Q.P. Code : 62205

First Semester M.B.A. (Day/Evening) Degree Examination, February/March 2020

(CBCS Scheme)

Management

Paper 1.5 — BUSINESS STATISTICS

Time : 3 Hours] *[Max. Marks : 70*

Note : Calculators and Statistical Tables are allowed.

SECTION – A

Answer any **FIVE** questions. Each question carries **5** marks : **(5 × 5 = 25)**

1. Explain the scope of Statistics in Managerial Decision Making.

2. Define the following concepts:

   (a) Null hypothesis and alternative hypothesis

   (b) Type I and Type II errors

   (c) Confidence limits

   (d) One tailed and two tailed tests

3. Five students A, B, C, D and E are given a problem to solve. The probabilities are 0.25, 0.20, 0.35, 0.52 and 0.65 of solving problem. What is the probability that atleast one of the student solves the problem?

4. For a group of 20 items $\Sigma x = 1452$, $\Sigma x^2 = 144280$ and median = 69.3. Find the Pearsonian Co-efficient of skewness.

5. Fit a linear trend by the method of least squares and estimate the number of patients for the years 2016 and 2017 from the following data.

Years :	2009	2010	2011	2012	2013	2014	2015
Patients in lakhs :	19	21	25	29	26	27	32

6. From the following information, find whether mentoring has an impact on the performance index.

Performance Index	Mentoring Done	No Mentoring
High	200	50
Average	150	70
Very Low	35	30

7. Test the hypothesis of no difference between the ages of male and female employees of a certain company using U test for the sample data. Use 0.05 level of significance.

Males :	31	25	38	33	42	40	44	26	43	35
Females :	44	30	34	47	35	32	48	34		

SECTION – B

Answer any **THREE** questions. Each question carries **10** marks : **(3 × 10 = 30)**

8. (a) What is business forecasting? Mention its methods.

   (b) Distinguish between variance and co-efficient of variance.

   (c) Define and explain the main characteristics of a Binomial Distribution.

   (d) Graphs and diagrams have an advantage over written reports. Comment briefly.

9. The following data gives the work experience of machine operators in a factory and the number of units of production turned out per day.

Machine Operator :	1	2	3	4	5	6	7	8	9
Work Experience in years :	6	8	7	5	2	1	3	9	10
Units of production :	50	60	54	47	25	20	41	62	70

   (a) Calculate the regression lines and estimate the probable units of production of a machine operator with an experience of 12 years.

   (b) Estimate the probable years of experience of a machine operator whose daily production is 85 units.

10. Calculate the consumer price index by the method of (a) Aggregative expenditure and (b) Family budget for the given data.

Commodity	Quantity in 2016	Price in 2016	Price in 2018
A	200	12	17.00
B	40	10	12.50
C	15	8	9.25
D	30	50	60.00
E	35	25	27.50
F	50	15	30.00

11. A company 'X' has 2 options to sell its products. It can set up a show room in the city or can sell from his factory outlet. Setting up a showroom will cost Rs. 7,00,000 with a 60% probability of success. If the showroom succeeds, it can gross a net profit of Rs. 15,00,000 per year. If it fails, it can close the showroom or rent it out for an annual rent of Rs. 3,50,000. The probability of getting rent is 80%.

    If it sells from the factory outlet, it has to incur Rs. 75,000 as renovation charges. The chances of successful selling here is 45% with a net profit of Rs. 4,75,000 per year.

    What will be your advise to the company? How a decision tree will help the company?

SECTION – C

12. Case Study **Compulsory** : **(1 × 15 = 15)**

    Four judges of soft skills assessment test gave the following marks to six candidates. Test whether there is a significant difference in

    (a) the performance of the six candidates

    (b) the judgement of the four judges.

Judges	Candidates					
	A	B	C	D	E	F
1	11	12	13	15	10	12
2	14	13	16	15	17	15
3	10	12	14	16	15	18
4	16	14	15	19	16	14