largest milk production state.
 - a. New Mexico
 - b. New York
 - c. Idaho
 - d. Minnesota

3. 2007 figures indicate milk production per cow is now 20,267# in the United States and is _____ from the previous year.
 - a. a decrease in production
 - b. about the same production
 - c. a small increase in production
 - d. no given data to support question in recent Dairy Facts

4. While dairy farms with less than 30 cows declined the most, farms with _____ dairy cows was the only size category to see an increase in number of farm operations.
 - a. 100-150
 - b. 150-250
 - c. 250-500
 - d. more than 500

5. Milk is a significant source of _____ (vitamin B2) which helps promote healthy skin and eyes.
 - a. riboflavin
 - b. calcium
 - c. potassium
 - d. magnesium

6. About _____ percent of the calcium available in the food supply is provided by milk and milk products.
 - a. 13
 - b. 33
 - c. 53
 - d. 73

7. Milk is approximately _____ percent solids.
 - a. 3.7
 - b. 9
 - c. 13
 - d. 87

8. A distinct gel formation test appearance for a CMT would have a leukocyte count/ml range of _____.
 - a. 150,000 to 500,000
 - b. 400,000 to 1,500,000
 - c. 800,000 to 5,000,000
 - d. over 5,000,000

9. The purple color that results from the CMT test is generally _____ in samples from infected quarters of cows tested.
 - a. less intense
 - b. more intense
 - c. not present
 - d. none of the above

10. When evaluating a CMT test with a distinct positive description it indicates _____ percent of the quarters are infected.
 - a. 90
 - b. 75
 - c. 50
 - d. 25

11. As the dairy animal ages, the number of quarters reacting to a California Mastitis Test (CMT) can be expected to _____.
 - a. decrease
 - b. increase
 - c. stay about the same
 - d. none of the above

12. Off flavor that is uncommon and difficult to determine and may be described as tasteless.
 - a. foreign
 - b. salty
 - c. malty
 - d. flat

13. _____ off flavor develops when milk is placed in a glass or plastic container and left in the sun or under artificial light in a store cabinet for an extended period of time.
 - a. malty
 - b. oxidized
 - c. high acid
 - d. musty

14. Milk from cows in the late stages of lactation or cows infected with mastitis often produce milk that has a _____ off flavor.
 - a. salty
 - b. feed
 - c. flat
 - d. rancid

15. While not a common off flavor, milk not properly cooled can develop a _____ flavor.

- a. rancid
- b. malty
- c. high acid
- d. feed

16. Extreme agitation of warm raw milk in the presence of air, causing foaming, will result in _____ off flavor within a few hours.

- a. feed
- b. high acid
- c. rancid
- d. malty

17. Strong feeds or weeds, cows in late stages of lactation and an off flavor that can be detected only by taste, not smell is referred to _____ off flavor milk.

- a. acid
- b. salt
- c. onion
- d. bitter

18. Milkfat carries the fat soluble vitamins A, D, E, and _____.

- a. C
- b. F
- c. K
- d. R

19. Milk is defined as having not less than 3.25 percent milkfat and _____ percent solids-not-fat.

- a. 3.5
- b. 8.25
- c. 13
- d. 87

20. Country with the leading number of cow numbers is _____.

- a. European Union
- b. India
- c. Russia
- d. United States

WRITTEN TEST- Milk Marketing

21. To make one pound of butter it takes _____ pounds of whole milk.

- a. 7.4
- b. 9.8
- c. 11.0
- d. 21.8

22. _____ is the product resulting from the addition of lactic acid-producing bacteria to pasteurized cream containing not less than 18 percent milkfat.

- a. cultured milk
- b. half-and-half
- c. light whipping cream
- d. sour cream

23. _____ cream contains not less than 36 percent milkfat.

- a. sour
- b. heavy
- c. light whipping
- d. yogurt

24. _____ cream contains not less than 18 percent milkfat, but less than 30 percent milkfat and often called "coffee cream" or "table cream."

- a. sour
- b. light whipping
- c. sour
- d. light

25. _____ is a dairy product resulting from the culturing of a mixture of milk and cream products with lactic acid-producing bacteria with not less than 3.25 percent milkfat and 8.25 percent solids-not-fat.

- a. yogurt
- b. evaporated milk
- c. gelato
- d. sorbet

26. A _____ amendment to the Agricultural Agreement Act of 1937 authorizes such programs on a market-by-market basis when approved by producers.

- a. 1942
- b. 1968
- c. 1971
- d. 1996

27. Federal milk marketing order is a regulation issued by the Secretary of _____.

- a. Commerce
- b. Health
- c. Food and Drug
- d. Agriculture

28. The mandatory animal drug residue testing program was established in _____.

- a. 1993
- b. 1994
- c. 1995
- d. 2000

29. Currently, more than _____ of all milk produced each year in the U. S. is used to manufacture cheese.

- a. one-fourth
- b. one-third
- c. one half
- d. two thirds

30. _____ have a milkfat content of between 1 percent and 2 percent, and a slightly higher sweetener content than ice cream.

