MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE WITH INFORMATION TECHNOLOGY

MAIN CAMPUS

NES 401: ECONOMIC VALUATION FOR ENVIRONMENTAL PROTECTION

Date:22nd February, 2018   Time: 12.00 - 3.00pm

INSTRUCTIONS:

- Answer Question ONE and any other TWO

1. a)   Averted behaviour is a revealed preference method of valuation. Explain its applicability in environmental valuation.

[10 marks]

b)   Using a suitable analogy, desscribe how you can simulate a price for a zero priced environmental resources.   [10 marks]

c)   Describe and depict graphically the phenomenon of increasing productivity that is synonymous with decreasing marginal variable cost.

[10 marks]

2.   Free functioning markets cannot be relied upon to take care of the environment because they fail .Explain how the government intervenes to protect the environment when the market has failed.   [20 marks]

3. The table below shows hypothetical results obtained by observing consumer behaviour and by varying the price of a visit and seeing how many visits an average consumer makes per annum to Kit Mikayi which is a zero priced environmental resource. The value of the resource will be determined by individual preference expressed through Willingness To Pay.

WTP. Price paid and Consumer Surplus

1	2	3	4
No of visits	WTP (Sh.)	Price Paid (Sh.)	Consumer Surplus (Sh.)
0	550		
1	500		
2	400		
3	300		
4	200		
5	100		
6	0		
Totals			

a) Describe how you would determine:

   i) Actual price paid in the absence of a supply constraint
   [3 marks]

   ii) Total value
   [3 marks]

   iii) Consumer surplus
   [3marks]

b) Copy the table above and on the basis of entrance fee (WTP). fill in the blank spaces appropriately.
   [7 marks]

c) From the table above. derive a demand curve.   [4 marks]

4. Elucidate the inadequacies encountered when conducting environmental valuation using the Contingent Valuation Method (VCM)   [20 marks)

5. To measure the strength of individuals' preferences, Willingness To Pay (WTP) and Willingness To Accept (WTA) compensation can be used as a basis for Cost Benefit Analysis as illustrated below.

Individual 1:WTP to move to B = Sh.3500
Individual 2:WTP to move to B = Sh.3300
Individual 3:WTA to tolerate a move to B = Sh.3700
Individual 4:WTA to tolerate a move to B = Sh.3100

a) Illustrate the Cost Benefit rule that provides the foundation for Cost Benefit Analysis   [3 marks]

b) Using the above figures calculate and hence determine the well being of each individual from the move to B   [5 marks]

c) Given that the society is an aggregate of individuals as illustrated above. explain whether the move to B is socially worthwhile or not and give reasons for your answer.   [5 marks]

d) Based on the Cost Benefit rule, what would be your preferred advice to the society as far as the move to B is concerned?   [4 marks]

e) Explain how you can impute a potential Pareto improvement.
                                                                                        [3 marks]