United International University (UIU)

Term Final Examination

IPE 401: Industrial Management

Summer Trimester: 2020

Total time: 1:15 hours Date: 4/10/2020 Total marks: 25

Section: A/B

There are 5 questions. You must answer question **1,2 &3**and any one of **4 &5**

1 Solve by using Simplex method, **[10]** **[CO4]**

Maximize, Z = 4x + 5y

subject to

3x + 5y <= 20

x + y <= 6

and x, y >= 0

2 Suppose you are a quality manager in "BASUS'' laptop manufacturer. You Found out that the laptops overheats and battery life is not as good as the competitors. . You also found out that the ram are not fitting well into the ram slot. All of these creating quality losses. So explain how you can reduce the losses according to different types of Taguchi loss function, with necessary sketches. **[4]** **[CO3]**

3 Between 6σ and 4σ which reduce variability more and which costs more? Explain with necessary sketches. **[4]** **[**CO3**]**

4 Sequence the following jobs of a tailor who needs a cutting machine and a sewing machine to make dresses. He needs to cut the cloths first and then it can be sewed. Apply Johnson's rule to sequence the jobs, draw a "Gantt chart" and find the idle time for both machines**.** **[7]** **[CO2]**

Job	Processing Time of Work center 1	Processing time of Work center 2
C	7	6
A	6	4
F	10	7
D	2	3
E	5	1
B	6	5

5 The demand for electrical power at N-Y Edison over the years 2003-2009 is given .Find the forecast value of 2003 and 2009.(α=0.19) Forecast value of year 2006 is 979 **[7]** **[CO2]**

Year	2003	2004	2005	2006	2007	2008	2009
Actual	999	989	998	919	938	967	971

CO1	Apply Engineering economics and simple mathematics for Solving project selection problems for choosing the best possible project
CO2	Analyze various industrial problems by using operation management, technique, operation research technique and solve it.
CO3	Understand the importance of quality control, and various industrial engineering techniques to improve the process in any engineering sector and how this affect the organization and customers
CO4	Analyze the optimization