

Time: 2 Hours

Max. Marks: 60

- NB: 1) Question No.1 is compulsory.
2) Attempt any three questions from question no. 2 to 6.

- Q1 Solve any three out of the following. 15**
- A Write a C program to get age and vaccination details as input. Print “senior citizen and eligible for booster” if age > 60 and vaccination input as ‘2’, otherwise print “below 60 and eligible for vaccination”. Use conditional operator. 05**
- B Write string handling functions in C used to do following task: 05**
- If first name, middle name, last name given as an input display it as a full name.
 - Display number of characters in full name.
 - Convert first name into capital letters and last name into small letters.
 - print the full name in reverse order
- C Write a program to print following pattern for given number of rows. 05**
- ```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```
- D Differentiate between Structure and Union. 05**
- E Explain formal parameters and actual parameters with an example. 05**
- Q2 15**
- A What is the purpose of switch statement and write a C program to input an alphabet and check whether it is vowel or consonant using switch case. 05**
- B Write a C program using function to check if the entered number is prime number or not. 05**
- C What is an identifier (variable)? What are the rules to construct identifier (Variable)? Classify the following as valid/invalid Identifiers. 05**
- i) num2    ii) \$num1    iii) +add    iv) a\_2
- Q3 15**
- A Write a C program that takes three coefficients (a, b and c) of a quadratic Equation;  $(ax^2+bx+c=0)$  as input and compute all possible roots and print them with appropriate messages. 10**
- B Define array. Write a C program to find the sum and average of n integer numbers using array. 05**

**Q4**

- A** What is nested Structure? Explain with proper example. **15**  
**05**
- B** Explain pointer operators with proper example. **05**
- C** Write a C program to replace all occurrences of a character with another in a string. **05**

**Q5**

- A** Write a program to calculate power of a number(x raised to n), accept value of x and n from the user. **15**  
**05**
- B** What is the necessity of parameter passing to function? What are the two ways of parameters passing to function? Explain any one in detail. **05**
- C** Give the difference between break and continue with an example. **05**

**Q6**

- A** Write a C program to find sum of principal diagonal elements of a given square matrix. **15**  
**05**
- B** Define Recursive function. Write a Program to find GCD of two numbers using Recursive function. **05**
- C** Define pseudocode. Draw flowchart and write a pseudocode to find whether given number is palindrome or not **05**
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