CEL 464 Construction Economics and Contract Management MAJOR
Venue V 315 8:00-10:00 AM 29.11.2006

ANSWER ALL QUESTIONS. ASSUME MISSING DATA WHEREVER REQUIRED.

Q 1 An agreement is reached between X and Y as indicated below. Which of them are valid contracts? Give brief reason for your answers. (1.5 x 4 =6 marks)

1. X agrees to remove flowers from the lawns of Z before a flower show, and Y pays X Rs. 2000 at the time of the signing the agreement and agrees to pay another Rs 5000 to X upon the completion of the job.
2. On May 10th, X prematurely encashes a term deposit from a bank (No 124). On May 15th X takes a loan of Rs. 1 lakh from Y with the promise to repay the loan when the term deposit (No. 124) in a bank matures on June 30th, 2005, and attaches a photocopy of the said document.
3. X proposes Y invest in a venture where whole sale purchase of cement will be made, and then arrangements will be made to distribute it to smaller dealers and consumers at a higher rate. Y agrees provided all purchases are made from a company of his choice.
4. X agrees to fabricate a hollow steel spherical shell of 3m diameter using appropriately curved 12 mm thick steel plates with all joints completely welded manually from the inside and outside for Y. The shell is required to store dangerous chemicals and only two holes for fixing nozzles having a diameter of 50mm are allowed in the shell. X agrees for the supply and commissioning of the sphere including testing, and given the challenging nature of the job, charges Rs. 1.5 lakh per MT. The charges are accepted by Y.

Q 2 The records of 10 previous bids in which you and your competitor have participated are given in the following table. The bidding behavior of a typical competitor against you, as a contractor, has revealed that *his bid/your* cost in take the following histogram. **(6 marks)**

Sl No.	B/C Ratio (Competitor's bid price ÷ your cost)	No of bids
01	1.04	2
02	1.08	4
03	1.12	1
04	1.16	2
05	1.2	1

(a) Based on the above behavior, what is the markup value that this competitor uses on average? What is the probability of winning this competitor if you use a markup of 14%?

(b) In a new project with a $1,000,000 estimated cost, what is your optimum markup strategy against four typical competitors using Friedman's model? What is the expected profit at optimal markup?

(c) Which model (Friedman/Gates) is more sensitive to the number of competitors and why?