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PG4S-587-B-22
M.Sc. IV Semester Degree Examination
STATISTICS
Based on SCT :4.1 (a)
Paper : SCP 4.1 (a)

Time : 2 Hours

Maximum Marks : 30

Instructions to Candidates:

1. Answer any **Two** questions.
2. All Questions carries **Equal** marks.

1. Solve the following LPP by using Charn's M technique. (15)

$$\text{Min} Z = 10x_1 + 15x_2 + 20x_3$$

$$\text{subject to } 2x_1 + 4x_2 + 6x_3 \geq 24$$

$$3x_1 + 9x_2 + 6x_3 \geq 30$$

$$\text{and } x_1, x_2, x_3 \geq 0$$

2. Solve the following quadratic programming problems using Beal's method. (15)

$$\text{Min } Z = 2x_1^2 + 2x_2^2 - 6x_1 - 2x_1x_2 + 6$$

$$\text{Subject to } x_1 + x_2 \leq 2$$

$$\text{and } x_1, x_2 \geq 0$$

3. Find the optimum integer solution to the following LPP. (15)

$$\text{Max } Z = 8x_1 + 6x_2$$

$$\text{Subject to } 8x_1 + 4x_2 \leq 85$$

$$3x_1 + 6x_2 \leq 95$$

$$\text{and } x_1, x_2 \geq 0$$

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(1)

[Contd....

4. A small maintenance project consists of the following 12-jobs.

(15)

Jobs	Duration in days
1-2	2
2-3	7
2-4	3
3-4	3
3-5	5
4-6	3
5-8	5
6-7	8
6-10	4
7-9	4
8-9	1
9-10	7

- i) Draw network for this project.
 - ii) Summarize CPM computations in a tabular form by calculating total float and hence determine critical path.
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