



**I Semester M.B.A. Degree Examination, January/February 2018  
(CBCS) (2014-15 and Onwards)**

**MANAGEMENT**

**Paper – 1.4 : Statistics for Management**

Time : 3 Hours

Max. Marks : 70

**Instruction :** Calculators and statistical tables are **allowed**.

**SECTION – A**

Answer any five questions from the following. Each question carries five marks (5×5=25)

- Briefly explain with illustrations how tables and graphs may be used to present data.
- Explain the concepts of skewness and kurtosis with suitable illustrations.
- Calculate the straight line trend through the method of least squares for the data given below :

	2013	2014	2015	2016	2017
<b>Product on in M.T</b>	186	194	210	225	235

Also find the possible production figures of 2018 and 2019.

- Using the Chi Square Test, determine whether the medicine given to cattle was effective or not.

	Took Medicine	Did not take Medicine	Total
Fell ill	150	230	380
Did not fall ill	375	420	795
Total	525	650	1175

You may use a 5 percent level of significance.

P.T.O.





5. Use the coefficient of variation to determine which of the 2 students are consistent in performance

Details	Maths	Science	History	Geography
Student A	55	65	80	70
Student B	93	87	30	40

6. What is meant by sampling ? Explain the different methods of sampling.
7. A company manufactures metal boxes. The monthly production is 4500 boxes. If the average diameter of the boxes is 6 cm and the standard deviation is 3 cm, find
- How many boxes have a diameter between 9 cm and 12 cm.
  - How many boxes have a diameter between 5 cm and 2 cm.

Illustrate every answer with a suitable diagram.

### SECTION - B

Answer **any 3** questions. Each carries **10** marks.

(3×10=30)

8. A businessman has 2 options for investment

Option A : He can open a restaurant for Rs. 10,00,000. He can expect success with a cash inflow of Rs. 14,00,000 at a probability of 75 per cent. If he fails, he can still salvage Rs. 6,00,000.

When he succeeds he can open a fast food kiosk for Rs. 7,00,000. The chances of success are 80 per cent with a cash inflow of Rs. 6,00,000. If he fails, he loses Rs. 1,00,000.

Option B : He can open a Gym for Rs. 12,00,000. The chances of success are 60 per cent with a cash inflow of Rs. 8,00,000. If he fails, he can still salvage Rs. 6,00,000.

You are expected to

- Draw a decision tree.
- Construct a pay off table and state your decision as to which option is profitable for the businessman.



9. Find Fischer's ideal index for the following data and prove that it satisfies the factor reversal and time reversal tests.

Components	$P_0$	$Q_0$	$P_1$	$Q_1$
Rice	40	10	50	12
Wheat	45	9	55	10
Oil	70	10	75	11
Fuel	80	12	90	15
Clothing	30	15	40	20

10. Explain in detail the process of setting up and testing a hypothesis. You are expected to explain with suitable illustrations all the involved concepts.
11. A common exam was taken by 3 students in four different cities.

Using the ANOVA test, decide whether there is a significant difference in the academic performance of the students in different cities

Cities/Students	Marks of Student A	Marks of Student B	Marks of Student C
City One	60	70	45
City Two	70	65	55
City Three	75	55	85
City Four		90	75

You may use a 5 per cent level of significance.

### SECTION – C

Compulsory case study.

(1×15=15)

12. For the data given herein, you are required to :
- Find the coefficient of correlation
  - Find the probable error and comment on the significance of correlation.
  - Find the regression equations.
  - Find Y when X = 50 and find X when Y = 45.

X	40	55	60	80
Y	42	58	67	90