- a. gelato
- b. frozen custard
- c. sherbets
- d. French ice cream

31. Actual weight of one gallon of 4.0 percent milkfat is _____ pounds.

- a. 8.62
- b. 8.6
- c. 8.55
- d. 8.51

32. The government's U. S. Dietary Guidelines for daily consumption of milk group foods for children 9 years and older is _____ servings daily.

- a. 2
- b. 3
- c. 4
- d. 5

33. To make one pound of nonfat drymilk you are required to use approximately _____pounds of skim milk.

- a. 21
- b. 11
- c. 9.8
- d. 7.4

34. Two western states led the nation in per cow production efficiency including Washington and _____.

- a. California
- b. New Mexico
- c. Arizona
- d. Utah

35. Sales and consumption of reduced lowfat milk, buttermilk, cheese and _____ increased from 2006- 2007.

- a. ice cream
- b. eggnog
- c. whole milk
- d. yogurt

36. This creamy white cheese is often called "Pizza Cheese" and is a firm, unripened variety made from cow's milk that is firm and slightly plastic and is not aged.

- a. colby
- b. brie
- c. mozzarella
- d. brick

37. Common cheese that is a firm, ripened variety made from cow's milk, has a sweet, nutlike flavor after aging with round eyes distributed throughout the cheese.

- a. sharp cheddar
- b. provolone
- c. swiss
- d. gouda

38. Firm ripened variety of cheese from whole or skimmed cow's milk with a semi-soft to firm texture with a creamy yellow or medium yellow-orange interior and has a cannonball or oval shape.

- a. monterey jack
- b. edam/gouda
- c. sharp cheddar
- d. blue

39. _____ are the only persons regulated by an order.

- a. milk marketing cooperatives
- b. milk producers
- c. milk handlers
- d. milk inspectors

40. Milk sold for consumption in the fluid form is included in _____.

- a. Class I
- b. Class II
- c. Class III
- d. Class IV

Part II- PROBLEM SOLVING

Data for questions #1 and #2

Dairyland Farms 50 cow Ayrshire herd produced 90,000# of 4.7% butterfat milk with 3.8% protein. Butterfat differential bonus was set at .13 cents /10th of a percent over 3.5% butterfat with the protein differential bonus set at .12 cents/10th of a percent over 3.2 percent protein by the local cooperative.

1. What is the butterfat differential bonus/cwt (100#) paid to the producer?

- a. \$14.40
- b. \$1.44
- c. \$1.80
- d. \$1.56

2. The protein differential bonus/cwt (100#) paid to Dairyland Farms is _____.

- a. \$.72
- b. \$1.80
- c. \$1.56
- d. \$15.60

Data for questions #3 and #4

Standard Dairy has an unlimited supply of 36% milkfat cream in storage and three tons (2,000#/ton) of 12% half-and-half. Company officials have received a new order for 20% light cream and want to use all three tons of 12% half-an-half to fill the order.

3. How many pounds of 36% milkfat cream will be needed to complete this order of 20% light cream?

- a. 1500#
- b. 3,000#
- c. 6,000#
- d. 9,000#

4. How many total pounds of 20% light cream will be in the new order for Standard Dairy?

- a. 3,000#
- b. 6,000#
- c. 9,000#
- d. 12,000#

Data for questions #5 and #6

Reiter Dairy recently received a new order for five tons (2,000#/ton) of 24% light cream using 40% heavy cream and 4% whole milk.

5. How much 40% heavy cream is needed to fill the order? (round to the nearest whole number)

- a. 4444#
- b. 5556#
- c. 6,000#
- d. 6667#

6. Total pounds of 4% whole milk needed to fill the five ton order? (round to the nearest whole number)

- a. 4,000#
- b. 4444#
- c. 5,000#
- d. 5556#

Data for questions #7 and #8

Countrytime Dairy Farm shipped 500,000# milk last month from the farm in Wooster, Ohio. 300,000# of the milk was utilized in Class I paying \$20.00/100# (cwt); with 150,000# of milk utilized in Class II paying \$16.00/100# (cwt) and the balance of the milk used in Class III processing paying \$12.00/100# (cwt).

7. What is the blend price for 100# (cwt) milk shipped?

- a. \$14.00
- b. \$15.00
- c. \$16.00
- d. \$18.00

8. Dollar value of the entire 500,000# shipment of milk using the blend price/100# (cwt) from question #7?

- a. \$75,000
- b. \$80,000
- c. \$90,000
- d. \$800,000

Data for questions #9 and #10

Happyland Dairy recently shipped a load of 24 tons (2,000#/ton) of 3.9% butterfat and 3.4 % protein to Big Value Milk Cooperative. Hauling costs for the load was figured at \$.30 cents/100# (cwt) shipped and cooperative marketing costs for the load was figured at \$.05 cents/100# (cwt). After all the butterfat and protein bonuses were added, the blend price for the milk was \$15.50/100# (cwt).

