

**B. E. First Semester (All) / SoE – 2018-19 Examination**

**Course Code : IT 2101**

**Course Name : Introduction to  
Computer Programming**

Time : 3 Hours/4 Hours ]

[Max. Marks : 60

**Instructions to Candidates :—**

- (1) All questions are compulsory.
- (2) All questions carry marks as indicated.

**1. Solve any One (A or B) :—**

- (A) (1) Explain the basic working of Computer system with the help of diagram. Briefly discuss the working of each components.  
4 (CO 1)
- (2) Write an algorithm and Draw flowchart to find the smallest among three different numbers entered by user.  
4 (CO 1)
- (3) Write an algorithm to check the entered number is even or odd.  
2 (CO 1)
- (B) (1) Explain different types of errors occurred in programming.  
4 (CO 1)
- (2) Write an algorithm and draw the flowchart to convert temperature from degree centigrade to Fahrenheit.  
4 (CO 1)
- (3) Write an algorithm to input values of two variables and interchange their values without using third variable.  
2 (CO 1)

**2. Solve any One (A or B) :—**

- (A) (1) Write a program in C to calculate and print the Electricity bill of a given customer.

No. of units consumed by the user should be taken from keyboard

and display the total amount to pay by customer.  
The charges are as follows :—

Unit	Charge/unit	
upto 199	@3.20	
200 and above but less than 500	@3.50	
500 and above but less than 800	@3.80	
800 and above	@5.00	7 (CO 2)

- (2) Write a program in C to check the entered number is Armstrong or not. 3 (CO 1)

- (B) (1) Write menu driven program using switch case for following tasks (Case) :—

- (1) To check Number is Even or Odd.
- (2) To Maximum value of two number.
- (3) To print the area of circle.
- (4) Exit.

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- (2) Write a C program to input one operator and perform the operation using switch statement. 3 (CO 1)

3. Solve any **One** (A or B) :—

- (A) (1) Write a C program to display following pattern. (using loops only)

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7 (CO 2)

- (2) Write a C program to demonstrate the use of break and continue statement also Differentiate between break and continue statement. 3 (CO 2)

- (B) (1) Write a C program to print Fibonacci series up to 'n' terms. Input the n value from user. 4 (CO 2)

- (2) Write a C program to print primary numbers from 1 to 500. 4 (CO 2)

- (3) Differentiate between entry controlled and exit controlled loop. 2 (CO 2)

4. Solve any **One** (A or B) :—

- (A) (1) Write a program to check whether the entered number is single digit or more digit, by using **user defined function**. 4 (CO 3)
- (2) Write a program to input value of X and Y and find X to the power Y by using **Recursion**. 4 (CO 3)
- (3) Discuss Call-by-Value with example. 2 (CO 3)
- (B) (1) Write a function power() to calculate the power and fact() to calculate the factorial and print the sum of following series up to "n" terms :—
- $$\text{Sum} = 1 + x^2/2! + x^3/3! + x^4/4! + \dots + x^n/n! \quad 4 \text{ (CO 3)}$$
- (2) Write a program to find GCD of two inputted Numbers using **Recursion**. 4 (CO 3)
- (3) Discuss Call-by-Reference with example. 2

5. Solve any **One** (A or B) :—

- (A) (1) Write a C program to input '**n**' elements for an array and sort the array using Selection Sort. 4 (CO 4)
- (2) Write a C program to input Two Dimensional (2D) Array and print the 1<sup>st</sup> and 3<sup>rd</sup> row of 2-D Array. 4 (CO 4)
- (3) Differentiate 1-D and 2-D Array. 2 (CO 4)
- (B) (1) Write a C Program to input elements for 2-D array and find the largest and smallest elements from the array. 4 (CO 4)
- (2) Write a C program to input '**n**' elements for an array and search the element using Binary search. 4 (CO 4)
- (3) Write a C program to input 2-D Array and print the transpose. 2 (CO 4)

6. Solve any **One** (A or B) :—

- (A) (1) Write C program to check the entered string is Palindrome or not without using Standard Library Function. 4 (CO 4)
- (2) Write a program to copy the contents of one file to another file. 4 (CO 4)
- (3) Write a C program to count the number of new lines present in a file. 2 (CO 4)
- (B) (1) Create structure "CollegeInfo" with following fields :  
CollegeName, Address, No of students, No of Branches, Use proper data types.  
Read 5 College records and display them in formatted manner. 4 (CO 4)
- (2) What are the uses of following function ?
- (1) fscanf()
  - (2) fprintf()
  - (3) fgetc()
  - (4) fputc() 4 (CO 4)
- (3) Write a C program to input a string and calculate the length of a string without using standard library function. 2 (CO 4)