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Paper Code: TCS101

B.Tech

Mid Semester Examination 2018

I Semester

Fundamental of Computer and Introduction to Programming

Time: 1:30 Hours

MM: 50

Note:

- (i) This question paper contains two sections.
- (ii) Both sections are compulsory.

Section – A

Q1. Fill in the blanks/True-False

(1 X 5 = 5 Marks)

- a) A 'C' variable can start with a number. (True/false)
- b) Each header file extension in 'C' program is done with \_\_\_\_\_.
- c) What will be output of following code.

```
void main()
{
    char c=65;
    c = c+2;
    printf("%c",c);
}
```

- d) What will be output of following code.

```
void main()
{
    int m,j=3,k;
    m=2 * j / 2;
    k=2 *( j / 2);
    printf("%d %d",m,k);
}
```

- e) 1 nibble is group of \_\_\_\_\_ bits.

Q2. Attempt any five parts.

(3 X 5 = 15 Marks)

(Define/Short Numerical/Short Programming/Draw)

- a) Rules for Defining a variable.
- b) Define constant and its type.
- c) Difference between keywords and identifiers
- d) Associativity
- e) Characteristics of Computer
- f) Evaluate the following expression and find the value of x.  
 $x = 3/2 + 5*6 - 8\%2*3 + 7 - 3 + 5/2*4\%2 - 6 + 8*2;$

## Section – B

Each question contains three parts a, b & c. Attempt any two parts of choice from each question.

**Q3.**

(5 X 2 = 10 Marks)

- a. What is Computer? Explain each part of computer with neat block diagram.
- b. Draw a flowchart to input a four digit number and find sum of digit of that number.
- c. Write a 'C' program to input three sides of a triangle and calculate area of triangle using Heron's Formula only if the triangle is a Valid Triangle.

**Q4.**

(5 X 2 = 10 Marks)

- a. What is the role of decision making statements in 'C'. Explain various decision making statements of 'C' with suitable syntax.
- b. Draw a flowchart to input two numbers and swap them without using third variables.
- c. Write a program in 'C' to calculate the bus ticket for following cases, considering the original amount of Bus Ticket is Rs T.
  1. If age of passenger is less than 5 years then travelling is free.
  2. If age of passenger is between 5 years and 12 years (including both) then ticket will be charged only 50%.
  3. If age of passenger is between 13 years and 60 years and if the passenger is female than 80% will be applicable on bus ticket otherwise no relaxation will be given.
  4. If age of passenger is above 60 years and if the passenger is male than ticket will be charged only 50% and if passenger is female than ticket will be charged only 40%.

**Q5.**

(5 X 2 = 10 Marks)

- a. What do you mean by operator and operands? Explain various operators of 'C' language.
- b. Ms. Richa has balance in her bank account. She wants to withdraw some amount from the ATM. She will be able to withdrawal only if the withdrawal amount is less than the balance as well as withdrawal amount should be multiple of 10 also. For successful transaction there will be service charge of Rs. 0.8. Draw a flow chart to display the final balance.
- c. A certain grade of steel is graded according to the following conditions.
  - Hardness must be greater than 50.
  - Carbon content must be less than 0.6.
  - Tensile strength must be greater than 5700.

The Grades are as follows:

- Grade is 10 if all three conditions are met.
- Grade is 9 if condition(i) and condition(ii) are met.
- Grade is 8 if condition(ii) and condition(iii) are met.
- Grade is 7 if condition(i) and condition(iii) are met.
- Grade is 6 if only one condition is met.
- Grade is 5 if none of the three conditions are met

Write a program, if user gives values of hardness, carbon content and tensile strength of the steel under consideration and display the grade of steel.