

M.B.A. CBCS Pattern Semester-I  
**PCB1F06 - Quantitative Techniques**

P. Pages : 2

Time : Three Hours



**GUG/S/24/10679**

Max. Marks : 70

- Notes : 1. Attempt **any five** question.  
2. All questions carry equal marks.

1. Calculate Mean, Median and mode from the following data. 14

Age	-10	-20	-30	-40	-50	-60	-70	-80
No. of Persons	15	15	23	22	25	10	5	10

2. With the help of given information, find out the following: 14

- a) Co-efficient of correlation.  
b) The two regression equations.  
c) Calculate the value of 'x' when y=34.  
d) Calculate the value of 'y' when x=47.

Subject Series	48	50	53	49	51	55	53	49
Relative series	36	32	33	38	37	31	35	30

3. From the following data calculate 3,5,7 yearly moving average and plot the data on graph, 14

Year	Cyclical Fluctuation
2001	4
2002	2
2003	0
2004	-4
2005	-2
2006	4
2007	2
2008	0
2009	-4
2010	-2
2011	4
2012	2
2013	0
2014	-4
2015	-2

4. Construct the decision tree for the following problem and tabulate the expected monetary value and state which one can be chosen as the best act. 14

Acts	State of Nature		
	E1	E2	E3
	0.5	0.1	0.4
A1	-350	2500	5500
A2	1200	-3500	6500
A3	-1000	2000	7000

5. Your are given information about the cost of performing different jobs by different persons. Making X indicates that the individual involved con not perform the particular job. Using this information, state. 14
- The optimal assignment of jobs and.
  - Cost of such assignment.

Persons	Jobs				
	J1	J2	J3	J4	J5
P1	27	18	X	20	21
P2	31	24	21	12	17
P3	20	17	20	X	16
P4	22	28	20	16	27

6. Solve following by VAM and check it for optimal solution by MODI method. 14

	S1	S2	S3	S4	Supply
F1	4	6	8	13	50
F2	13	11	10	8	70
F3	14	4	10	13	30
F4	9	11	13	8	50
Demand	25	35	105	20	

7. Solve graphically 14

Maximize :  $Z = 0.07x_1 + 0.10x_2$

Subject to:  $x_1 + x_2 \leq 30,000$

$x_1 \geq 60,000$

$x_2 \leq 12,000$

$x_1 - x_2 \geq 0$

$x_1, x_2 \geq 0$

8. Explain characteristics and application of Markov Chain. 14

9. Explain in details the steps involved in two-phase simplex method along with example. 14

10. Write detail note on: 14

- Least Square Method.
- North West Corner Rule.
- Rank Correlation.
- Quartile Deviation.

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