

HUL212 - MICROECONOMICS

MINOR 2 EXAMINATION (Mar 24, 2014), IITD Sem II, AY 2013-14,

Time Allowed: 1 Hour (ANSWER ALL, Max. marks=30)

[Writing in answer script is an art - master this art by keeping your script clean].

Q1 (Quiz questions; True/false type; no explanations needed) [10 \* 1.5 = 15 marks]

(i) If the returns on two assets are negatively correlated, then a portfolio that contains some of each will have less variance in its return per rupee invested than either asset has by itself. (True) If there is Cobb-Douglas utility, compensating and equivalent variation are the same. (True) If there is an increase in price for a good that you consume, your compensating variation is the change in income that allows you to purchase your new optimal bundle at the original prices. (True) Marginal revenue is equal to price if the demand curve is horizontal. (True) The Laffer effect occurs only if there is a backward-bending labor supply curve. (True) If the price of insurance goes up, people will become less risk averse. (True) A risk-averse individual has the following two choices: (choice1) play a gamble that pays Rs. 1000 with a probability of 0.25 and Rs. 100 with a probability of 0.75; (choice2) go for a sure payment of Rs. 325. Which one does he choose? (choice1) If the marginal product of each factor decreases as the amount of that factor used increases, then there must be decreasing returns to scale. (True) The entire subsidy gets passed along to the consumers if the supply curve is horizontal. (True) Producer surplus includes net profit as well as fixed cost of production.

Q2 [10 marks] You have wealth of Rs  $W$ . Out of that, you recently bought a mobile that costs you Rs 20000. You are little forgetful and there are chances that you might lose your mobile. Once lost you will never get it back. You are risk averse having utility defined over wealth as  $U(W) = W^\delta$  with  $\delta \in (0, 1)$ . Assume that the probability of losing your mobile is  $p$ . There is an insurance firm which insures your mobile at a premium of  $\theta$  per rupee cover. Assume  $1 > \theta > p$  (insurance is unfair).

(a) Show that you have an incentive to buy the insurance. (2 marks) (i) Assume that you want to buy an insurance cover of Rs  $K$ . Can you solve the expression for  $K$  in terms of  $\theta$ ,  $p$  and  $W$ ? (4 marks) (ii) Your friend, who is richer than you in terms of her wealth endowment, has also bought the same mobile. Do you think her demand for insurance will be same as yours? (Show the result using a graph) (2 marks) (iii) It is generally claimed that people become less careful about their product when they got it insured. Would you like to be more forgetful to your mobile after insurance? (2 marks)

Q3 [5 marks] You love to visit Cafe Coffee Day (CCD) for cups of coffee whenever you get time off from study. One day you discovered that having some books/magazine/newspaper etc. display in CCD would have been perfect to you so that you can enjoy coffee with reading. CCD said that it can be provided given that consumers are willing to pay some extra (premium) price per cup of coffee since they are enjoying more facilities.

Assume that price per cup of coffee without book is  $p_c$  and with book is  $p_c + t$ . Your utility with coffee and book is represented by  $U(c, b)$  where  $b = 0$  imply no book and  $b = 1$  imply with book,  $c$  is cups of coffee. Utility takes the following form:  $U(c, 0) = c^{0.5}$  and  $U(c, 1) = \theta c^{0.5}$  where  $\theta > 1$ . Your income is  $y$  and you must balance your budget. How much extra would you like to pay for coffee with book facility?