9. What was the net price per 100# (cwt) for the milk?

- a. \$15.85
- b. \$15.52
- c. \$15.20
- d. \$15.15

10. Total dollar value of the 24 tons of milk sold by Happyland Dairy using the net price/100# (cwt) from question #9?

- a. \$7200
- b. \$7272
- c. \$7440
- d. \$7608

END OF EXAM

WRITTEN TEST

1. C- Canada
2. B- New York
3. C- small increase
4. D- over 500
5. A- riboflavin
6. D- 73%
7. C-13
8. C- 800,000 to 5,000,000
9. B- more intense
10. A- 90%
11. B- increase
12. D- flat
13. B- oxidized
14. A- salty
15. B- malty
16. C- rancid
17. D- bitter
18. C- K
19. B- 8.25
20. B- India
21. D- 21.8
22. D- sour cream
23. B- heavy cream
24. D- light cream
25. A- yogurt
26. C- 1971
27. D- Agriculture
28. A- 1993
29. B- one-third
30. C- sherbets
31. B- 8.6
32. B- 3
33. B- 11
34. C- Arizona
35. D- yogurt
36. C- mozzarella
37. C- swiss
38. B- edam/gouda
39. C- milk handlers
40. A- Class I

PART II -PROBLEM SOLVING

1. D- \$1.56
 $4.7 - 3.5 = 1.2$ or 12 units $\times .13 = \$1.56$
 (answer)
2. A- \$.72
 $3.8 - 3.2 = .6$ or 6 units $\times .12 = \$.72$
 (answer)
3. B- 3,000#
 $36 - 20 = 16$ parts 12%; $20 - 12 = 8$ parts 36%
 $16 + 8$ parts = 24 parts 20%
 16 parts = 6,000# ; 1 part = 375#
 $8 \times 375 = 3,000$ #
 (answer)
4. C- 9,000#
 $24 \times 375 = 9,000$ #
 (answer)
5. B- 5556#
 $40 - 24 = 16$ parts 4%; $24 - 4 = 20$ parts 40%
 $20 + 16 = 36$ parts or 10,000#
 1 part = 277.777
 20 parts = 5556#
 (answer)
6. B- 4444#
 16 parts = 4444#
 (answer)
7. D- \$18.00/cwt
 $300,000\# = 60\% \times \$20.00 = \$12.00$
 $150,000\# = 30\% \times \$16.00 = \$4.80$
 $50,000\# = 10\% \times \$12.00 = \1.20
 total = answer (\$18.00)
8. C- \$90,000
 $\$18.00 \times 5,000$ cwt = \$90,000
 (answer)
9. D- \$15.15/cwt
 $\$15.50 - .30 - .05 = \15.15
 (answer)
10. B- \$7272
 $\$15.15 \times 480$ cwt = \$7272
 (24 tons $\times 2,000 = 48,000$) 480 cwt
 answer- \$7272

2008 OHIO DAIRY FOODS CDE EXAM

March 29, 2008

- record answer on provided sheet for CDE

MILK PRODUCTION

1. One hundred years ago milk production was 1,700 quarts annually/cow and has grown to _____ today.
 - a. 6,800 quarts annually
 - b. 7,800 quarts annually
 - c. 8,800 quarts annually
 - d. 9,800 quarts annually

2. Of the ten largest states in milk production, _____ leads all other states with 38,830 million pounds.
 - a. Texas
 - b. Wisconsin
 - c. New York
 - d. California

3. The total number of U. S. farm operations with milk cows decreased in 2006, but herd's with _____ head of milk cows was the only herd size to increase according to 2007 Dairy facts.
 - a. 500+
 - b. 200-499
 - c. 100-199
 - d. 30-49

4. The average number of dairy cows per farm in 2006 increased to _____ per farm operation.
 - a. 93
 - b. 111
 - c. 121
 - d. 133

5. Although milk from the cow is processed, it is not an engineered or fabricated food and contains about _____ percent water.
 - a. 3.7
 - b. 9.0
 - c. 13
 - d. 87

6. Of the four nutrients found in milk, _____ found in milk is readily absorbed by the body.
 - a. potassium
 - b. magnesium
 - c. phosphorus
 - d. calcium

7. Off-flavor of milk described as tasteless, difficult to determine flavor and uncommon flavor.
 - a. bitter
 - b. malty
 - c. foreign
 - d. flat/watery

8. Off-flavor of milk that cannot be detected by odor, only by taste, and may be present in milk from cows in the late stages of lactation.
 - a. rancid
 - b. salty
 - c. garlic/onion
 - d. feed

