K. K. Wagh Institute of Engineering Education and Research, Nashik

(An Autonomous Institute from A.Y. 2022-23)

Marking Scheme

End-Sem Examination-II, Summer 2025

Academic Year: 2025-2026	Semester: II
Class: FY	Program: B. Tech
Branch Code: FYE	Pattern: 2023
Name of Course: Differential Equations & Integral calculus	Course Code:2300102A

Q	Description	Marks
Q1)	Standard Form----(1M) Substitution and Linear Form----(2M) Integrating Factor------ (1M) Formula-------(1M) Final answer------(1M)	6M
Q2)	Formula----(1M) Substitution of limits---(1M) Value of q----(2M) Substitution of 2^{nd} limits----(1M) Final answer----(1M)	6M
Q3a)	Difference Table----(2M) Formula---(1M) Substitution---(1M) Final answer----(1M)	5M
Q3b)	Difference Table----(2M) Formula---(1M) Substitution---(1M) Final answer----(1M)	5M
Q3c)	i) First operation ---(1M), Second operation---(1M), Final Answer---(1M) ii) First operation ---(1M), Second operation---(1M)	5M
3 d)	i) First operation ---(1M), Second operation---(1M), Final Answer---(1M) ii) Evaluation of RHS/ First operation ---(1M), Evaluation of LHS/ Second operation ---(1M)	5M

3 e)	Lagrange's formula($_0$, $_1$, $_2$)---(3M) Y(X)---(2M) Value of dy/dx---(1M)	6M
3 f)	Stirling's formula----(1M) Central difference table---(2M) Substitution in formula----(2M) Final Answer----(1M)	6M
4 a)	Euler's correct Formula,y_1---(1M) $_2$, $_3$, $_4$, $_5$-------(4M)	5M
4 b)	Modified Euler's correct Formula---(1M) y_1---(1M) y_1^1 , $y_{2,}^1$ y_3^1-----(3M)	5M
4 c)	R-K method formula---(1M) $_1$, $_2$, $_3$, $_4$, K& $_1$-------- (5M)	6M
4 d)	Predictor corrector formula----(1M) f_1 ,f_2, f_3-----(2M) Predictor value---(1M) f_4 ---(1M) Corrector Value ---(1M)	6M
4 e)	Formula for required term----(1M) Formula of Numerical Integration----(1M) Substitution in the formula----(2M) Final answer ----(1M)	5M
4 f)	Formula for required term----(1M) Formula of Numerical Integration----(1M) Substitution in the formula----(2M) Final answer ----(1M)	5M

5 a)	Diagram----(1M) Limits----(2M) Integration solving----(2M) Final answer ----(1M)	6M
5 b)	Diagram----(1M) Limits----(2M) Integration solving----(2M) Final answer ----(1M)	6M
5 c)	Diagram----(1M) Limits----(2M) Area formula----(1M) Integration solving----(1M)	5M
5 d)	Formula---(1M) Limits----(1M) Evaluation of Numerator of $\bar{x}$----(1M) Evaluation of Denominator of $\bar{y}$----(1M) Final answer ----(1M)	5M
5 e)	Spherical polar coordinates ----(1M) Limits----(1M) Solving integration & Final answer ----(3M)	5M
5 f)	Volume----(1M) Limits----(1M) Substitution---(1M) Polar limits---(1M) Final answer ----(1M)	5M