Principle of Modern Software Engineering (UGCS-207)

End Term Examination - Jan 2025

Section A (1 mark each, compulsory)

i) What are the three key layers of software engineering as a layered technology?
ii) Discuss the design, conceptual model of UML.
iii) Define an architectural style in software design?
iv) What is a GANTT chart?
v) Define the main characteristic of the unified process.
vi) Define the purpose of a feasibility study.
vii) What is the purpose of a use case diagram?
viii) Explain Component-Based Software Development (CBSD).
ix) What are functional requirements?

Section B (5 marks each, attempt any four)

Q2. Discuss the evolving role of software myths.
Q3. Explain the importance of functional and non-functional requirements.
Q4. Explain the significance of design quality in software engineering.
Q5. Compare black-box testing and white-box testing, highlighting their methodologies.
Q6. Describe the role of software quality metrics in project planning and control.
Q7. Explain the key principles of PSP (Personal Software Process) and Six Sigma.

Section C (10 marks each, attempt any two)

Q8. Compare and contrast the Waterfall Model, Incremental Process Models, and Evolutionary Process Models. Highlight their advantages, disadvantages, and suitable application scenarios.
Q9. Describe the key components of software engineering as a layered technology. Discuss the importance of the Capability Maturity Model Integration (CMMI) and its impact on process assessment and improvement.
Q10. Explain the objectives, methodologies, and applications of ISO, SEI CMMI, PSP, Six Sigma.