Roll No: --------------------------

UNIVERSITY OF PETROLEUM
AND ENERGY STUDIES

Endd Semester Examination, March, 2017

Program/course: MBA OG/LSCM/ET/IB/IFM/AVM/PSM/PM/BA   **Semester – II**
Subject: Excel modeling   **Max. Marks   : 100**
Code   :MBBA 823   **Duration   : 3 Hrs**
No. of page/s: 4

Section-A

Attempt all questions   **[4 * 5 = 20]**

Q.1: Go by the following students' data sheet carefully and answer the questions thereof. Make use of absolute/ relative referencing carefully while answering.

Roll No	Name	Age	Marks	Status	Scholarship
R0001	Harshit	23	34		5000
R0002	Rakesh	28	66		4000
R0003	Ramesh	22	49		5000
R0004	Suresh	24	20		4000
R0005	Jaya	24	38		4000
R0006	Lokesh	26	84		4000

As a part of your answer, you have to create an spreadsheet on your sheet mentioning rows and columns and write functions to answer the following.

   a. Find the number of students with marks less than 40 **(40 being the passing criterion).**
   b. Find average marks of students who have "Passed", and having age less than or equal to 24.
   c. Find the total Scholarship amount to be disbursed, if only the "Passed" students are being awarded.
   d. Find the number of students with marks from 50-100

Attempt all questions [2 * 10 = 20]

Q.2. A retailer is interested to see whether customers spending on garments differ according to their age groups. Three age groups were identified namely below 18 years,19 to 40 years and 40 years above. The customers' spending data in terms of INR was recorded and ANOVA was performed to see the effects of age groups on spending. The following results were found:

SUMMARY				
Groups	*Count*	*Sum*	*Average*	*Variance*
Students	9	138	15.33	2.50
Businessman	9	190	21.11	11.61
Service class	9	299	33.22	5.94

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1500.222	2	750.1111	112.205	6.61E-13	3.402826
Within Groups	160.4444	24	6.685185			
Total	1660.667	26				

As a part of your answer:

a. Provide a detailed interpretations of the results.
b. Explicitly mention two implications of results obtained to the retailer.

Section-C

Attempt all questions [2 * 15 = 30]

Q.3:

A toy company has been marketing souvenir toys in conjunction with various professional sports teams in a number of cities. Over the past few years , this experience has provided some data on the effects of advertising on sales at different prices. A multiple regression model was built and run through Excel to see the effects of advertising and price changes on the sales revenue whose results are presented below:-

Regression Statistics	
Multiple R	0.96563
R Square	0.932441
Adjusted R Square	0.917428
Standard Error	8.688677
Observations	12

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	9377.479	4688.739	62.10818	5.415E-06
Residual	9	679.4379	75.4931		
Total	11	10056.92			

Variables	Coefficients	Standard Error	t Stat	P-value
Intercept	-10.1156688	16.60641498	-0.60914	0.557492
Advertising	4.113261	0.415863507	9.890892	3.92E-06
Price	3.4384676	1.627716142	2.112449	0.063815

    a. As a part of your answer, give a detailed interpretation of the results obtained. Test the results at 5 % level of significance.

    b. Mention any two recommendations to the company justified through the above results.

Section-D

Attempt all questions   **[1 * 30 = 30]**

Q.4.

Veerman furniture company makes three kinds of office furniture namely chairs , desks and tables. Each product requires some labour in the parts fabrication department, the assembly department and the shipping department. The furniture is sold through a regional distributor which has estimated the maximum potential sales for each product in the coming quarter. Finally the accounting department has provided some data showing the profit contributions on each product. The decision problem is to determine the product mix that is—to maximize Veerman's profit for the quarter by choosing production quantities for the chairs, desks and tables. The data shown in the following table summarizes the parameters of the problem:-

Hours per unit				
Department	Chairs	Desks	Tables	Hours Available
Fabrication	4	6	2	1850
Assembly	3	5	7	2499
Shipping	3	2	4	1500
Demand	360	300	100	
Profit	$15	$24	$18	

As a part of your answer:

a) Transform the above decision problem into a linear mathematical model
b) Build an excel model to solve the problem using MS Solver. You should create an excel like spreadsheet while writing functions and formula in the appropriate box indicating the references to the cells made.