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

PAPER ID : 27104   Roll No. ☐☐☐☐☐☐☐☐☐☐

Integrated BBA & MBA

Examination 2019-2020

(Odd Semester)

QUANTITATIVE ANALYSIS FOR MANAGEMENT

Time : 3 Hours]   *[Maximum Marks : 60*

Note :   (i) The question paper consists of three A, B and C.

      (ii) All section are compulsory.

      (iii) Students are allowed to use only simple calculator during the examination.

SECTION – A

1.   Attempt all parts of the following : $1 \times 8 = 8$

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(a) What do you understand by a cumulative frequency distribution?

(b) What is meant by power set?

(c) Define Median.

(d) Define standard deviation. Explain its uses.

(e) Define nilpotent matrix.

(f) What do you mean by LPP?

(g) Define the term Binomial probability distribution.

(h) Define correlation.

SECTION – B

2. Attempt any two parts of the following : $2 \times 6 = 12$

(a) If P anc Q are two sets such that $n (P \cup Q) = 75$, $n (P \cap Q) = 17$ and $n (P) = 49$ find $n (Q)$.

(b) Find the inverse of :

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 6 & 7 & 9 \end{bmatrix}$$

(c) Find the average marks of the students from the following data :

Marks	No. of students
10	15
20	35
30	60
40	84
50	96
60	127
70	198
80	250

(d) Define probable error and standard error of the correlation coefficient. Discuss their uses.

SECTION – C

Note : Attempt all questions. Attempt any two parts from each question : $5 \times 8=40$

3. (a) Define statistics and discuss its applications in managerial decision making.

   (b) If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ $A = \{2, 4, 6, 8\}$ and $B = \{2, 3, 5, 7\}$ verify that :

   (i) $(A \cup B)' = (A' \cap B')$

   (ii) $(A \cap B)' = (A' \cup B')$.

   (c) Prepare histogram and frequency polygon for the following frequency distribution.

Classes	Frequency
10-20	7
20-40	20
40-50	25
50-70	18
70-80	11
80-90	6

4. (a) How to ascertain kurtosis with the help of B_2?

   (b) Calculate standard deviation from the following data :

Age (in year)	No. of students
4-6	30
6-8	90
8-10	120

[P. T. O.

10-12	150
12-14	80
14-16	60
16-18	20

(c) Find the value of Q1, Q3, D8 and P15 from the following frequency distribution.

Class	Frequency
10-14	3
15-19	7
20-24	16
25-29	12
30-34	9
35-39	5
40-44	3

5.   (a) Solve the simultaneous equation :

$$x + y + z = 3$$

$$x + 2y + 3z = 4$$

$$x + 4y + 9z = 6.$$

(b) Explain the procedure of generating extreme point solutions to an LP problem, pointing out the assumption made, if any.

(c) Solve the following linear programming problem by graphical method.

Max $z = 9x + 10y$

Subject to

$$11x + 9y \leq 9900$$

$$7x + 12y \leq 8400$$

$$6x + 16y \leq 9600$$

where $x \geq 0$ $y \geq 0$

6.   (a) Describe the addition and multiplication rule of probability with an example for each.

(b) Calculate the coefficient of rank correlation for the following data.

X	Y
80	110
78	111
75	114
75	114
68	114
57	116
60	115
59	117

(c) Compute the two regression coefficient using the value of active means x and y from the data given below and then work out the value of r.

X	Y
7	6
4	5
8	9
6	8
5	2

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