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Reg. No. : .....

Name : .....

Sixth Semester B.Tech. Degree Examination, April 2014

(2008 Scheme)

Branch : Electrical & Electronics

08.603 : NUMERICAL TECHNIQUES & COMPUTER PROGRAMMING

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions :

1. Write a short note on preprocessor directive.
2. Differentiate with examples the use of break and continue statement in C.
3. Write a program to check whether the given year is leap year or not.
4. Differentiate between structure and union.
5. Write a program to store an array in to a file.
6. Explain storage classes in C.
7. Write a program to find factorial of a given number using recursive function.
8. Explain Simpson's $\frac{1}{3}^{rd}$ rule for numerical integration.
9. Explain bisection method of solution of transcendental equation.
10. Write a short note on solution of partial differential equation. **(10×4=40 Marks)**

P.T.O.

PART – B

Answer **one** full question from **each** Module.

MODULE – I

11. a) Write a C program to find sum of following series

$$1-\frac{x^2}{2!}+\frac{x^4}{4!}-\frac{x^6}{6!}+\ldots.$$ for 4 decimal places. **12**

b) Explain control statement in C. **8**

OR

12. a) Write a program to find 2nd and 3rd largest of given array. **12**

b) Explain different input output statement in C. **8**

MODULE – II

13. a) Explain different types of function in C. **8**

b) Write a program that multiplies two matrices. Use function to read, print and to multiply the matrices. **12**

OR

14. a) Write a short note on dynamic memory allocation. **8**

b) Write a program to store an array to a file and to copy the same to another file. **12**

MODULE – III

15. Solve by Gauss Jordhan elimination method

$x + y + z = 9$

$2x - 3y + 4z = 13$

$3x + 4y + 5z = 40$

Also write a C program to solve the same. **20**

OR

16. a) Evaluate $\int_4^{5.2} \log_e x \, dx$ using trapezoidal rule. **8**

b) Write a C program to evaluate $\int_0^{0.75} (x^2 + \sin x)dx$ using Simpson's $\frac{1}{3}$ rule. **12**