During this examination, students may not use notes, books, computers, programmable calculators, cell phones or any electronic device other than a simple calculator. Students may not talk with other students or look at the exam papers of other students. Once the exam begins, students may not leave the room until they finish and turn in their exams.

**Honor Pledge:** I have neither given nor received unauthorized aid on this examination. I know and have abided by the examination rules and instructions.

**Signed:**

**Instructions**

1. On the blue Scantron sheet:
   a. Bubble in your last name, first name and PID.
   b. Bubble in your recitation number in the "sequence number area" as 1017xx where xx is determined by your section number. For example, someone in section 712 would bubble in 101712. See below for a list of section numbers.
   c. **Students who incorrectly bubble their name, PID, or section number are penalized 2 points.**
   d. Write the form color of the examination on the upper left corner of the bubble sheet. The form is "white", "green", "blue" or "yellow".

2. The examination includes 32 equally weighted questions. Answer all questions by marking the bubble sheet and by circling the correct answer on the examination itself. In the case of conflict, the Scantron answer is the official answer.

3. If you believe there is no right answer or more than one right answer to any question, explain your reasoning on the back of this sheet (not the Scantron sheet). We will not consider an appeal unless you have recorded your argument on the exam sheet during the exam period.

4. When you have finished the examination, sign the honor pledge. We will not consider an examination valid unless you sign the pledge.

5. When you are finished, turn in the answer sheet and the examination by putting them on the correct piles at the podium.

**For yellow exams, questions 1-8 are the same as questions 25-32 for white.**
**Questions 9-32 are the same as questions 1-24 for white.**

**For blue exams, questions 1-16 are the same as questions 17-32 for white.**
**Questions 17-32 are the same as questions 1-16 for white.**

**For green exams, questions 1-24 are the same as questions 9-32 for white.**
**Questions 25-32 are the same as questions 1-8 for white.**
1. Paul is the owner and manager of an auto body shop. His revenues exceeded his explicit costs last year, and he expected the same for coming years. Nevertheless, he closed the business and walked away. Was his accounting profit positive last year (and in years to come)? Was his economic profit positive last year (and in years to come)?

a. Yes; yes
b. Yes; no
c. No; yes
d. No; no
e. None of the above

2. The total monetary utility of a good or service to an individual is the maximum amount of _______ that he or she is ________________ in exchange for a good or service.

a. money, willing to pay
b. money, charged by seller
  (Producer)
c. another good, willing to pay
  (Not in terms of money)
d. another good, charged by seller
  (Producer)
e. None of the above

Background for 3, 4 and 5: Caroline and Helen have started their own business – Tar Heel Fudge. There are two parts to the production process: cooking (C) and wrapping (W) in a fancy box. Here’s the amount of time (in minutes) that each puts in for one of each product.

<table>
<thead>
<tr>
<th>Wrapping (W)</th>
<th>Caroline</th>
<th>Helen</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Cooking (C)</td>
<td>120</td>
<td>150</td>
</tr>
</tbody>
</table>

Caroline has 10 hours per week (600 minutes) to devote to the business, while Helen has 20 hours per week (1200 minutes). The completed fudge, cooked and wrapped, sells for $50.

3. Which of the following combinations can Caroline possibly produce in one week given her time constraint?

a. (4 W, 2 C)
b. (4 W, 3 C)
c. (4 W, 4 C)
d. All of the above
e. None of the above

4. Relative to Caroline, Helen has _________ advantage in _________.

a. an absolute, cooking fudge
b. an absolute, wrapping fudge
c. a comparative, cooking fudge
d. a comparative, wrapping fudge
e. None of the above.
5. Helen's opportunity cost of cooking one pan of fudge is
   a. 4 W
   b. 2.5 W
   c. 0.4 W
   d. 0.25 W
   e. none of the above

6. The production possibilities frontier indicates the ____________ amount of one good that can be produced for ____________ level of production of the other good.
   a) maximum, every possible
   b) minimum, every possible
   c) maximum, a fixed
   d) minimum, a fixed
   e) none of the above

7. Outsourcing is a term increasingly used to connote having ____________ performed by ____________ workers overseas.
   a. calculations, high-skilled
   b. calculations, low-wage
   c. services, high-skilled
   d) services, low-wage
   e) none of the above

8. The demand for gasoline is inelastic with respect to the price of gasoline because the percent change in the quantity demanded of gasoline in response to a 10-percent rise in price is
   a. an increase of more than 10 percent
   b. an increase of less than 10 percent
   c. a decrease of more than 10 percent
   d) a decrease of less than 10 percent
   e) none of the above

   means \( \frac{\Delta Q}{\Delta P} < 1 \) and if \( P > 10\% \) for it to be inelastic \( \frac{\Delta Q}{\Delta P} < 1 \) by less than 10% (we don't care if prices go up.)

