

**BACHELOR OF COMPUTER APPLICATIONS
(BCA) (Pre-Revised)**

Term-End Examination

June, 2017

00661

**CS-70 : INTRODUCTION TO SOFTWARE
ENGINEERING**

Time : 3 hours

Maximum Marks : 75

**Note : Question number 1 is compulsory. Answer any
three questions from the rest.**

1. A University has 5 categories of employees namely Academics, Non-Academics, Consultants, Contractual staff and Safai karmacharis. Academics are eligible for availing Casual leave, Academic leave, Earned leave, Sick leave, Study leave, Paternity leave (for gents), Maternity leave (for lady staff), Half-pay leave and vacation. Non-Academics are eligible for all the leaves of Academics except the vacation. However, they are eligible to take double the Earned leave earmarked for every year. Consultants are eligible for 10 days Casual leave other than the holidays of the University.

Contractual staff are eligible only for 8 days Casual leave. Safai karmacharis also are eligible to take only 8 days Casual leave. If at all they wish to take more leave, it will be counted as unpaid leave. It is required to design a "Leave Management System" for the above said University and the following are the preliminary stages :

- (a) Prepare SRS document. List the assumptions made including the number of leaves in each type. 5
 - (b) Design and draw the DFDs up to second-level. Follow the conventions. 10
 - (c) Design an ER-diagram. List all the entities, their attributes, cardinality, key constraints, etc. 10
 - (d) Show the relational schema. $2\frac{1}{2}$
 - (e) Suggest the software and hardware requirements, if it is to be executed on LAN, for the benefit of all the employees to apply for appropriate leaves. $2\frac{1}{2}$
2. (a) Discuss the following types of language tools of 4th generation languages : 9
- (i) Query Language
 - (ii) Report Generators
 - (iii) Application Generators

- (b) Explain briefly the concept of Project Outsourcing. Also, mention the implications and consequences, if any, for the parent organisation. 6
3. (a) What is structured methodology ? What are its features and how is it beneficial to constituents like the Management, End-users, Analysts and Programmers ? 8
- (b) What is software crisis ? Explain briefly. 7
4. (a) Define CASE tools. List four broad categories of them and briefly explain any two of them. 7
- (b) Describe briefly, the following important qualities of a software product : 8
- (i) Reliability
 - (ii) Correctness
 - (iii) Portability
 - (iv) Maintainability and Reusability
5. Write short notes on the following : 3×5=15
- (a) Code Generators
 - (b) Benchmark Testing
 - (c) Role of a System Analyst
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