

Faculty of Engineering & Technology
Fourth Semester B.E. (Electrical Engineering) (C.B.S.)
Examination
COMPUTER PROGRAMMING

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Due credit will be given to neatness and adequate dimensions.
- (3) Assume suitable data wherever necessary.
- (4) Illustrate your answers wherever necessary with the help of neat sketches.
- (5) Use of Slide rule, Logarithmic tables, Non-programmable calculator, Drawing instruments, Thermodynamic tables for moist air, Psychrometric charts and Refrigeration charts is permitted.
- (6) All questions compulsory.

1. (a) Explain different types of storage classes in C along with example. 7
- (b) Write a program in C to add the digits of a four digit number. Number is entered by user. 7

OR

2. (a) Explain different operators available in 'C'. 7

- (b) Write a program in C to calculate net salary, using formula

Gross salary = BASIC + DA + HRA

Net salary = Gross salary – PT

Using condition :

if BASIC \geq 2500, PT = 150, HRA = 1200 and
DA = 50% of BASIC.

if BASIC < 2500, PT = 100, HRA = 10% of
BASIC and DA = 25% of BASIC. 7

3. (a) Write a program in C to arrange the elements of a
array of size 10 in ascending order using selection
sort. 7
- (b) What are the different methods of searching ? Explain
any one in brief. 6

OR

4. (a) Define array. Write syntax for initialising 1-D and
2-D array. 2
- (b) Write program in C to calculate the sum and average
of elements of array of size 20. 5
- (c) Write a program in C to find the transpose of square
matrix without using another matrix. 6
5. (a) Write a program in C to print details of the 10 books
using array of structure and structure should contain
name, price and pages. 6
- (b) What is structure ? Write different ways to declare
structure.

Write a program in C to accept a date and display
it. Define a structure with day, month and year as
elements. 7

OR

6. (a) Write a program in C to copy a file to another file using input output functions; use suitable file names for source and destination file. 8
- (b) Write and explain the syntax of following functions :
(i) fopen()
(ii) fseek()
(iii) fclose()
(iv) fprintf()
(v) fwrite() 5
7. (a) What is the difference between object oriented programming and procedure oriented programming ? 3
- (b) What are objects and classes in C++ ? Explain with example. 5
- (c) What is inheritance ? Explain Multiple Inheritance. 5

OR

8. Write short notes on :-
(i) Data Abstraction 3
(ii) Polymorphism 3
(iii) Encapsulation 3
(iv) Multiple inheritance. 4
9. (a) Explain how to create script files and execute them in MATLAB. Write a script file to draw a unit circle. 5
- (b) Write a program in MATLAB to find the factorials of a number and number is entered by a user. 4

- (c) Write a program in MATLAB to compute the sum of geometric series $1 + r + r^2 + \dots + r^n$; value of r and n entered by user. 4

OR

10. (a) Write syntax for ForLoop and While Loop along with example in MATLAB. 6
- (b) Write a program in MATLAB to print Fibonacci series upto 10 terms. 7
11. (a) Write a program in MATLAB to draw a plot with X label, Y label, title, axis, and text. Plot for $y_1 = \sin t$, $y_2 = t$ and $y_3 = t - \frac{t^3}{3!} + \frac{t^5}{5!}$ where $t = 0$ to $2 * \pi$. 8
- (b) Write a syntax using functions in MATLAB :
- (i) for creating data file
 - (ii) for writing to a text file
 - (iii) creating a data matrix X of size m by n matrix. 6

OR

12. (a) Write a program in MATLAB which takes array input and computes its sum, mean, median, variance and standard deviation. 8
- (b) Write a program in MATLAB for addition of two matrices. Matrices are entered by user. If the user does not enter matrices of the same size, it will display a message, "Addition not possible" and then return to the system. Otherwise it will do the addition and display the result of addition of two matrices. 6