9. This off-flavor milk is caused by consumption of strong feeds, or weeds and can only be detected by taste and not by smell.
- bitter
 - feed
 - malty
 - high acid
10. When detecting this off-flavor in milk, the distinctive odor and taste caused by obnoxious weed flavors is imparted to the milk making the milk undesirable.
- metallic
 - malty
 - rancid
 - garlic/onion
11. Off-flavor that is caused by extreme agitation causing foaming of warm raw milk in the presence of air and has the flavor of stale fat and a soapy taste.
- high acid
 - rancid
 - malty
 - feed
12. While this is not a common off-flavor in milk, it may be encountered in milk not properly cooled.
- malty
 - feed
 - salty
 - rancid
13. This off-flavor milk is a result of bacterial growth (commonly *Streptococcus lactis*) and has a detectable flavor long before it may be classified.
- flat/watery
 - high acid
 - rancid
 - garlic/onion
14. Outstanding examples of the cause of this off-flavor is the consumption of grass, silage, and alfalfa hay up to four hours to prior to milking.
- bitter
 - feed
 - malty
 - salty
15. An _____ off flavor is recognized by its “papery” or cardboard sensation.
- rancid
 - high acid
 - oxidized
 - malty
16. The _____ color that results from the California Mastitis Test is generally more intense in samples from infected quarters of milk cows.
- red
 - blue
 - yellow
 - purple
17. When using the California Mastitis Test (CMT) a sample with slight precipitate, tends to disappear with paddle movement would have a Leukocyte count of _____.
- below 200,000
 - 150,000 to 1,500,000
 - 800,000 to 5,000,000
 - over 5,000,000

18. For best results don't use the CMT before the _____ day after calving or to test milk from cows being dried off.
- first
 - second
 - third
 - fourth
19. Milk that is watery, thick, or ropy means an active case of _____ mastitis has progressed far enough to be recognizable.
- metosissus
 - cronic
 - acute
 - clinical
20. When using general conversion factors, 1 pound weight = _____ ounces.
- 8
 - 12
 - 16
 - 20

MILK MARKETING

21. To make one pound of butter it requires approximately _____ of whole milk.
- 7.4
 - 9.8
 - 11.0
 - 21.8\
22. Milk product that contains not less than 36 percent milkfat is called _____.
- sour cream
 - heavy cream
 - light whipping cream
 - light cream
23. Liquid milk product that consists of a mixture of milk and cream containing not less than 10.5 percent milkfat, but less than 18 percent milkfat is referred to as _____.
- creamette
 - half-and-half
 - cultured milk
 - buttermilk
24. Guidelines for suggested daily consumption of milk group foods by the government U.S. Dietary for children 1-8 years old is _____ serving/servings.
- 1
 - 2
 - 3
 - 4
25. _____ and water ices are similar to sherbets, but contain no dairy ingredients.
- gelato
 - frozen yogurt
 - frozen custard
 - sorbet
26. Federal regulations state that ice cream must have at least 10% milkfat, but gourmet or superpremium ice creams contain at least _____ milkfat or more.
- 12%
 - 14%
 - 16%
 - 18%

27. Currently cheese leads in the milk supply utilization, by product with 40% in 2006. _____ is the least milk supply utilization, by product with 1.1%.
- evaporated and condensed milk
 - frozen dairy products
 - creamery butter
 - fluid milk and cream
28. Of the twelve selected dairy products, six declined and six increased in % change during the past year. Sour cream and dips showed the largest decline with 5.1% decline in percent change while _____ showed the largest increase in percent change with 6.7% increase in 2006.
- cottage cheese
 - whole milk
 - buttermilk
 - yogurt
29. Of the top ten total milk production states in the U.S., which state is NOT one of the top five listed in 2006 total milk production?
- California
 - New York
 - Idaho
 - Texas
30. _____ was the launch of processor-funded milk mustache advertising campaign.
- 1993
 - 1994
 - 1995
 - 2000
31. The only persons regulated by an Federal order are _____.
- milk producers
 - milk handlers
 - consumers
 - milk marketing cooperative
32. Class of milk that includes fluid whole milk, fluid lowfat and skim milk is _____.
- class I
 - class II
 - class III
 - class IV
33. The Agricultural Marketing Act of _____ authorizing Federal orders, does not authorize setting of retail milk prices.
- 1933
 - 1937
 - 1946
 - 1980
34. The Agricultural Adjustment Act of _____ gave Federal authority to regulate the handling of milk.
- 1933
 - 1937
 - 1946
 - 1980
35. Soft manufactured products such as cream products and cottage cheese are classified as _____ use.
- class I
 - class II
 - class III
 - class IV

36. Multiple component pricing (MCP) prices are based on both butterfat and nonfat solids or _____ in milk.
- water content
 - protein
 - water soluble vitamins
 - minerals
37. The number of Federal order has been reduced by more than one-half from the peak of 83 orders in the early _____.
- 1940's
 - 1950's
 - 1960's
 - 1970's
38. A Federal milk marketing order is a regulation issued by the _____.
- President of Farm Bureau
 - President of the local cooperative
 - Secretary of Commerce
 - Secretary of Agriculture
39. A product resulting from the culturing of a mixture of milk and cream products with the lactic acid-producing bacteria is _____.
- cottage cheese
 - cultured milk
 - yogurt
 - condensed milk
40. Evaporated milk is made by removing about _____ percent of the milk's water and contains not less than 6.5% milk fat.
- 45
 - 60
 - 75
 - 90

PART II- Concepts- ten problems

Data for problems #1 and #2

Young's Jersey Dairy herd of 70 cows produced 125,000# of 5.5% butterfat milk with 3.7% protein. Butterfat differential bonus was set at 13 cents /tenth of a percent over 3.5% butterfat, with protein differential established by the local cooperative at 14 cents/tenth of a percent over 3.2% protein.

