Part I

Instructions : Use Separate Answer scripts for each Part

No. of Question	PART – I	Marks
1	Create a structure to specify data about employee. The data to be stored its name, Age, Basic pay and ID no. Assumed maximum 100 no employee. Write a C program to print the details of an employee, if give an ID no. as input.	10
2	Write short notes **any two** of the following. a) Use of pointer in C program b) Structure type Variable. c) Recursive function.	4x2=8
3	**Answer any four questions.** a) Write a C program to find out value of $\int_{\frac{\pi}{2}}^{\pi} x \sin x \, dx$ using simson's rule. Given no. of division (k) as an input. b) Write a C program, to product of two Matrices [A] and [B], both of size (2x3) and (3X2) respectively and store the result in a separate matrix [C]. c) Write a C program to print ascending order form given input as N number integer d) d) Write a C program to the sum of following series for the first N terms, using function subprogram. $$y = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} \dots \dots \dots \dots$$ e) Write a C program to find the value of $^n c_r$, using function subprogram.	4X8=32

BACHELOR OF CIVIL ENGINEERING (EVENING) EXAMINATION 2019
(Second Year, First Semester)
SUBJECT: COMPUTER PROGRAMMING - II

Time: Three Hours

Full Marks 100
(50 marks for each part)

Use a separate Answer-Script for each part

| No. of questions	Part II	Marks
	.Answer any **Five** Questions.	
1.	a) Explain briefly power and inverse power method in connection with the Eigen value problems.	3
	b) Find the Eigen values and corresponding Eigen vectors using power and inverse power method, using two iterations, for the matrix $$B = \begin{bmatrix} 1 & -2 \\ -5 & 4 \end{bmatrix}$$	7
2.	a) Define Eigen value, Eigen vector.	2
	b) Using polynomial method, determine the Eigen values and corresponding Eigen vectors for the matrix $$A = \begin{bmatrix} 2 & 1 & 0 \\ 1 & 2 & 1 \\ 0 & 1 & 2 \end{bmatrix}$$	8
3.	a) Derive Composite Trapezoidal rule using the first two terms of Newton-Gregory forward formula	6
	b) Use the Simpson's 1/3 rule with no. of segments(n)= 4, evaluate the integral. $$\int_0^2 (Sin^3 x)dx$$	4
4.	a) What is the basic difference between Simpson's one-third rule and Gauss quadrature rule?	2
	b) Using three-point Gauss quadrature rule, estimate the integral. $$\int_1^3 (5x^3 - x + 4)dx$$ Also, find the absolute relative true error.	8

No. of questions	Part I	Marks
5.	Compute the deflection at mid-point and quarter points of the beam shown in figure below using finite difference method.	10
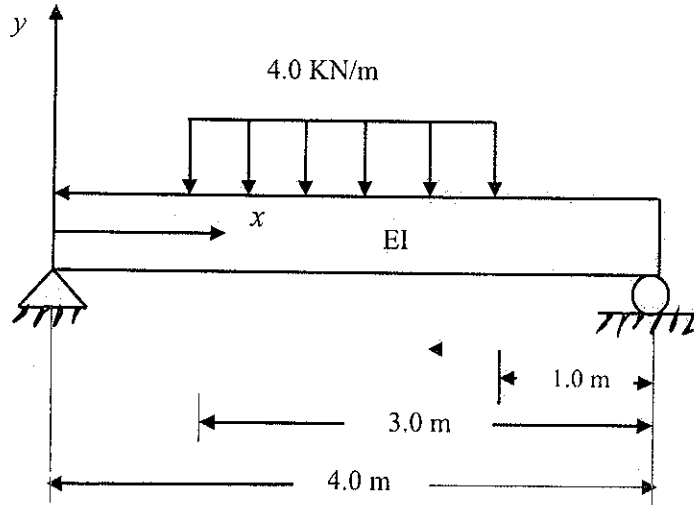
| 6. | Find the deflection for the cantilever beam at 2.0m,4.0m,6.0m and 8.0m from the fixed end using finite difference method. | 10 |