CODE: **196211**   TIME: 3Hrs
NOVEMBER 2020   MAX. MARKS : 50

PART A   *(10 x 2=20)*
*Answer any **TEN** questions*

1. How to respond to the comments from multiple reviewers?
2. What is observational method of research.
3. Solve the equations x -2y = 3
                    2x +3y = -1 by Gauss elimination method.
4. What is Eigen value of a matrix
5. Define coefficient of regression.
6. What are the normal equations for the best fit for a straight line y = ax +b
7. What is the order of error in trapezoidal rule?
8. State weddles rule.
9. State trapezoidal rule for numerical integration.
10. What is an operator in C language?
11. Write short note on structure.
12. List out any four relational operator in C

PART B   *(2 x5=10)*
*Answer any **TWO** questions*

13. Explain the role of motivation in research.
14. Write notes on thesis writing skills.
15. Find the root of equations $x^3 – 3x -5 = 0$ correct to three decimal places using bisection method.
16. Describe the geometrical interpretation of Newton – Raphson formula.
17. The amount of a substance A remaining in a reacting system after an interval of time t in a certain chemical experiments is tabulated below.

t(min)	3	6	9	12
A(g)	94.8	85.2	73.1	69.7

    obtain the value of A when t=11 min using Newton's backward interpolation formula.
18. Derive Simpsons 3/8 rule.
19. Describe Euler's method.
20. Write notes on subroutines in C

PART C   *(2x10=20)*
*Answer any **TWO** questions*

21. Write an essay on research methods.
22. Solve the systems of equations.
    3x + y – z = 3
    2x -8y + z = -5
    x -2y + 9z = 8 using Gauss eliminations methods.

23. Fit a parabola $y = ax^2 + bx + c$ in least square sense to the data

x	10	12	15	23	20
y	14	17	23	25	21

24. If dy/dx – y =-x; y(o)=2 solve for y at x =1 and x=2 using range kutta method of fourth order.
25. Write a c program to find the root of f(x) = 3x – cos x – 1 using Newton – Raphson method.