- What is the total dollar value of the butterfat differential bonus for the 125,000# of milk?
 - \$2,925
 - \$3,250
 - \$3,500
 - \$3,737.50
- The total protein differential bonus for the 125,000# milk from Young's Jersey Dairy is _____.
 - \$875
 - \$3,150
 - \$3,737.50
 - \$4,025

Data for problems #3 and #4

Reiter Dairy received a shipment of 300,000# of milk from Wooster area farms. 120,000# were utilized in Class I selling for \$22.00/cwt (100#); 60,000# were utilized in Class II and marketed for \$16.00/cwt (100#); with the balance of 20,000# used in Class III that sold for \$12.00/cwt (100#).

- What is the blend price for the shipment/100# milk?
 - \$15.93
 - \$16.67
 - \$17.40
 - \$19.20

4. The total shipment value, with the added adjusted blend price, for the 200,000# milk was _____.
- a. \$33,340
 - b. \$34,800
 - c. \$38,400
 - d. \$44,000

Data for problems #5 and #6

United Dairy Farmers have an unlimited supply of 40% heavy cream in storage and plan to make 16% light cream and want to use one ton (2,000#) of excess 2% lowfat milk to make the order.

5. How much 40% heavy cream will be used to fill this order to use up the ton of excess 2% lowfat milk?
(round to nearest pound)
- a. 143#
 - b. 833#
 - c. 1167#
 - d. 1428#
6. Total pounds of 16% light cream that will be made in this order?
- a. 2428#
 - b. 3167#
 - c. 3428#
 - d. 3833#

Data for problems #7 and #8

Milky Way Dairy recently received an order for 4,000# (2 tons) of 18% light cream from a local chain store. To fill the order the plant manager plans to use 38% heavy cream and 2% lowfat milk for the 4,00# order.

7. How many pounds of 2% lowfat milk will be used to make this order? (rounded to the nearest pound)
- a. 2,000#
 - b. 2,105#
 - c. 2,222#
 - d. 3,333#
8. Total pounds of 38% heavy cream to be used in filling the two ton order of 18% light cream is _____.
(rounded to the nearest pound)
- a. 1,111#
 - b. 1,778#
 - c. 1,894 #
 - d. 2,000#

Data for problems #9 and #10

International Dairy Foods has on storage 3,000 gallons of whole milk and would like to process a special order for quarts of milk to be used at a local dairy convention. Using the given data, compute answers for #9 and #10. *GIVEN DATA*: milk weighs 8.6# per gallon, four quarts in one gallon, 2.15# in one quart of milk, two pints in one quart.

9. Total pounds of milk used in this order is _____.
- a. 12,000#
 - b. 25,800#
 - c. 3,488#
 - d. 10,320#
10. Total quarts of milk that will be processed and bottled for this order is _____.
- a. 3,490
 - b. 7,500
 - c. 12,000
 - d. 48,000

THE END- RECHECK ALL ANSWERS

KEY- 2008 Ohio Dairy Products Exam- not to be released until after 3-29-08 CDE Exam

1. C- 11-DF
2. D- 24-DF
3. A- 29-DF
4. C- 30-DF
5. D- 16-DF
6. D- 16-DF
7. D- 3-J250
8. B- 4-J250
9. A- 3-J250
10. D- 4-J250
11. B- 4-J250
12. A- 4-J250
13. B- 4-J250
14. B- 3-J250
15. C- 4-J250
16. D- 1-CMT
17. B- 1-CMT
18. C- 3-CMT
19. D- 1-CMT
20. C- 70-DF
21. D- 19-DF
22. B- 17-DF
23. B- 17-DF
24. B- 16-DF
25. D- 18-DF
26. A- 14-DF
27. A- 25-DF
28. D- 59-DF
29. D- 24-DF
30. C- 12-DF
31. B- 6-FMM
32. A- 7-FMM
33. B- 7-FMM
34. A- 7-FMM
35. B- 7-FMM
36. B- 11-FMM
37. C- 4-FMM
38. D- 3-FMM
39. C- 17-DF
40. B- 17-DF

PROBLEM SOLVING

1. B- \$3,250- $(5.5 - 3.5=20 \times .13= \$2.60/\text{CWT} \times 1250)$ ANSWER
2. A- \$875.00- $(3.7 - 3.2=5 \times .14= \$.70/\text{CWT} \times 1250)$ ANSWER
3. D- \$19.20- $(60\% \times \$22 + 30\% \times \$16 + 10\% \times \$12)$ \$13.20 + \$4.80 + \$1.20=ANSWER
4. C- \$38,400- $(\$19.20 \text{ CWT} \times 2000)$ ANSWER
5. C- 1167#- $(2\%= 24 \text{ PARTS}, 40\%=14 \text{ PARTS}- 2,000\# = 24 \text{ PARTS}, 1 \text{ PART}= 83.333333)$ ANSWER
6. B- 3167# - $(38 \text{ PARTS} \times 8.33333\#/\text{PART}= 3167\#)$ ANSWER
7. C- 2222#- $(38\% - 18\% = 20 \text{ PARTS}) (36 \text{ PARTS}= 4,000\#, 1 \text{ PART} = 111.1111\# \times 20)$ ANSWER
8. B- 1778#- $(18\% - 2\%=16 \text{ PARTS}) 1 \text{ PART}= 111.1111 (16 \text{ PARTS}=1778\#)$ ANSWER
9. B- 25,800# $(3,000 \text{ GALLONS} \times 8.6\#/\text{GALLON}=25,800\#)$ ANSWER
10. C- 12,000 QUARTS $(25,800 \# \text{ MILK DIVIDED BY } 2.15\#/\text{QUART})$ ANSWER

