CONFIDENTIAL

Name of Examination (Please tick, symbol is given)	:	MID		END	✓	SUPPLE	
Name of the College (Please tick, symbol is given)	:	COES		CMES		COLS	✓
Program	:	BBA LLB (Hons.) Banking and Finance, Int BBA (LLB), Int BCom (LLB)					
Semester	:	II					
Name of the Subject (Course)	:	Business Mathematics					
Course Code	:	CLNL1016					
Name of Question Paper Setter	:	Dr. Payel Das					
Employee Code	:	40001644					
Mobile & Extension	:	7003118651					

Note: Please mention additional Stationery to be provided, during examination such as Table/Graph Sheet etc. else mention "NOT APPLICABLE":

NOT APPLICABLE

Note: - Pl. start your question paper from next page

UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2018

Program: BBA LLB (Hons.) Banking and Finance, Int BBA (LLB), Int BCom (LLB)
Semester – 2nd
Subject (Course): Business Mathematics
Max. Marks   : 100
Course Code   : CLNL1016   **Duration   : 3 Hrs**
No. of page/s: 04

(Scientific calculators are allowed for the examination)

Section A

(5 X 4 marks =20 marks)

1. Define   a) Event space   b) Conditional probability
2. Define probability theorem of addition.
3. Define coefficient of range and coefficient of quartile deviation.
4. If the arithmetic mean of data   40, 10, 70, 30, 50, X, 60 is 40. Find the value of X.
5. Give the statement of Bayes' theorem.

Section B

Attempt any two questions   **(2 X 10 marks = 20 marks)**

6. The odds that A speaks the truth is 3:2 and the odds that B speaks the truth is 5:3. In what percentage of cases are they likely to contradict each other on an identical point?

7. Suppose that there is a chance for a newly constructed house to collapse whether the design is faulty or not. The chance that the design is faulty is 10%. The chance that the house collapses if the design is faculty is 95% and otherwise it is 45%. It is seen that a house collapsed. What is the probability that it is due to faulty design?

8. An article manufactured by a company consists of two parts A and B. In the process of manufacture of part A, 9% are likely to be defective. Similarly, 5% are likely to be defective in the manufacture of part B. Calculate the probability that the assembled part will not be defective.

Section C

Attempt any three questions   **(3 X 10 marks =30 marks)**

9. A man travelled by car for 3 days. He covered 480 km each day. On the first day he drove for 10 hours at 48 km an hour, on the second day he drove for 12 hours at 40 km an hour, and on the last day he drove for 15 hours at 32 km per hours. What was his average speed?

10. In two factories A and B engaged in the same industry, the average monthly wages and standard deviations are as follows :

Factory	Average Monthly wages	S. D. of wages	No. of wage earners
A	4,600	500	100
B	4,900	400	80

What is the combined mean and Standard deviation of all workers in two factories taken together?

11. You are given the following information about advertising expenditure and sales:

	Adv. Exp. (X) (Rs. Lakhs)	Sales (Y) (Rs. Lakhs)
Mean	20	100
S.D.	3	12

Coefficient of correlation r = 0.8. What should be the advertising expenditure if the company wants to attain sales target of Rs. 120 lakh?

12. Calculate coefficient of variation from the following data:

No. of days absent:	0-5	5-10	10-15	15-20	20-25	25-30
No. of students:	29	140	250	108	52	21

Section D

Attempt any two questions   **(2 X 15 marks =30 marks)**

13. Calculate mean, third quartile and mode from the following data:

Marks	No. of students
10-20	4
20-30	12
30-40	40
40-50	39
50-60	29
60-70	13
70-80	3
80-90	10

14. Based on the frequency distribution given below, compute the following statistical measures to characterize the distribution:

i)   Standard deviation,   ii) Coefficient of variation,   iii) Variance

Annual Tax paid (Rs. Thousand)	No. of managers
5-10	18
10-15	30
15-20	46
20-25	28
25-30	20
30-35	12
35-40	6

15. Calculate the coefficient of correlation and two regression lines for the following data:

Country	% of group smoking heavily	% of group with lung cancer
A	10	5
B	20	15
C	20	20
D	30	25
E	30	20

Hence find the probable percentage of group with lung cancer in a country with   45% of group smoking heavily.