

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