



TAMIL NADU OPEN UNIVERSITY
Chennai-15.
Post Graduate Diploma in Applied Mathematics
SPOT ASSIGNMENT

COURSE	COURSE CODE	ADMISSION YEAR
Operations Research	PGDAM – 11	AY 2018 – 19

Time: 1 Hour **Total Marks: 25**

Answer all questions.

1. Use dual simplex method to solve the L.P.P. 10 Marks
Maximize
$$Z = x_1 + 2x_2 + 3x_3$$
subject to the constraints:
$$x_1 + x_2 + x_3 \geq 4$$
$$x_1 + x_2 + 2x_3 \leq 8$$
$$x_2 \leq x_3 \geq 2$$
$$x_1, x_2, x_3 \geq 0$$

2. Find the optimum integer solution to the following all I.P.P.: 10 Marks
Maximize $Z = x_1 + 2x_2$
Subject to the constraints
 $x_1 + x_2 \leq 7, 2x_1 \leq 11, 2x_2 \leq 7,$
 $x_1, x_2 \geq 0$ and are integers.

3. Explain Pure Birth and Death Model. 5 Marks



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COURSE	COURSE CODE	ADMISSION YEAR
Graph Theory and Algorithms	PGDAM – 12	AY 2018 – 19

Time: 1 Hour **Total Marks: 25**

Answer all questions.

1. Prove that a graph is bipartite if and only if it contain no odd cycle. 10 Marks
2. State and prove Tutte's Theorem. 10 Marks
3. Show that every planar graph is 6 - vertex colourable. 5 Marks



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Mathematical Statistics	PGDAM – 13	AY 2018 – 19

Time: 1 Hour

Total Marks: 25

Answer all questions:

1. State and prove Baye's formula. 5 Marks
2. Find the moment generating function of Poisson distribution. Also find its mean and variance. 10 Marks
3. State and prove the Rao - Blackwell Theorem. 10 Marks