Nepal college of information technology

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| Level: Bachelor | Semester – Spring | Year : 2013 | |
| Programme: BE-IT | | Full Marks : 100 | |
| Course: Software Engineering Fundamentals | | Time : 3hrs. | |
| *Candidates are required to give their answers in their own words as far as practicable.* | | |
| *The figures in the margin indicate full marks.*  *Assume suitable data if necessary* | | |
| Attempt all the questions. | | |

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|  | 1. What is a software engineering paradigm? Discuss the RAD model, stating its advantages and disadvantages. 2. What do you mean by indirect measures in software measurement? Calculate the function point value for a project with the following information:   Number of input = 64  Number of output = 120  Number of inquiries = 48  Number of user files = 16  Number of external files = 4  Given that, all complexity adjustment values are average. | 8  7 |
|  | 1. What do you mean by the "Constructive Cost Model" in software project planning? Also justify it as static estimation model. 2. What is FTR? Why is it important? Explain the guidelines for conducting FTR. | 8  7 |
|  | 1. What do you mean by version control? Why is configuration audit essential during software development process?   **OR**  How is change controlled during the software development? Explain.   1. What do you mean by software requirement elicitation? Discuss Facilitated Action Specification Technique for requirement elicitation. | 8  7 |
|  | 1. Discuss the key principles for software design. 2. How do cohesion and coupling significantly affect the modular design? | 7  8 |
|  | 1. What is white box testing? Discuss in detail the use of cyclomatic complexity in basis path testing with an example. 2. Discuss the need of integration testing. Compare Top-down integration and Bottom-up integration. | 8  7 |
|  | 1. Why is Software Architecture important? What are the types of software architecture? Explain any two of them. 2. What do you understand by Reactive and Proactive Risk? In a software project, 80 reusable components were planned. Only 80 percent of the software components scheduled for reuse were, in fact integrated into the application. The remaining functionality had to be custom developed. If the Risk probability was estimated as 30%, the average component was 100 LOC and local data indicated that the engineering cost for each LOC was $ 14.00. What would be the Risk Exposure Factor and how much will be the total cost of the project? | 7  8 |
|  | Write short notes on (***Any Two***):   1. ISO quality standard 2. Software Reliability 3. Alpha testing and beta testing 4. QFD | 2×5 |