Printed Pages : 6

BM205

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

PAPER ID : 293205

Roll No.

MAM

(SEM. II) THEORY EXAMINATION, 2014-15

BUSINESS STATISTICS

Time : **3** Hours] [Total Marks : **50**

Section - A

1 Answer any four of the following. All questions carry equal marks. (4×10)

(a) What do you understand by Business Statistics? Explain the role of statistics in business decision making.

(b) What do you understand by Decision making under uncertainty? What are the criterias used for taking decisions under condition of uncertainty?

(c) What are the various measures of Central tendency? Discuss the relative merits and demerits of each.

(d) What do you understand by dispersion? Why Standard Deviation is the best measure of dispersion?

(e) What is Normal Distribution? Discuss the properties of Normal Distribution.

Section - B

1 Answer any two of the following. All questions carry equal marks. (2×6)

(a) Write short notes on Statistical thinking and analysis.

(b) What are various sources of Data Collection? Differentiate between Primary and Secondary Data.

(c) Discuss various types of statistical methods.

2 Answer any two of the following. All questions carry equal marks. (2×6)

(a) Write short note on Decision Tree Analysis.

(b) Consider the following payoff matrix:

Alternative Investment	Economic Conditions		
	Accelerated Growth (in Rs)	Normal Growth (in Rs)	Slow Growth (in Rs)
Stocks	10,000	6,500	-4,000
Bonds	8,000	6,000	1,000
Savings	5,000	5,000	5,000

Determine the best investment plan using each of the following criteria: (i) Laplace (ii) Maximin (iii) Maximax (iv) Hurwicz with coefficient of optimism $\alpha = 0.6$

(c) A Physician purchases a particular vaccine on Monday of each week. The vaccine must be used within the week following, otherwise it becomes worthless. The vaccine costs Rs 2 per dose and the Physician charges Rs 4 per dose. In the past 50 weeks, the Physician has administered the vaccine in the following quantities.

Doses per week	Number of Weeks
20	5
25	15
50	25
60	5

On the basis of EMV, find how many does the Physician must purchase each week to maximize his profits.

3 Answer any two of the following. All questions carry equal marks. (2×6)

(a) Explain the relationship between mean, median and mode.

(b) If the median of the following frequency distribution is 46, find the missing frequencies f_1 and f_2

Variable	10–20	20–30	30–40	40–50	50–60	60–70	70–80	Total
Frequency	12	30	f_1	65	f_2	25	18	229

(c) Calculate Mode of the following series :

Class Interval	10–19	20–29	30–39	40–49	50–59	60–69	70–79
Frequency	10	12	18	30	16	6	8

4 Answer any two of the following. All questions carry equal marks. (2×6)

(a) Distinguish between Dispersion and Skewness.

(b) From the data given below, state which series is more variable?

Values	Series A	Series B
10–20	10	18
20–30	18	22
30–40	32	40
40–50	40	32
50–60	22	18
60–70	18	10

(c) The Table below shows Statistical Data:

Age is Years	No. of Person
4-8	6
8-12	10
12-16	18
16-20	30
20-24	15
24-28	12
28-32	10
32-36	6
36-40	2

Compute (i) Quartile Deviation (ii) Bowley's coefficient of skewness.

5 Answer any two of the following. All questions carry equal marks. (2×6)

(a) Define independence of two events and mutually exclusive events. Can two events be independent and mutually exclusive simultaneously? Justify your answer with a suitable illustration.

(b) A workshop produces 2000 units per day. The average weight of units is 130 kg with SD of 10 kg. Assuming Normal Distribution, how many units are expected to weigh less than 142 kg.

(c) If the probability is 0.75 that a person will believe a rumour about the transgressions of a certain politician, find the probabilities that:

(i) The eighth person to hear the rumour will be the fifth to believe it.

(ii) The fifteenth person to hear the rumour will be the tenth to believe it.