M.Com. DEGREE EXAMINATION,APRIL 2020
I Year II Semester
Quantitative Techniques for Business Decisions

Time : 3 Hours **Max.marks :75**

Section A $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. What is Binomial distribution
2. A coin is tossed twice. Find the probability of getting at least one head.
3. What is sampling distribution?
4. State the meaning of null hypothesis
5. In 324 throws of a six-faced die, odd points appeared 181 times. Would you say that the die is fair?
6. Differentiate Correlation and regression.
7. Give details – regression equation of Y on X
8. Calculate the coefficient of correlation from the following: Regression equation of X on Y (X = 1.029Y + 5.652) and Y on X (Y= 0.91X – 4.38)
9. What you meant by 'artificial variable'
10. State the meaning -'crossed out'
11. What is EVPI?
12. What is game theory?

Section B $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. List out importance of the normal distribution
14. What are the procedures for testing of hypothesis?
15. The life time of electric bulbs for a random sample of 10 from a large consignment gave the following data:

Item	1	2	3	4	5	6	7	8	9	10
Life in '000 hours	4.2	4.6	3.9	4.1	5.2	3.8	3.9	4.3	4.4	5.6

16. The following are the ranks obtained by 10 students in statistics and mathematics:

Statistics	1	2	3	4	5	6	7	8	9	10
Mathematics	1	4	2	5	3	9	7	10	6	8

To what extent is the knowledge of students in the two subjects related?

17. Draw a network and determine the critical path of the project.

Activity	A	B	C	D	E	F
Time	6	8	4	9	2	7
Predecessors	None	A	A	B	C	D

18. Solve the transportation problem for the minimum cost.

					Available
	6	1	9	3	70
	11	5	2	8	55
	10	12	4	7	90
Demand	85	35	50	45	

19. At a petrol bunk, customers arrive in a poisson process with an average time of 5 minutes between arrivals. The time-intervals between services follow exponential distribution with a mean time of 2 minutes. By how much should the flow of customers be increased to justify the opening of a second service point if the management is willing to open the same provided the customer has to wait for 5 minutes for the service?

Section C $(2 \times 15 = 30)$ Marks

Answer any **TWO** questions

20. What is T test? Explain its significance for small samples?

21. The heights (in cms) and in weights (in kgms) of a random sample of 8 adult males are shown in the following data.

Heights (x)	177	163	173	182	171	168	174	184
Weights (y)	71	67	77	85	69	62	73	80

i.) Calculate the coefficient of correlation
ii.) Draw the least square regression line of x on y.
iii.) Draw a scatter diagram and the fitted line x on y.

22. Construct the following network whose activities and their relationships are given below.

Jobs	1-2	2-3	3-4	3-7	4-5	4-7	5-6	6-7
Duration (Days)	3	4	4	4	2	2	3	2

Find the total float, free float and the critical path.

23. Solve the game whose pay-off matrix is

		Player B		
		1	2	3
Player A	1	4	-1	5
	2	0	5	3
	3	5	3	7

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