REFERENCES USED-2008 EXAM

DF= 2007 DAIRY FACTS J250= JUDGING AND IDENTIFYING DAIRY PRODUCTS
FMM= FEDERAL MILK MARKETING ORDERS CMT= USING THE C M T (UNIV. OF MISSOURI)

2005 OHIO FFA DAIRY FOODS CAREER DEVELOPMENT EXAM
record answers on provided sheet and transfer to bubble sheet

PART I- MILK PRODUCTION- 2005

1. Off-flavor of milk that may be described as tasteless and the flavor of normal milk is lacking.
a) high acid b) rancid c) oxidized d) flat/watery e) salt
2. Flavor detected in milk by consumption of strong feeds or weeds or milk from cows in late stages of lactation.
a) feed b) salty c) bitter d) rancid e) metallic
3. Off-flavor imparted to milk when cows eat leek and other obnoxious weeds. Flavor can be recognized by distinctive odor and taste suggested by its name.
a) rancid b) garlic/onion c) foreign d) flat/watery e) bitter
4. Serious off-flavor to milk caused by fly spray, paint, kerosene or creosote. Substances enter milk as direct contaminants or in vapor form.
a) rancid b) foreign c) feed d) malty e) salty
5. Off-flavor is quite pungent in advanced stages and is recognized by its “papery” or cardboard sensation initially and a tallowy odor in more advanced stages.
a) malty b) foreign c) salty d) feed e) oxidized
6. This flavor resembles the flavor of stale fat and has a soapy taste and a goaty, unclean odor as a result of breaking down of fats in milk.
a) salty b) garlic/onion c) feed d) rancid e) flat/watery
7. This off-flavor is seldom found except in pasteurized milk that has been stored too long or stored at a slightly high refrigerator temperature.
a) foreign b) unclean c) high acid d) feed e) flat/watery
8. This off-flavor is a result of bacterial growth (commonly *Streptococcus lactis*) and will have detectable _____ flavor long before it may be classified sour.
a) acid b) malty c) feed d) rancid e) foreign
9. Milk not properly cooled may encounter this off flavor and is caused by improperly cleaned milking machines or equipment.
a) malty b) foreign c) feed d) rancid e) salty
10. By taking cows off offending feeds four hours before milking, such as silage, alfalfa hay, green grass and turnips, a farmer can reduce the risk of getting this off-flavor milk.
a) bitter b) acid c) feed d) malty e) unclean

11. A CMT test appearance with a strong gel formation that tends to adhere to paddle and forms a distinct central peak would have a Leukocyte count/ml of_____.
- a) below 200,000 b) 150,000-500,000 c) 800,000-5,000,000 d) over 5,000,000
12. When performing a CMT tests watch for color changes and gel formation. Milk from a normal quarter does which of the following?
- a) gelatinous mass clinging together in a strong reaction
b) flows freely
c) gel is fragile and forms small clumps in a moderate reaction
d) has no pattern, simply is a randomly run test
13. The most recent average milk production per cow on U. S. farms was reported at_____#.
- a) 16,871 b) 17,763 c) 18,162 d) 18,749 e) 19,479
14. New Dairy Facts figures (2004 Edition), verify the leading state with 1,688,000 dairy cows is_____.
- a) Wisconsin b) New York c) California d) Pennsylvania e) Idaho
15. The average herd size of U. S. farm operations with milk cows has_____dairy cows per farm according to the 2004 Edition of Dairy Facts.
- a) decreased to 95
b) increased to 100
c) decreased to 100
d) increased to 105
e) stayed about the same, no change in several years
16. About _____percent of the calcium available in the food supply is provided by milk and milk products.
- a) 13 b) 56 c) 73 d) 80 e) 87
17. State with the most pounds of milk per cow with 22,284# is_____.
- a) Wisconsin b) California c) Arizona d) Ohio e) Washington
18. Whole milk with a milk fat test of 3.0 to 4.99% and 8.6# per gallon equals how many pounds per quart?
- a) 2.1575# b) 2.15# c) 2.1375# d) 2.1275# e) 2.0925#
19. The number of milk cows in the U. S. , _____ in 2003, while a new national record production was set.
- a) increased by 55,000 head b) decreased by 55,000 head c) stayed about the same
20. As it comes from a cow , the solids portion of milk contains approximately 3.7 percent fat and _____ percent solids-not-fat.
- a) 3% b) 6% c) 9% d) 12% e) 15%