9. A fixed cost is a cost of the firm whose value ____________ when output goes up, but one that the firm ____________ to have any output at all.
   a. rises, must pay
   b. rises, cannot pay
   c) does not rise, must pay
   d. does not rise, cannot pay
   e) none of the above

   Definition
Background for 10, 11, 12: Jacinta is at the State Fair, and is caught in a quandary. She has $35 to spend, and
three activities to choose from. The three activities are ring toss ($2 apiece), deep-fried ice cream ($4 apiece), and
Ferris Wheel tickets ($5 apiece). Here is the total utility attached to purchases of each of these:

<table>
<thead>
<tr>
<th>Number</th>
<th>Ring Toss</th>
<th>Deep-fried ice cream</th>
<th>Ferris Wheel tickets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>38</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>44</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

Total utility of each:

- Ring Toss: 10/2 = 5
- Deep-fried ice cream: 50/4 = 10
- Ferris Wheel tickets: 90/5 = 18

10. If Jacinta buys four deep-fried ice creams, what combinations of the other goods will be affordable?

- a) 2 ring toss, 2 Ferris Wheel tickets
- b) 3 ring toss, 3 Ferris Wheel tickets
- c) 4 ring toss, 4 Ferris Wheel tickets
- d) only a and b
- e) only b and c

11. What is the affordable combination that provides Shanta with the greatest utility?

- a. 4 ring toss, 3 Ferris Wheel tickets, 2 deep-fried ice creams = $31
- b. 4 ring toss, 3 Ferris Wheel tickets, 4 deep-fried ice creams = $39
- c. 2 ring toss, 3 Ferris Wheel tickets, 3 deep-fried ice creams = $21
- d. 2 ring toss, 4 Ferris Wheel tickets, 4 deep-fried ice creams = $35
- e. 2 ring toss, 4 Ferris Wheel tickets, 3 deep-fried ice creams = $35

12. The optimal purchase rule tells us that we can maximize utility from expenditure if we choose the affordable
combination for which the marginal utility per dollar spent is equated for all goods. Is this true or false in this
example? If true, what is the marginal utility per dollar spent for the best combination of goods for Jacinta?

- a. false
- b. true, 15
- c. true, 10
- d. true, 8
- e. true, 5

13. If we begin with accounting profit of a business, we can create the economic profit of the business by
subtracting the opportunity cost of owner's time and any other implicit cost.

- a. adding, opportunity cost
- b. adding, variable cost
- c. subtracting, opportunity cost
- d. subtracting, variable cost
- e. none of the above
**Background for 14 and 15.** Frederick is a golf-a-holic: he just loves to play the sport. However, the fees charged to play a round of golf have begun to worry him. He pays $50 per round of golf (even after giving up his motorized cart). When he considers the number of rounds of golf he plays each week, he can calculate the total monetary value of his foregone activities (TMVFA); they are found in the table to the side. He also owns an excellent set of golf clubs worth $600.

<table>
<thead>
<tr>
<th>Rounds of golf</th>
<th>TMVFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>3</td>
<td>70</td>
</tr>
<tr>
<td>4</td>
<td>120</td>
</tr>
<tr>
<td>5</td>
<td>200</td>
</tr>
</tbody>
</table>

14. If Frederick follows the optimal purchase rule, he will play how many rounds of golf?

a. five rounds
b. four rounds
c. three rounds
d. two rounds
e. one round

15. When Frederick makes his optimal decision, should he consider the value of his golf clubs?

a. yes; it's a fixed cost.
b. no; it's a fixed cost.
c. yes; it's a sunk cost.
d. no; it's a sunk cost.
e. none of the above

16. A price ceiling is the _____________ that the price charged for a commodity cannot legally _____________.

a. maximum, exceed.
b. minimum, exceed.
c. maximum, fall below.
d. minimum, fall below.
e. none of the above

17. The profit-maximizing firm will choose to continue producing so long as ____________ profits are positive because _____________.

a. economic, this is a better return than the next best alternative for the owner.
b. economic, the firm can pay its bills.
c. accounting, this is a better return than the next best alternative for the owner.
d. accounting, the firm can pay its bills.
e. none of the above

See question #1, the concepts are very closely connected.
Suppose that we have one consumer in the room willing to buy one of a certain kind of hat for $10. We also have four suppliers willing to sell that kind of hat for $10. Is this an equilibrium? If not, what will happen to move this group to equilibrium?

a. Yes.

b. No; The suppliers will bid up the price of the hat until the consumer doesn't want it.

c. No; The suppliers will bid down the price of the hat until only one is willing to sell at that price.

d. No; A fight will break out.

e. None of the above.

