**CSC201: C Programming Language**

**Additional Exercises**

**Thursday, September 18, 2014**

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1. Given that speed = 75, what is the output of the following code segment:

|  |
| --- |
| if (speed > 35)  fee = 20.0;  else if (speed > 50)  fee = 40.0;  else if (speed > 75)  fee = 60.0;  printf (“fee = %6f.1”, fee); |

1. Given that grade = ‘I’, what is the output of the following code segment:

|  |
| --- |
| points = -1;  switch (grade)  {  case ‘A’:  points = 4;  break;  case ‘B’:  points =3;  break;  case ‘C’:  points = 2;  break;  case ‘D’:  points = 1;  break;  case ‘E’:  case ‘I’:  case ‘W’:  points = 0;  }  if (points >= 0)  printf (“passed, points earned = %d\n”, points);  else  printf (“failed, no points earned. points = %d\n”, points); |

1. The table below shows the normal boiling points of several substances. Write a program that prompts the user for the observed boiling point of a substance in ºC. The program then identifies the substance if the observed boiling point is within 5% (more or less) of the expected boiling point. If the data input is more than 5% higher or lower than any of the boiling points in the table, the program should output the message “Substance unknown”.

Substance Expected Boiling Point (ºC)

Water 100

Mercury 357

Copper 1187

Silver 2193

Gold 2660

1. Write a program that calculates and prints the bill for Riyadh’s power consumption. The rates vary depending on whether the user is residential, commercial, or industrial. A code of R corresponds to a Residential, C corresponds to a Commercial, and I to Industrial. Any other code should be treated as an error.

The program should read the power consumption rate in KWH (Kilowatt per Hour); then it calculates the due amount according to the following:

The rate is SAR 5 per KWH for Residential, SAR 10 per KWH for Commercial and SAR 20 per KWH for Industrial.