RUII NU.	 		 	 	 	 

Total No. of Pages : 03

Total No. of Questions : 17

# M.Com. (2018 & Onwards) (Sem.–1) STATISTICAL ANALYSIS 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

Answer the following questions in 2-3 lines :

- 1. Define statistics.
- 2. What is Kurtosis?
- 3. What is non-linear correlation?
- 4. What is Bayes' Theorem?
- 5. Define Poission Distribution.
- 6. What is Game Theory?
- 7. Define Transportation Model.
- 8. Define PERT.

## SECTION-B

### UNIT-I

Q9. What is the importance of statistics? Compare various measures of central tendency.

Q10. Calculate the median and mode (by grouping method) from the following data :

Central Size	15	25	35	45	55	65	75	85
Frequencies	5	9	13	21	20	15	8	3

#### UNIT-II

Q11. Find Karl Pearson's coefficient of correlation between the values of X and Y given below and calculate probable error :

Х	78	89	96	69	59	79	68	61
Y	125	13	156	112	107	136	123	108

Q12. The following data relates to the scores obtained by 9 salesmen of a company in an intelligence test and their weekly sales in thousands rupees :

Salesmen	А	В	С	D	Е	F	G	Н	Ι
Intelligence test scores	50	60	50	60	80	50	80	40	70
Weekly sales	30	60	40	50	60	30	70	50	60

- a) Obtain the regression equation of sales on intelligence test scores of the salesmen.
- b) If the intelligence test score of a salesman is 65, what would be his expected weekly sales?

#### UNIT-III

- Q13. Compare Binomial Distribution, Poission Distribution and Normal Distribution with their properties and applications.
- Q14. Solve the following game after reducing it to  $2 \times 2$  game :

Player A	Player B							
	B1	B1 B2 B3						
A1	1	7	2					
A2	6	2	7					
A3	5	1	6					

### UNIT-IV

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

Q15. Solve the following transportation problem using Vogel's Approximation Method :

Q16. A department of a company has five employees with five jobs to be performed. The time (hours) that each man takes to perform each job is given in the effectiveness matrix :

			Em	ployees		
		I	II	III	IV	V
	A	10	5	13	15	16
Jobs	В	3	9	18	13	6
	С	10	7	2	2	2
	D	7	11	9	7	12
	E	7		10	4	12

## SECTION-C

Q17. 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. 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.