8/6/24, 10:18 PM Online Degree

X





About (/about) | Notifications  $\bigcirc$  (/mynotifications) | 23113110286@sastra.ac.in  $\checkmark$  (/profile)

SASTRA » Numerical & Statistical Analysis

=

## Unit 3 - UNIT - III: Numerical Solutions of ODE

Course outline		A 0	
	LIMIT 1.	Assessment 8	
	UNIT - I : Transcendental	The due date for submitting this assignment has passed.	Due on 2023-05-14, 23:59 IST.
	Polynomial & Simultaneous	As per our records you have not submitted this assignment.  Euler method	
_	equations and	1) find the value of $y(0.2)$ by modified Euler's method, given that $y' = x - y^2$ , $y(0) = 1$	1 point
$\oplus$	Interpolations ()	0.858	
	UNIT - II :	0.885 0.588	
	Numerical	0.88	
$\oplus$	differentiation and Integration ()	No, the answer is incorrect. Score: 0	
		Accepted Answers:	
	UNIT - III : Numerical	0.858	
	Solutions of ODE	2) find the value of $y(0.2)$ by improved euler's method, given that $y' = x - y^2$ , $y(0) = 1$	1 point
	0	0.856	
Lecture 1: Solution by Taylor series- First		○ 0.885 ○ 0.658	
		0.568	
	order ODE (week 7) unit?	No, the answer is incorrect.	
,	ınit=34&lesson=35)	Score: 0 Accepted Answers:	
Lecture 2 Solution by		0.856	
	Taylor's series - Second	3) Find the value of y(1.2) by Improved Euler's method given that $y' = (2y / x) + x^3$ , $y(1) = 0.5$	1 point
	and simultaneous ODEs	0 1.32	, point
	week 7) (unit? ınit=34&lesson=36)	0 1.032	
		○ 1.023	
	Lecture 3-Solution of Second order and	O 1.203	
	Simultaneours ODE by	No, the answer is incorrect. Score: 0	
	Taylor's series	Accepted Answers:	
	nethod(contd.,)(Week 7) (unit?	1.023	
	ınit=34&lesson=37)	4) Error in modified Euler method is of order	1 point
00	Quiz: Assessment 7	O h	
	assessment?	of ourth power of h square of h	
r	name=45)	Cube of h	
	ecture 4 Solution of	No, the answer is incorrect.	
	First order ODE by	Score: 0 Accepted Answers:	
	Picard's Method (Week B) (unit?	cube of h	
	ınit=34&lesson=38)	5) In which of the following method , approximate the curve of solution by tangent in each interval	1 point
ા	ecture 5 :Solution by		т рот
F	Picard's method	Picard method     Euler method	
	contd) (week 8) (unit?	Newton method	
	ınit=34&lesson=39)	Runge-Kutta method	
	ecture 6 -Solution by Euler's method –	No, the answer is incorrect. Score: 0	
	mproved and modified	Accepted Answers:	
	,	Euler method	

8/6/24, 10:18 PM Online Degree

Euler method (week 8) 6) The modified Euler method is based on the average of \_\_\_\_. 1 point (unit? Straight line unit=34&lesson=40) Ellipse chord Lecture 7 - Solution by Euler's method opoints Improved and modified No, the answer is incorrect. Score: 0 Euler method(cont.,) Accepted Answers: (Week 8) (unit? points unit=34&lesson=41) 7) Euler formula for the solutions provides a pair of \_\_\_\_ formulas. 1 point Ouiz: Assessment - 8 (assessment? Taylor Method. name=47) Runge-Kutta Method. O Predictor-corrector methods Lecture 8 : Runge kutta Newton's method method for solving First No, the answer is incorrect. order ODE and Second order ODE (week 9) Accepted Answers: (unit? Predictor-corrector methods unit=34&lesson=42) 8) In improved Euler method 1 point Lecture 9-Runge- Kutta slope at (x0,y0) is taken Method (contd.,)(Week slope at (x1,y1) is taken 9) (unit?  $\bigcirc$  average of slopes at  $(x_0,y_0)$  and  $(x_1,y_1^{(1)})$  is taken unit=34&lesson=43) onone of the above Lecture 10: Predictor -No, the answer is incorrect. Corrector Methods (Milne's Method) (Week Accepted Answers: average of slopes at  $(x_0,y_0)$  and  $(x_1,y_1^(1))$  is taken 9) (unit? unit=34&lesson=44) 9) In the geometrical meaning of Euler's algorithm, the curve is approximated as a 1 point Ouiz: Assessment -- 9 Ellipse (assessment? parabola name=49) circle straight line UNIT - IV: No. the answer is incorrect. Statistical Score: 0 distributions and Accepted Answers: straight line Test of hypothesis  $\oplus$ 0 10)  $y_{n+1} = y_n + h f(x_n, y_n)$  is the iterative formula for 1 point Milne's method Unit V: Non-Adam's method parametric Fuler's method statistical Taylor's method methods & Time No, the answer is incorrect. Score: 0 series analysis ()  $\oplus$ Accepted Answers: Euler's method 11) Using Euler's method dy/ dx =  $(2 - y^2) / 5x$ , y(4) = 1 the value of y(4.1) is 1 point 0 1.005 0 1.118 0 1.125 1.2356 No, the answer is incorrect Score: 0 Accepted Answers: 12) Using Euler's method  $dy/dx = 4 + x^2 + y$ , y(0) = 1 the value of y(0.05) is ----1 point 1.25 1.52 0 1.12 2.2 No, the answer is incorrect. Score: 0

Accepted Answers:

13) Condition for convergence in Picard's method is

 $\bigcirc$  f(x,y) and  $\partial$ f/ $\partial$ x are discontinuous

1 point

8/6/24, 10:18 PM Online Degree

∫ f(x,y) is continuous and ∂f/∂x is discontinuous	
○ f(x,y) is discontinuous and ∂f/∂x is continuous	
$\int f(x,y)$ and $\partial f/\partial x$ are continuous	
No, the answer is incorrect. Score: 0	
Accepted Answers: $f(x,y)$ and $\partial f/\partial x$ are continuous	
14) The value of y(0.1) becomes, $y' = y - x^2$ , $y(0) = 1$ by Picard's method	1 point
O 1.105	
O 0	
01	
○ 0.1	
No, the answer is incorrect. Score: 0	
Accepted Answers: 1.105	
15) Solving by picard's method value of $y' = x^2 + y^2$ , $y(0) = 0$ becomes	1 point
O 0	
01	
$\bigcirc 1/5 x^3 + 1/63 x^7$	
O Not possible	
No, the answer is incorrect. Score: 0	
Accepted Answers: 1/5 x <sup>3</sup> +1/63 x <sup>7</sup>	





## FOLLOW US

(https://www.facebook.com/swayammoocs/)





Privacy Policy (/privacy\_policy) | Terms of Use (/terms\_of\_use) | Honor Code (/honor\_code)

© 2024 SWAYAM. All rights reserved. Initiative by: MHRD ( Govt of India)