Enrollment No......................................

Faculty of Engineering
End Sem (Odd) Examination Dec-2018
EN3ES06 Computer Programming

Programme: B.Tech.   Branch/Specialisation: All

Duration: 3 Hrs.   **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q1. i.   Flowcharts and algorithm are used for   **1**
           (a) Better Programming   (b) Easy testing and debugging
           (c) Efficient coding   (d) All of these

     ii.   Which of the following system software resides in main memory   **1**
           always?
           (a) Text editor (b) Assembler (c) Linker   (d) Loader

     iii. Which of the following is not a valid declaration in C?   **1**
           I.   short int x;   II. signed short x;
           III. short x;   IV. unsigned short x;
           (a) III and IV   (b) II   (c) I   (d) All of these

     iv.   ```
           #include <stdio.h>
           int main () {
             int i = 3;
             switch (i)
             {
               case 0+1: printf("Geeks");
                   break;
               case 1+2: printf("Quiz");
                   break;
               default: printf("GeeksQuiz");
             }
             return 0;
           }
           ```
           What is the output of the above program?                         **1**
           (a) Geeks Quiz                (b) Geeks
           (c) Quiz                      (d) Compile time error

P.T.O.

v.    # include <stdio.h>                                              **1**
      int main()
      {
        char str1[] = "GeeksQuiz";
        char str2[] = {'G', 'e', 'e', 'k', 's', 'Q', 'u', 'i', 'z'};
        int n1 = sizeof(str1)/sizeof(str1[0]);
        int n2 = sizeof(str2)/sizeof(str2[0]);
        printf("n1 = %d, n2 = %d", n1, n2);
        return 0;
      }
      (a) n1 = 10, n2 = 9           (b) n1 = 10, n2 = 10
      (c) n1 = 9, n2 = 9            (d) n1 = 9, n2 =10

vi.   In C, parameters are always:                                     **1**
      (a) Passed by value
      (b) Passed by reference
      (c) Passed by value result
      (d) Non-pointer variables are passed by value and pointers are
          passed by referenced.

vii.  # include <stdio.h>                                              **1**
      void fun(int *ptr)
      {
        *ptr = 30;
      }
      int main()
      {
       int y = 20;
       fun(&y);
       printf("%d", y);
       return 0;
      }
      (a) 20        (b) 30        (c) 50        (d) Compiler error

viii. What is the similarity between a structure, union and            **1**
      enumeration?
      (a) All of them let you define new values
      (b) All of them let you define new data types
      (c) All of them let you define new pointers
      (d) All of them let you define new structures

ix.   If there is any error while opening a file, fopen will return:   **1**
      (a) Nothing               (b) EOF
      (c) NULL                  (d) Depends on compiler

x.    FILE is of type _____                                          **1**
      (a) int type      (b) char * type  (c) struct type   (d) None of these

Q.2   i.    Define problem statement in brief.                         **4**
      ii.   Write a C program to input a number from user and count number   **6**
            of digits in the given integer using loop.
OR    iii.  Design an algorithm and flowchart to input fifty numbers and    **6**
            calculate their sum.

Q.3   i.    Explain keywords and identifier.                          **4**
      ii.   Write a program to calculate Fibonacci Sequence up to a certain  **6**
            Number.
OR    iii   Explain operator and its types. Draw a precedence table with     **6**
            associatively of operator.

Q.4         Attempt any two:
      i.    Write an algorithm for Binary search with example.        **5**
      ii.   Write a program for matrix multiplication.                **5**
      iii.  Explain string functions with example.                    **5**

Q.5   i.    Compare structure and union with suitable example.        **4**
      ii.   Write a program for Factorial using recursion.            **6**
OR    iii   Write short notes on the following:                       **6**
            (a) Actual and formal parameters
            (b) Enumerated data type
            (c) Structure with pointer

Q.6   i.    Explain file handling operations in C.                    **4**
      ii.   Describe file access methods.                             **6**
OR    iii.  Write a program to calculate Number of lines, Number of   **6**
            character and number of words of a file.

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Q.1  i.  Flowcharts and algorithm are used for  **1**
(d) All of these

ii.  Which of the following system software resides in main memory  **1**
always
(d) Loader

iii.  Which of the following is not a valid declaration in C?  **1**
One mark to each who attempted.

iv.  What is the output of the above program?  **1**
(c) Quiz

v.  # include <stdio.h>  **1**

```
int main()
{
  char str1[] = "GeeksQuiz";
  char str2[] = {'G', 'e', 'e', 'k', 's', 'Q', 'u', 'i', 'z'};
  int n1 = sizeof(str1)/sizeof(str1[0]);
  int n2 = sizeof(str2)/sizeof(str2[0]);
  printf("n1 = %d, n2 = %d", n1, n2);
  return 0;
}
```
(a) n1 = 10, n2 = 9

vi.  In C, parameters are always  **1**
(a) Passed by value

vii.  # include <stdio.h>  **1**

```
void fun(int *ptr)
{
  *ptr = 30;
}
int main()
{
  int y = 20;
  fun(&y);
  printf("%d", y);
  return 0;
}
```
(b) 30

viii.  What is the similarity between a structure, union and  **1**
enumeration?
(b) All of them let you define new data types

ix.  If there is any error while opening a file, fopen will return?  **1**
(c) NULL

x.  FILE is of type _____  **1**
(c) struct type

Q.2  i.  Define problem statement  **4**

ii.  Write a C program to input a number from user and count  **6**
number of digits in the given integer using loop.
Step wise marking

OR  iii.  Design an algorithm and flowchart to input fifty numbers and  **6**
calculate their sum.

| | |
|---|---|
| Algorithms | 3 marks |
| Flowchart | 3 marks |

Q.3  i.  Explain keywords  2 marks  **4**

| | |
|---|---|
| Identifier | 2 marks |

ii.  Program to calculate Fibonacci Sequence Up to a Certain  **6**
Number?
Step wise marking

OR  iii  Explain operator  1 mark  **6**

| | |
|---|---|
| Its types | 2 marks |
| Precedence table with associatively of operator | 3 marks |

Q.4  i.  Algorithm for Binary search  3 marks  **5**

| | |
|---|---|
| Example | 2 marks |

ii.  Program for matrix multiplication  **5**
Step wise marking

OR  iii.  Explain string functions with example.  **5**
1 mark for each  (1 mark *5)

Q.5  i.  Compare structure and union (Min. 2 points)  2 marks  **4**

| | |
|---|---|
| Example | 2 marks |

| | | | | |
|---|---|---|---|---|
| | ii. | Program for Factorial using recursion. | | **6** |
| | | Step wise marking | | |
| OR | iii | Write short notes on following:   2 marks each | (2 marks *3) | **6** |
| | | (a) Actual and formal parameters. | | |
| | | (b) Enumerated data type | | |
| | | (c) Structure with pointer. | | |

| | | | | |
|---|---|---|---|---|
| Q.6 | i. | File handling operations At least four | | **4** |
| | | 1 mark for each | (1 mark * 4) | |
| | ii. | Describe File access methods | | **6** |
| | | 3 marks each | (3 marks *2) | |
| OR | iii. | Program to calculate Number of lines, Number of character and number of words of a file | | **6** |
| | | Step wise marking | | |

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