PART II - MILK MARKETING- 2005

21. A dairy farmer who delivers “ Grade A “ or “ bottling quality “ milk to plant is know as the_____.
- a) handler b) producer c) order taker d) consumer e) processor
22. Term for a designated trading area within which the handling of milk is regulated by the Federal order is called the _____.
- a) milk zone b) milk pool c) marketing area d) handler pool area e) both A and B
23. Multiple Componet Pricing (MCP) is where prices are based on_____ of the milk.
- a) butterfat content b) nonfat solids (or protein) c) water and butterfat content d) A & B
24. Legal action may be instituted through the _____ Department in the Federal courts to enforce a Federal order.
- a) Agriculture b) Commerce c) Justice d) Education e) Political Action
25. A milk marketing agreement is entered into by_____ and the Secretary of Agriculture and is authorized by the Agricultural Marketing Agreement Act of 1937.
- a) milk processors b) milk handlers c) milk dealers d) milk consumers
26. If the (Federal) order contains a marketwide pool, the law provides that at least _____ of the producers selling milk in the marketing area must approve the final order before it may be issued.
- a) one-third b) one-half c) two-thirds d) three-fourths e) 100%
27. The Secretary of Agriculture may terminate a marketing order when it is favored by a majority of the dairy farmers who deliver more than _____ of the milk to the market.
- a) 25% b) 50% c) 66% d) 75% e) 90%
28. The only persons regulated by an order (Federal) are the_____.
- a) marketing cooperative b) milk producer c) milk handler d) milk consumer
29. Which state is NOT one of the five leading states in natural cheese production?
- a) California b) Wisconsin c) New York d) Ohio e) Minnesota
30. In 2003 U.S. exported 52,101 metric tons of cheese. Our largest trading partner was_____ with over 30% or 16,147 metric tons of cheese exported to this country.
- a) Japan b) Dominican Republic c) Canada d) Mexico e) Hong Cong
31. During the 2003 ice cream consumption survey by flavors, the top flavor in the households polled was_____ flavor. (33% of all consumption)
- a) strawberry b) vanilla c) chocolate d) neapolitan e) nut/carmel

32. During the most recent sales and consumption of dairy products report, buttermilk and fat-free milk declined the most in per capita sales. The largest increase in per capita sales was _____, with a 14.5% increase, according to USDA, Economic Research Service.
a) ice cream b) creams c) whole milk d) cheese e) flavored milk
33. In 2003 U.S., milk supply utilization by product, showed 37.9% was utilized by which milk product and the largest utilized product?
(according to the USDA, National Agricultural Statistics Service)
a) creamery butter b) frozen dairy products c) cheese
d) fluid milk, cream and specialty sales e) evaporated and condensed milk
34. _____ consists of a mixture of milk and cream containing not less than 10.5 percent milkfat, but less than 18 percent milkfat.
a) cultured milk b) sour cream c) heavy cream d) half-and-half e) yogurt
35. Year Federal milk marketing orders were reformed and component pricing introduced?
a) 1937 b) 1964 c) 1993 d) 1995 e) 2000
36. Of the 14 cheese varieties, which has a tangy peppery flavor, is crumbly and pasty, has a white interior with veins of mold that are marbled or streaked?
a) muenster b) edam/gouda c) swiss d) blue e) brie
37. Dairy product resulting from the addition of a creaming mixture (dressing) that contains not less than 4 percent milkfat and not more than 80 percent moisture?
a) sorbet b) sherbet c) yogurt d) sour cream e) cottage cheese
38. _____ is a dairy product resulting from the culturing of a mixture of milk and cream products, with lactic acid producing bacteria. It contains not less than 3.25 percent milkfat and 8.25 percent solids-not-fat.
a) ice cream b) yogurt c) cottage cheese d) gelato e) sorbet
39. Of the listed below products, which contains no dairy ingredients?
a) gelato b) sherbet c) custard d) sorbet e) yogurt
40. To make one pound of butter it would require approximately _____ of whole milk.
a) 21.8# b) 11.0# c) 9.8# d) 7.4# e) 7.3#

PROBLEM SOLVING

Using the following data figure problems #1 and #2.

Your dairy herd of 100 Jersey cows produced 50,000# of 5.4% butterfat milk with 3.5% protein on March 28th. Butterfat differential bonus was set .12 cents/tenth of a percent over 3.5% ; while protein differential bonus was set at .11 cents/tenth of a percent over 3.2%.

1. What is the butterfat bonus paid for the 50,000# daily shipment?
a) \$165 b) \$1045 c) \$1140 d) \$1750 e) \$3240
2. The protein differential bonus paid for the 50,000 daily shipment was \$_____.
a) \$114 b) \$165 c) \$270 d) \$279 e) \$1140

For problems #3 and #4 , use the following data.

ABC Dairy had a shipment of 100,000# of milk from the 80 cow Brown Swiss herd in Central Ohio. 55,000# of milk was utilized in Class #1 and paid \$14.10/cwt(100#) while 30,000# of milk was utilized in Class II and paid \$12.50/cwt (100#). The balance was utilized in Class III and paid \$11.42/cwt (100#) with no additional bonuses paid for the shipment.

