

SOLUTION OF SAT-2
SEMESTER-II MATH (GENERAL), 2020
Subject: Mathematics
Course Code: MTMGCOR02T
DATE OF SAT-2: 01/05/2020

Teacher: Dr. Prasanta Paul

1. a) Form a PDE by eliminating h & k from the equation $(x - h)^2 + (y - k)^2 + z^2 = \lambda^2$.

b) *Eliminate a and b from $z = axe^y + \frac{1}{2}a^2e^{2y} + b$*

SOLUTION: See My Lecture Note-1 Example Number 5 and 4.

2. a) Form a partial differential equation by eliminating arbitrary function f from $lx + my + nz = f(x^2 + y^2 + z^2)$.

b) Form a partial differential equation by eliminating arbitrary functions f & g from $z = f(x^2 - y) + g(x^2 + y)$.

SOLUTION: See My Lecture Note-2 Example Number 19 and 21.

3. *Solve $(z^2 - 2yz - y^2)p + (xy + zx)q = xy - zx$.*

SOLUTION: See My Lecture Note-3 Exercise (3) Page Number 6.

4. *Apply Charpit's method to find a complete integral of $z = pq$.*

SOLUTION: See My Lecture Note-4 Example Number 1, Page Number 3.

5. *Find a complete integral of $z^2 = pqxy$, by using Charpit's method.*

SOLUTION: See My Lecture Note-4 Example Number 4, Page Number 4.