P P SAVANI UNIVERSITY

P P SAVANI SCHOOL OF ENGINEERING

4th Semester of B. Tech. Examination (2nd Internal Exam)

Course: Mathematical Methods for Computation (SESH2051)

Branches: CE/IT

Date: 08/03/2019, Friday]

[Time:10:15 A.M. to 11.15 A.M.]

[Total Marks:30]

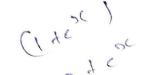
- Instructions: Figures to the right indicate full marks.
 - All questions are compulsory.
 - Use of scientific calculator is allowed.
 - Assume suitable data if necessary.

).1 Answer the following.

- (i) $L(e^{at}\cosh bt) = ?$
- (ii) $L\{f(at)\} = ?$



- .2 Answer the following.
 - (i) Prove $L\{\sinh at\} = \frac{a}{c^2 a^2}$.
 - (ii) Find the Laplace transform of $t^2 e^{-2t} + \cosh^2 3t$.
- .3 Answer the following. [Attempt any five].
 - (i) Solve $(D^2 + 2D + 1)v = xe^{-x}\cos x$.
 - (ii) Solve $(D^2 5D + 6)y = x \cos 2x$.
 - (iii) Solve using Undetermined Coefficients $(D^2 2D)y = e^x \sin x$.
 - (iv) Solve $(D^2 3D + 2)y = \frac{e^x}{1 + e^x}$ using Method of Variation of Parameters.
 - (v) Solve $(D^2 2DD' + D'^2)z = tan(y + x)$.
 - (vi) Solve $z^2(p^2z^2+q^2)=1$.
 - (vii) Solve 25r 40s + 16t = 0.



[04]

[25]