



IIT 111/1 Foundation of Problem Solving with Programming

Time: One (01) Hour

Total 03 Questions.
Answer all questions.

- 1) (a) Which types of problems can be solved by a computer? Explain your answer briefly. (5 Marks)
(b) Following is a set of computer problem solving steps. (5 Marks)

Problem Identification -> Problem Analysis -> Algorithm Design -> Program Development -> Debugging and Testing -> Documentation

Explain only the Problem Identification, Problem Analysis and Algorithm Design steps briefly.

- (c) Write down a Problem Analysis Chart (PAC) to compute and display the power of an electric lamp.

The relevant formula is P = I^2 x R, where P=Power, I=Current and R=Resistance (10 Marks)

- 2) (a) Write an algorithm to swap (interchange) two variables with a help of third variable. (10 Marks)
(b) Write an algorithm to swap (interchange) two variables without a help of third variable. (20 Marks)

- 3) You are requested to write a computer program for display the final grade of "IIT 111-1 Foundation of Problem Solving with Programming" course using following information. Course Code, Course Title, Number of Credits, Student Name, Student Date of Birth, Student Registration Number, Student Telephone Numbers. Student can earn 60% marks from continuous assessments and remain 40% from final examination. The final grade based on the total of continuous assessment marks and final examination marks. (50 Marks)

Grading System

Table with 2 columns: Marks Range, Grade. Rows include: 100 < Total Marks (Invalid), 100 >= Total Marks >= 75 (A), 75 > Total Marks >= 50 (B), 50 > Total Marks >= 25 (C), 25 > Total Marks >= 0 (F), 0 > Total Marks (Invalid).

- (a) Identify redundant information in given list.
(b) Decide whether enough information is provided to obtain the answer. If not identify and name them.
(c) Draw a suitable flowchart which can decide and display the final grade.

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