UNIVERSITY OF PETROLEUM & ENERGY STUDIES

Centre: Dehradun

Examination	: End Semester Examination May 2017	Semester: II Semester
Programme & Branch	: MBA IB	Duration: 3 Hours
Course Code	: MBCE711	Max. Marks: 100
Course Title	: Trade Analytics	

Section A

Answer all the questions in the answer sheets **2 X 20 = 40 Marks**

1. Brief note on the followings:
    a. Time series and trend projections
    b. Moving average method
    c. Naïve forecasting method
    d. Exponential smoothing method
    e. Linear regression method
    f. Gravity method of trade

2. India and China has accumulated total export earnings annually from 2005 to 2015. Export figures (in US$ Millions) for the past 10 years. Develop a simple linear regression equation for this data to forecast the exports of both the countries for next five years.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
India's Exports	100352	121200	145898	181860	176765	220408	301483	289564	336611	317544	264381
China's Exports	761953	968935	1220059	1430693	1201646	1577763	1898388	2048782	2209007	2342343	2281855

Instructions for Section B

a) Laptops should be brought by the students.
b) Internet connection should be disabled.
c) Only Excel sheet, SPSS and Oracle Crystal Ball software are allowed to use in laptops.
d) The data sheet (excel) will be provided through the pen drive for answering next section.
e) After the problem is solved, you should write only the equations and interpretations in answer sheets.
f) Calculators, mobiles and other electronic devices are not allowed.
g) After exams are over, your worked out sheets will be collected by the invigilator through pen drive.
h) Personal pen drives are not allowed.

Section B

Answer all the questions **3 X 20 = 60 Marks**

1. Analyse the impact of various macroeconomic factors on India's export to USA by using traditional and modern gravity models of trade using the *SPSS* software.
    a. Data to be used for traditional gravity method: India's exports to USA, GDP of India, GDP of USA and average distance between India and USA.
    b. Data to be used for modern gravity method: India's exports to USA, GDP of USA, average distance between India and USA, INR vs US $, Population of USA.

2. Forecast the exports and imports of India, China, Brazil, Russia, UK and USA by using single moving average, double moving average, single exponential smoothing, and double exponential smoothing methods in *Oracle Crystal Ball* software.

   Also compare the historical data series and forecasted data series of the different models and identify the best model of forecasting. Generate the forecasted series and comparative picture of historical and forecasted series.

3. Forecast the product wise exports of India and China by using ARIMA and Multiple regression forecasting techniques in the *Oracle Crystal Ball* software. Also generate forecasted series and projected trend line.