31 TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2075 Ashwin

Exam.	Back		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	III / I	Time	3 hrs.

Subject: - Software Engineering *(CT601)*

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ *Attempt **All questions**.*
- ✓ *The figures **in the margin** indicate **Full Marks**.*
- ✓ *Assume **suitable data** if necessary.*

1. What factors have contributed to the making of the present software crisis? Suggest the possible solutions to the present software crisis? [3+3]
2. Why it is so difficult to gain a clear understanding of what the customer wants? Describe the guidelines for the requirement elicitation process with suitable examples. [3+4]
3. Suppose a travel and tour agency needs a software for automating its book keeping activities. The set of activities to be automated are rather simple and are at present being carried out manually. The travel agency had indicated that it is unsure about the type of user interface which would be suitable for its employees and its customers. Would it be proper for a development team to use the spiral model for developing this software? Justify. [6]
4. A company needs to develop a time Management system (TMS) for its executives. The software should let the executives register their daily appointment schedules. The information to be stored includes person (s) with whom meeting is arranged, venue, the time and duration of the meeting, and the purpose. When a meeting involving many executives needs to be organised, the system should automatically find a common slot in the diaries of the concerned executives, and arrange a meeting at that time. It should also inform the concerned executives about the scheduled meeting through e-mail. If no common slot is available, TMS should help the secretary to rearrange the appointments of the executives in consultation with the concerned executives for making room for a common slot. To help the executives check their schedules for a particular day the system should have a very easy-to-use graphical interface. Since the executives and the secretaries have their own desktop computers, the time management software should be able to serve several remote requests simultaneously. Many of the executives are relative novices in computer usage. Everyday morning the time management software should e-mail every executive his appointments for the day. Besides registering their appointments and meetings, the executives might mark periods for which they plan to be on leave. Also, executives might plan out the important jobs they need to do on any day at different hours and post it in their daily list of engagements. Other features to be supported by the TMS are the following–TMS should be able to provide several types of statistics such as which executive spent how much time on meetings. For which project how many meetings were organised for what duration and how many man-hours were devoted to it. Also, it should be able to display for any given period of time the fraction of time that on the average each executive spent on meetings.

   a) List out all functional and non-functional requirements of the Time Management System. [6]
   b) Draw a labelled DFD for the following Time Management Software (TMS). Clearly show the context diagram and its hierarchical decompositions up to level 2. [6]