Attempt both the problems. Each carry 5 marks.

Time allowed : 30 minutes

1. Let $S(0)$ = Rs.110, $u = 0.4\,, d = 0.1\ and\ r = 0.2$ consider a call option with strike price Rs.120. Find the Call option price and the number of stock in replicating portfolio, in two time steps.

2. Let $A(0)$ =\$ 90 and $A(1)$ =\$ 99 , $S(0)$ = \$75 and

   $$S(1) = \begin{cases} \$90 & \text{with probability } 0.8, \\ \$70 & \text{with probability } 0.2 \end{cases}$$

   Compute the expected return and risk for the portfolio (60,40).