No. of Printed Pages : 06 BBAL 104/BCL 104

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 9104/ 9304	Roll No.										

Int. LL.B Examination 2015-2016

(First Semester)

QUANTITATIVE ANALYSIS AND BUSINESS MATHEMATICS

Time : 3 Hours] *[Maximum Marks : 100*

Note :- (i) Attempt all section.

(ii) Section A carries 20 marks, Section B carries 30 marks and Section C carries 50 marks.

SECTION - A

1. Fill in the blanks. All parts are compulsory : 10×2=20

(a) The curve is normal if β_2 = ...

(b) μ_2 = ... in Kurtosis.

(c) Spearman's Rank corretation coefficient

r = 1 ....

[P. T. O.

(d) If two regression coefficient are, –0.1 and –0.9, the value of r is ....

(e) From a pack of well shuffled cards, one card is drawn randomly. A gambler bets it is a diamond or a king the odds in favour of his winning the bet are ....

(f) If the probability of n independent events are p_1, p_2, ..., p_n, then the probability that at least one of the event will happen is ....

(g) If $A \subseteq B$, then $A \cap B =$ ....

(h) If $A = \begin{bmatrix} 1 & 0 \\ 2 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 1 \\ 4 & 2 \end{bmatrix}$,

then $A + B =$ ....

(i) If a, b, c are in Arithmetic progression

then $a + c =$ ....

(j) If L.P.P. the objective function and constrants are ....

(k) If $A \subseteq B$ and $B \subseteq A$, then A .... B.

(l) Kurtosis measures degree of ....

(m) If correlation is perfect, then r = ...

(n) Both lines of regression between x and y pass through the point (.........., ...).

(o)A square matrix A is non singular if ....

(p) If two events A and B aremutually exclusive, then $A(A \cap B) =$ ....

(q) The probability of an imporssible event is ....

(r) Two matrices can be added if they have same ....

(s) Median is also known as positional ....

(t) If $\beta_2 < 3$, then the curve is known as ....

SECTION - B

Note :-Answer any three question out of five : 3×10=30

2. Write short notes on linear programming.

[P. T. O.

3. State and prove the addition theorem of probability for two mutually exculsive events.

4. If $A = \begin{bmatrix} 1 & -2 & 3 \\ 2 & 3 & -1 \\ -3 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 1 & 2 \\ 1 & 2 & 0 \end{bmatrix}$

   from the products AB and BA, show that $AB \neq BA$.

5. If 3% of electric bulbs manufactured by a company are defective, find the probability that in a sample of 100 bulbs exactly five bulbs are defective.

6. For any set A and B, show that

   $(A-B)\,(B-A) = (A \cup B) - (A \cap B)$

SECTION - C

Note :-All questions are compulsory. 12½×4=50

7. (a) $A = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 3 & 5 \\ 1 & 5 & 12 \end{bmatrix}$

   find A^{-1}

OR

(b) Explain with examples :

(i) Frequency Curve

(ii) Ogive Curve

(iii) Mean

(iv) Median

8. (a) Explain Normal, Binomial and Poission distribution.

OR

(b) If probability of failure in physics practical examination is 20%. If 25 batches of 6 students each take the examinations. In how many batches 4 or more students would pass?

9. (a) Explain in detail :

(i) Adjoint of Square Matrix

(ii) Property of Adjoint Matrix

(iii) Inverse of a Matrix

OR

(b) Determine the values of α, β, γ when

$$\begin{bmatrix} 0 & 2\beta & \gamma \\ \alpha & \beta & -\gamma \\ \alpha & -\beta & \gamma \end{bmatrix}$$

is orthogonal.

10. (a) Describe the chief characterstics of the Normal curve. Why is this curve given a central place in statistics?

OR

(b) Find the Arithmetic mean of the following data :

Classes	Frequency
10–20	4
20–40	10
40–70	26
70–120	8
120–200	2

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