

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, July 2020

Course: Supply Chain Network Design, Modelling & Simulation (MDSL 823)
Programme: MBA Logistics & Supply Chain Management
Max. Marks: 100

Semester: IV
Time: 03 hrs.

SECTION-A

Marks 30

S. No.	Attempt all questions	Marks	CO
Q 01	Fill in the blanks		
a)	Two types of algorithms for unconstrained problem are _____ and _____.	02	CO 4
b)	The different types of queue disciplines are _____, _____, _____ and _____.	04	CO 3
c)	The different types of network models are _____, _____, _____ and _____.	04	CO 2
Q 02	Choose the most suitable option from the alternates given below.		
	I Forecasts are never correct, but every organization and industry does forecasts because		
	a They want to know, how much wrong is their forecast?		
	b They endeavor to reduce to forecasting error		
	c They plan the future with wrong forecasts; something is better than nothing	05	CO 01 CO 03
	d None of the above		
	II MSE for forecasting errors 4, 8, -10, 6, -12, 8, is		
	a 85		
	b 78		
	c 65	05	CO 03
	d 71		
	III Long-term forecasts are done for the industry to help take decisions such as		
	a To understand industry growth rate		
	b To estimate and calculate growth in company market share		
	c To take investment decisions, if any	05	CO 01 CO 03
	d All the above		

IV Cyclic Effect on Time Series data is

- a Over a longer period than that in Seasonal Effect
- b It is due to inflation followed by recession in the industry
- c Both of the above
- d None of the above

**05 CO 01
CO 03**

SECTION-B

05x10 = 50 Marks

(ATTEMPT ANY FIVE OF THE SIX QUESTIONS : Q 03a, Q 03b, Q 03c, Q 03d, Q 03e, Q 03f)

- Q 03**
- A What is Mathematical Modelling; give example. **05 CO 01**
 - B Non-stationary Time Series data, has four components; what are they? **05 CO 02**
 - C What are the various types of network models? **05 CO 03**
 - D What are the distinct types of simulation models? **05 CO 04**
 - E What are the three kinds of decisions can be taken in modelling; give examples **05 CO 01**
 - F What are various elements of Queuing systems? **05 CO 03**

SECTION-C

01x20 = 20 Marks

Attempt the question

- Q 04** Sensitivity Report obtained by solving a Linear Programming Problem in the Solver software is given below. With reference to this, please state what the first table stands for; and, each column in it viz., Final Value, Reduced Cost, Objective Coefficient etc. Similarly, state what the second table stands for; and, each column in it viz., Final Value, Shadow Price, Constraint R.H. Side etc.

Microsoft Excel 16.0 Sensitivity Report

Worksheet: [New Microsoft Excel Worksheet.xlsx]Sheet1

Report Created: 3/27/2019 11:13:30 AM

Variable Cells

Cell	Name	Final Value	Reduced Cost	Objective Coefficient	Allowable Increase	Allowable Decrease
\$G\$7	Changing Cells X1	25	0	3	1	1
\$H\$7	Changing Cells X2	60	0	2	1	0.5

Constraints

Cell	Name	Final Value	Shadow Price	Constraint R.H. Side	Allowable Increase	Allowable Decrease
\$I\$4	F-Constraint	100	1	100	20	20
\$I\$5	C-Constraint	90	1	90	20	20
\$I\$6	D-Constraint	20	0	40	1E+30	20