Print Code:_____ANSWERS_____

MA 110 Quiz 2

Multiple Choice. Choose the one alternative that best completes the statement or answers the question. Put the **letter** of your answer in the box provided.

Table 1.1 below describes an election with four candidates (A, B, C, D) and preference schedule:

Number of Votes	1	2	8	9
1st Choice	B	D	D	B
2nd Choice	C	C	A	D
3rd Choice	D	B	C	C
4th Choice	A	A	B	A

D

1. In Table 1.1, which candidate wins the election by the method of pairwise comparisons?
   a. A
   b. B
   c. C
   d. D
   e. There is a tie.

A vs B	8-12	B 1	Total Points
A vs C	8-12	C 1	A 0
A vs D	0-20	D 1	B 2
B vs C	10-10	B ½ C ½	C 1.5
B vs D	10-10	B ½ D ½	D 2.5
C vs D	1-19	D 1	Winner is D.

D

2. Using the plurality method, there is a tie in the election in Table 1.1. Which candidate wins the tie-breaker if you use bottom-up comparison?
   a. A
   b. B
   c. C
   d. D
   e. There is still a tie.

B and D are tied with 10 first place votes each.
Last place votes: B-8, D-0.
D wins.

A

3. Consider the weighted voting system [5: 3, 2, 1, 1]. Which player, if any, has veto power?
   a. P_1
   b. P_2
   c. P_3
   d. P_4
   e. No player has veto power.
   f. More than one player has veto power.

Removing P_1, the remaining weights do not add up to 5 or more.

G

4. Consider the weighted voting system [q: 3, 2, 2, 2, 1]. The largest reasonable value the quota q can take is
   a. 4
   b. 5
   c. 6
   d. 7
   e. 8
   f. 9
   g. 10
   h. 11

The sum of the weights is 10. The quota cannot exceed that.