PROGRAMMING PROBLEM – SET 4

Question 1: - Any year is entered through the keyboard, write a program to determine whether the year is leap or not.

Question 2: - An insurance company follow following rules to calculate premium.

i) If a person's health is excellent and the person is between 25 and 35 years of age and lives in a city and is a male then the premium is Rs. 4 per thousand and his policy amount cannot be exceeded Rs. 2 Lakhs.
ii) If a person satisfies all the above conditions except that the gender is female then the premium is Rs. 3 per thousand and her policy amount cannot exceed Rs. 1 Lakh.
iii) If a person's health is poor and the person is between 25 and 35 years of age and lives in a village and is a male then the premium is Rs. 6 per thousand and his policy amount cannot exceed Rs. 10000.
iv) In all other cases the person is not insured.

Write a program to output whether the person should be insured or not, his/her premium rate and maximum amount for which he/she can be insured.

Question 3: - A certain grade of steel is graded according to the following conditions:

i) Hardness must be greater than 50
ii) Carbon content must be less than 0.7
iii) Tensile strength must be greater than 5600

The grades are as follows:

Grade is 10 if all three conditions are met

Grade is 9 if conditions (i) and (ii) are met

Grade is 8 if conditions (ii) and (iii) are met

Grade is 7 if conditions (i) and (iii) are met

Grade is 6 if only one condition is met

Grade is 5 if none of the conditions are met

Write a program, which will require the user to give values of hardness, carbon content and tensile strength of the steel under consideration and output the grade of the steel.

Question 4: - A library charges a fine per every book, returned late. For first 5 days the fine is 50 paise, for 6-10 days fine is one rupee and above 10 days fine is 5 rupees. If you return the book after 30 days your membership will be cancelled. Write a program to accept the number of days the member is late to return the book and display the fine of the appropriate message.

Question 5: - If the three sides of a triangle are entered through the keyboard, write a program to check whether the triangle is valid or not. The triangle is valid if the sum of two sides is greater than the largest of the three sides.

Question 6: - If the three sides of a triangle are entered through the keyboard, write a program to check whether the triangle is isosceles, equilateral, scalene or right angled triangle

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Question 7: - In a company, worker efficiency is determined on the basis of the time required for a worker to complete a particular job. If the time taken by the worker is between 2 – 3 hours, then the worker is said to be highly efficient. If the time required by the worker is between 3 – 4 hours, then the worker is ordered to improve speed. If the time taken is between 4 – 5 hours, the worker is given training to improve his speed, and if the time taken by the worker is more than 5 hours, then the worker has to leave the company. If the time taken by the worker is input through the keyboard, find the efficiency of the worker.

Question 8: - A university has the following rules for a student to qualify for a degree with A as the main subject and B as the subsidiary subject:

(a) He should get 55 percent or more in A and 45 percent or more in B.

(b) If he gets than 55 percent in A he should get 55 percent or more in B. However, he should get at least 45 percent in A.

(c) If he gets less than 45 percent in B and 65 percent or more in A he is allowed to reappear in an examination in B to qualify.

(d) In all other cases he is declared to have failed.

Write a program to receive marks in A and B and Output whether the student has passed, failed or is allowed to reappear in B.

Question 9: - The policy followed by a company to process customer orders is given by the following rules: (a) If a customer order is less than or equal to that in stock and has credit is OK, supply has requirement. (b) If has credit is not OK do not supply. Send him intimation. (c) If has credit is Ok but the item in stock is less than has order, supply what is in stock. Intimate to him data the balance will be shipped. Write a C program to implement the company policy.