19. Hydro-fracturing, or "fracking", is a new technology for extracting natural gas from the ground. If it has the effect of increasing the quantity of natural gas supplied at every price, we expect it to

a. lower the price and lower the quantity sold in the market.

b. lower the price and raise the quantity sold in the market.

c. raise the price and lower the quantity sold in the market.

d. raise the price and raise the quantity sold in the market.

e. none of the above

Background for 20, 21 and 22. Unemployment in North Carolina remains stubbornly high, with an 8.9 percent unemployment rate for the state while the national average is 7.4 percent. One cause advanced for this phenomenon is the minimum wage of $7.25 per hour. Use the following diagram to answer these questions.
20. In the absence of the minimum wage, the equilibrium wage and number of workers indicated by this supply and demand curve is:
   a. 6.25 million workers, $5.00 wage
   b. 5 million workers, $5.00 wage
   c. 4 million workers, $7.25 wage
   d. 6 million workers, $6.25 wage
   e. 5 million workers, $6.25 wage

21. With the minimum wage enforced, there will be excess _______ for workers of _____________.
   a. demand, 2 million workers
   b. supply, 2 million workers
   c. demand, 4 million workers,
   d. supply, 6 million workers
   e. none of the above

22. If the minimum wage were set at $6.00 per hour, we would observe worker supply of __________
   and _____________.
   a. 4.75 million workers, excess demand
   b. 4.75 million workers, excess supply
   c. 5.25 million workers, excess demand
   d. 5.25 million workers, excess supply
   e. 5 million workers, equilibrium

Background for 23 and 24. North Carolina is the home to pickle production in Mount Olive. The graph below describes supply and demand for these pickles. Use the information in this diagram to answer these questions.
23. The marginal monetary utility of the 200th jar of pickles is . If the price were $2 per jar, the net monetary utility of the 200th jar would be .
   a. $4.00, $1.50
   b. $4.00, $2.00
   c. $2.50, $1.50
   d. $2.50, $2.00
   e. none of the above

24. At the equilibrium price, the consumer surplus in this market is . The number of jars supplied is .
   a. $400, 400
   b. $200, 200
   c. $200, 400
   d. $400, 200
   e. none of the above

25. An indifference curve connects all of goods and services that are equally to the consumer.
   a. values, desirable
   b. values, affordable
   c. combinations, desirable
   d. combinations, affordable
   e. none of the above

26. The government of India prior to 1991 imposed high costs to exports and imports of goods and services. These costs have now been removed. Why would these imposed costs lead to less specialization than in India than we observe today?
   a. when a country specializes, it needs to export the goods it specializes in
   b. the high costs imposed made imports cheaper
   c. people preferred to buy cheaper, locally made products
   d. both a and b
   e. both a and c

27. When the price of automobiles increases, the demand for automobile tires . This is because the two are .
   a. rises, complements
   b. rises, substitutes
   c. falls, complements
   d. falls, substitutes
   e. none of the above
Background for questions 28, 29 and 30.

Ryan has started a new business— he's selling "Heel Springs" bottled water on football game day. He sells each bottle for $20. His production costs are outlined in the following table. He pays monthly rent on the Orange County spring where he gets his water, and he pays for bottles, labels and caps (BLC) for each bottle he produces. We also know the opportunity cost of his time; it's given in the last column of the table. He has done his research, and he knows he can sell as many as 1500 bottles per month. His goal is to get the largest economic profit from his business.

<table>
<thead>
<tr>
<th>Bottles sold</th>
<th>Fixed Rent</th>
<th>Variable BLC</th>
<th>Variable Opportunity cost of Ryan's time</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>$2,000</td>
<td>$3,000</td>
<td>+ $500 = $3,500 / $20 = $17.50</td>
</tr>
<tr>
<td>600</td>
<td>$2,000</td>
<td>$6,000</td>
<td>+ $1,500 = $7,500 / $20 = $37.50</td>
</tr>
<tr>
<td>900</td>
<td>$2,000</td>
<td>$9,000</td>
<td>+ $3,500 = $12,500 / $20 = $62.50</td>
</tr>
<tr>
<td>1200</td>
<td>$2,000</td>
<td>$12,000</td>
<td>+ $7,000 = $19,000 / $20 = $95.00</td>
</tr>
<tr>
<td>1500</td>
<td>$2,000</td>
<td>$15,000</td>
<td>+ $11,000 = $24,000 / $20 = $110.00</td>
</tr>
</tbody>
</table>

28. When Ryan calculates accounting profit he will __________ rent and __________ the opportunity cost of his time.
   a. subtract, exclude
   b. subtract, subtract
   c. exclude, exclude
   d. exclude, subtract
   e. none of the above

29. The optimal supplier rule indicates that Ryan should expand production to __________ because it's the last reported quantity with price __________ marginal cost.
   a. 600, less than
   b. 900, greater than
   c. 1200, less than
   d. 1500, greater than
   e. none of the above

30. Total variable cost for 900 bottles sold is
   a. $3500
   b. $9000
   c. $14500
   d. $12500
   e. none of the above
31. The United States has a trade deficit when its _____________ are greater than its _____________ for a given length of time.
   a. exports, imports
   b. profits, losses
   c. imports, exports
   d. losses, profits
   e. all of the above

32. Since the demand by teenagers for cigarettes is _____________ with respect to price, the cigarette companies' revenues from sales to teenagers _____________ when they raise the price of cigarettes.
   a. Elastic, fall
   b. Elastic, rise
   c. Inelastic, fall
   d. Inelastic, rise
   e. None of the above.