

# RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FOURTH SEMESTER EXAMINATION, JUNE 2022

SECOND YEAR (BATCH 2020-23)

COMPUTER SCIENCE (HONOURS)

Date : 23/06/2022

Time : 11.00 am – 1.00 pm

Paper : IX [CC9]

Full Marks : 50

Answer **any five** questions of the following:

[5×10]

1. What is meant by testing? Explain the different types of a testing performed during software development. [2+8]
2. What is a prototype? Under what circumstances is it beneficial to construct a prototype? Does construction of a prototype always increase the overall cost of software development? [2+3+5]
3. What of the development process models would you follow for the following projects? Give justifications: [4×2.5]
  - a) A simple data processing project
  - b) A new missile tracking system. It is not known if the current hardware/software technology is mature enough to achieve the goals
  - c) A new system for comparing fingerprints. It is not clear if the current algorithms can compare fingerprints in the given response time constraints.
  - d) An on-line inventory management system for an automobile industry.
4. a) Use the structured design methodology to produce a design for the followings:
  - (i) A system to do student registration in the manner it is done at your college
  - (ii) A system to manage the inventory at a hardware store.b) What do you mean by defect injection and removal in SDLC?  
c) State the differences between coupling and cohesion. [3+3+2+2]
5. a) Design a DFD to count the number of different words in an input file.  
b) “Can the system be integrated with other systems which are already in place?”— Justify how feasibility study will be highlighted here.  
c) Define software engineering? [5+3+2]
6. a) What do you mean by “functional and non-functional requirements” in SDLC? Give suitable examples.  
b) List some possible problems that can come up if the methods you use for developing small software are used for developing large software system?  
c) State the differences between white-box and black-box testing. [4+3+3]
7. a) If the primary goal is to make software maintainable, list some of the things you *will do* and some of the things you *will not do* during (a) design, (b) coding, and (3) testing.  
b) State the shortcomings of DFD.  
c) Which should be very primarily focused to make a good testing? [6+3+1]

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