(round answer to nearest whole cent)

3. What was the blend price for 100# milk shipped?
a) \$13.22 b) \$12.83 c) \$12.67 d) \$12.50 e) \$11.42
4. The gross amount of the milk check paid to ABC Dairy with no deductions was \$_____.
a) \$12,500 b) \$12,670 c) \$12,830 d) \$13,220 e) \$14,100

Information for problems #5 and #6

The local Farmers Milk Cooperative has an unlimited supply of 0% milkfat (nonfat milk) and three tons (6000#) of 36% milkfat heavy cream to process. The Cooperative plans to make 20% light cream for a special military contract in Iraq.

5. How many pounds of 0% milkfat will be needed to complete this order?
a) 1080# b) 2000# c) 3000# d) 3600# e) 4800#
6. How many total pounds of 20% light cream will be in this special order?
a) 4440# b) 4800# c) 5300# d) 6,000# e) 10,800#

For problems #7 and #8 use the following data.

Sunshine Milk Cooperative recently accepted a special order for four tons (8,000#) of 30% milkfat light whipping cream. To make the order the plant manager has two products available to blend the order including 2% milkfat (reduced fat milk) and 36% milkfat (heavy cream).

7. How many pounds of 2% reduced fat milk will be used in this order?
- a) 240# b) 659# c) 1263# d) 1412# e) 6589#
8. Total pounds of 36% milkfat (heavy cream) needed to make this order?
- a) 3400# b) 5894# c) 6588# d) 8000# e) 14,120#

Data for problems #9 and #10 includes the following:

JilBree Dairy has 200 cows that produced 300,000# of 3.8% butterfat milk with a protein of 3.1%. Joe Hauling Company charges .25 cents/100# milk shipped to the local milk plant and pays a differential bonus on any milk over 3.5% butterfat and 3.2% protein. The most recent differential bonus was \$.15 for each 1/10th percent of butterfat and \$.09 for each 1/10th percent of protein.

9. What was the shipping charge paid for hauling the milk to the local milk plant for all 300,000#?
- a) \$300 b) \$750 c) \$1350 d) \$2700 e) \$7500
10. What is the total differential bonus paid for the 300,000# milk combined? (butterfat and protein)
- a) \$1080 b) \$1350 c) \$1620 d) \$2700 e) \$2850

DOUBLE CHECK ALL WORK AND TRANSFER ANSWERS ONTO CORRECT LINES

KEY- 2005-OHIO DAIRY FOODS CDE- Not to be released until after event 4-2-05

1. D- flat
2. C- bitter
3. B- onion
4. B- foreign
5. E- oxidized
6. D- rancid
7. B- unclean
8. A- acid
9. A- malty
10. C- feed
11. D- over 5,000,000
12. B- flows freely
13. D- 18,749
14. C- California
15. D- increased to 105
16. C- 73%
17. E- Washington
18. B- 2.15#
19. B- decreased 55,000
20. C- 9%
21. B- producer
22. C- marketing area
23. D- butterfat & solids-not-fat
24. C- Justice
25. B- milk handlers
26. C- 2/3
27. B- 50%
28. C- milk handler
29. D- Ohio
30. D- Mexico
31. B- vanilla
32. B- creams
33. C- cheese
34. D- half-and-half
35. E- 2000
36. D-blue
37. E- cottage cheese
38. B- yogurt
39. D- sorbet
40. A- 21.8#

PART II- Problems

1. C- \$1140 $5.4 - 3.5 = 19 \times .12 \times 500 = \1140 (ans.)
2. B- \$165 $3.5 - 3.2 = 3 \times .11 \times 500 = \165 (ans)
3. A- \$13.22 $55,000$ divided by $100,000 = 55\%$
 $30,000$ divided by $100,000 = 30\%$
 $15,000$ divided by $100,000 = 15\%$
 $\$14.10 \times .55 = \7.755 or $\$7.76$
 $\$12.50 \times .30 = \3.75
 $\$11.42 \times .15 = \1.73
total.....\$13.22
4. D- \$13,220 $\$13.22 \times 1,000 = \$13,220$
5. E-4800#
6. E -10,800# $36 \frac{\quad}{20} = 6000\#$ 20 parts= 6000#
1 part = 300#
20 parts= 4800#
7. D- 1412#
8. C- 6588# $0 \frac{\quad}{16} = 4800\#$
 $(6000\# + 4800\# = 10,800\#)$
 $10,800 \times .5555\% = 6000\#$
 $10,800 \times .4444\% = 4800\#$
9. B- \$750 $300,000 / 100 = 3000 \times .25 = \750.00
10. A- \$1080 $3.8 - 3.5 = 3 \times .15 = .45 \times 3000 = \1350 add
 $3.2 - 3.1 = 1 \times .09 = 9 \times 3000 = (\$270)$ deducted= \$1080)

References used included the five official references from 2005 Dairy Products CDE list.