PGDM / PGDM (IB), 2015-17

Data Envelopment Analysis

DM-441 / IB-441

Trimester – IV, End-Term Examination: September 2016

Time allowed: 2 hrs 30 min **Max Marks: 50**

Roll No: _____

Instruction: Students are required to write Roll No on every page of the question paper, writing anything except the Roll No will be treated as **Unfair Means.** In case of rough work please use answer sheet.

Section - A

Attempt any 4 out of 5 questions from this section. Each question carries 5 marks .

A1 Explain single input- single output ratio analysis. Find input and output target for inefficient firms from the following.

Firm	Capital employed in million	Value added in million
A	6.8	1.6
B	2.4	0.4
C	12.6	2.3
D	18.7	3.5

A2 Find out the efficiency of hospitals based on fixed weights of doctors : nurses with 5 : 1 and indoor patients : outdoor patients with 3 : 2 where doctors and nurses are considered as inputs and patients are treated as outputs.

A3 Enumerate typical inputs and outputs for performance measurement of

a) Airplanes b) Railways c) Car manufacturers

A4 Discuss the relationship between CCR and BCC model.

A5 Discuss the possibilities of inefficiency even if the efficiency for a decision making unit is 1.

Section B

Attempt any 2 out of 3 questions from this section. Each question carries 15 marks.

B1 What is output oriented CCR DEA model? Develop the output oriented CCR DEA model for the firm D from the following set of data

DMU	Capital employed in million	Number of employees in thousand	Value added in million
A	6.8	1.8	1.6
B	2.4	1.2	0.4
C	12.6	2.6	2.3
D	18.7	3.8	3.4
E	22.4	4.2	4.3
F	16.8	3.1	3.2

B2 Discuss the process of input excesses and output shortfalls for a variable return to scale input oriented model. How you are determining reference set for an inefficient DMU.

B3 Develop the input oriented variable return to scale model for the DMU B from the following set of data:

DMU	Capital employed in million	Number of employees in thousand	Value added in million
A	6.8	1.8	1.6
B	2.4	1.2	0.4
C	12.6	2.6	2.3
D	18.7	3.8	3.4
E	22.4	4.2	4.3