

Name (**print clearly**): \_\_\_\_\_

You are taking this exam under the College of Engineering Honor Code. After completing the exam, please write and sign on the back, "*I have neither given nor received aid on this exam, nor have I concealed any violation.*"

1. (20%) Identify the following, as they pertain to this course:

turnkey

alternate

bid bond

lowest responsible bid

GC

bid shopping

double wales @ 24" o.c.

lump sum contract

vapor barrier

conditions of contract

2. (40%) (a) Write a **proposal** of Quality General Contractors to Down Town Merchants for a unit price contract with three pay items to construct concrete sidewalks for Down Town Merchants. Make up items as necessary to make a good example.

(b) Write a contract **agreement** between Quality General Contractors and Down Town Merchants. Make up items as necessary to make a good example.

3. (25%) Draw networks for the two sets of activity dependencies described below. The upper is activity on **arrow**. The lower is activity on **node**.

**ACTIVITY ON ARROW**

Start of these activities is dependent on	A	B	C	D	E	F	G	H	I	J	K	L
Finish of these activities	B F	L		F	F G	H	H K	C L	E J	A D	C	

**ACTIVITY ON NODE**

Start of these activities is dependent on	A	B	C	D	E	F	G	H	I	J	K	L
Finish of these activities		H	F	H L	C G		A F	G	B D	E H	I J	A

4. (15%) Using the following labor variables, show an equation for calculating  $C$  = estimated labor cost of an item to be constructed.

W = workers compensation

B = base pay

E = effort (hr per unit)

S = social security

I = insurance

V = vacation and holiday

P = pension

U = unemployment

Q = quantity

C = cost estimate