Roll No. | | | | | | | | | | | | **Total No. of Pages : 03**

Total No. of Questions : 17

M.Com. (2018 & Onwards) (Sem.–1)

STATISTICAL ANALYSIS/QUANTITATIVE TECHNIQUES

Subject Code : MCOP-103-18

M.Code : 75335

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A contains EIGHT questions carrying TWO marks each and students has to attempt ALL questions.**
2. **SECTION-B consists of FOUR Subsections : Units-I, II, III & IV. Each Subsection contains TWO questions each carrying EIGHT marks each and student has to attempt any ONE question from each Subsection.**
3. **SECTION-C is COMPULSORY and consist of ONE Case Study carrying TWELVE marks.**

SECTION-A

1. What is central tendency ?
2. What is Skewness ?
3. What is multiple correlation ?
4. Define conditional probability.
5. Define Binomial Distribution.
6. Differentiate between Transportation and Assignment problems.
7. Define Regression Coefficient.
8. Define CPM.

SECTION-B

UNIT-I

9. What are functions of statistics? Compare various measures of variation.

10. The scores of two batsman A and B in ten innings during a certain season are :

A	32	28	47	63	71	39	10	60	96	14
B	19	31	48	51	67	0	10	62	40	80

Find (using coefficient of variation) which of the two batsman, A or B, is more consistent in scoring.

UNIT-II

11. The following table gives the distribution of items of production and also the relatively defective items among them, according to size-groups. Find the correlation coefficient between sizes and defect in quality and its probable error;

Size-group	15-16	16-17	17-18	18-19	19-20	20-21
No. of items	200	270	340	360	400	300
No. of defective items	150	162	170	180	180	114

12. The following table shows the ages (X) and blood pressure (Y) of 8 persons.

X	52	63	45	36	72	65	47	25
Y	62	53	51	25	79	43	60	33

Obtain the regression equation of Y on X and find the expected blood pressure of a person who is 49 years old.

UNIT-III

13. Compare Binomial Distribution, Poission Distribution and Normal Distribution with their properties and applications.

14. Use the graphical method for solving the following game and find the value of the game :

Player A	**Player B**			
	B1	**B2**	**B3**	**B4**
A1	2	2	3	–2
A2	4	3	2	6

UNIT-IV

15. Solve the following transportation problem using Vogel's Approximation Method :

Demand (D)/Supply(S)	**D1**	**D2**	**D3**	**D4**	**Capacity**
S1	19	30	50	10	7
S2	70	30	40	60	9
S3	40	8	70	20	18
Demand	5	8	7	14	34

16. A solicitors' firm employs typists on hourly piece-rate basis for their daily work. There are five typists and their charges and speeds are different. According to an earlier understanding only one job was given to one typist and the typist was paid for a full hour, even if he worked for a fraction of an hour. Find the least cost allocation for the following data :

Typist	Rate/hour (Rs.)	No. of Pages Typed/Hour	Job	No. of Pages
A	5	12	P	199
B	6	14	Q	175
C	3	8	R	145
D	4	10	S	28
E	4	11	T	178

SECTION-C

17. Solve the following case study :

A small petroleum company own two refineries. Refinery A costs $20,000 per day to operate and it produces 400 barrels of high-grade oil, 300 barrels of medium-grade oil, and 200 barrels of low-grade oil per day. Refinery B uses latest technology and costs $25,000 per day. It can produce 300 barrels of high-grade oil, 400 barrels of medium-grade oil and 500 barrels of low grade oil each day. The company has orders, totaling 25,000 barrels of high grade oil, 27,000 barrels of medium-grade oil, and 30,000 barrels of low-grade oil.

***Question* :**

How many days should it run each refinery to minimize its costs and still refine enough of oil to meet its orders?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.