

[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 6088

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Your Roll No.....

Unique Paper Code : 234405

Name of the Course : B.Sc. (H) Computer Science

Name of the Paper : Software Engineering (CSHT-410)

Semester : IV

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. The paper has two sections.
3. All questions in 'Section A' are compulsory.
4. Attempt any four questions from 'Section B'.

SECTION A

1. (i) 'Software is developed or engineered but does not wear out'. Justify this statement. (3)
- (ii) Explain how the spiral model combines the iterative nature of prototyping and systematic aspects of the waterfall model. (3)
- (iii) What is SRS (Software Requirement Specification)? (2)
- (iv) How does the coupling and cohesion affect the quality of the Software? (3)
- (v) What is the difference between White Box and Black Box Testing? (3)

P.T.O.

- (vi) Explain the various steps taken in proactive risk strategy. (3)
- (vii) What is the difference between measure, metric and indicator in context of the Software Project ? (3)
- (viii) State the significance of a Gantt chart for scheduling and monitoring a software project. (3)
- (ix) What is software quality control ? (3)
- (x) What is the overall strategy for software testing ? (3)
- (xi) What is the fundamental difference in activities of analysis and design phases of software process ? (3)
- (xii) Differentiate between Private and Public process metrics. (3)

SECTION B

- 2. (a) Software Engineering is a layered Technology. Explain it. (5)
- (b) Consider a scenario for a Software Project A as follows - requirements are well understood, project scope is constrained but the market deadline for the entire project is tight.
Identify the process model best suited for this scenario. Give reasons. (5)
- 3. Assume that you have to build an online admission system for your college. Draw a context diagram and level 1 DFD of the system. Also develop data dictionary for the same. (10)
- 4. (a) Use the flow graph to find the cyclomatic complexity of the following code. Also show the no. of independent paths and regions :

Void F1()

Input: array of n integers

Output: esum and osum

begin

i=1, esum=0,osum=0

while(i<=n)

begin

if(a(i)% 2==0)

esum=esum+1

else

osum=osum+1

end if

i=i+1

end do

end

(6)

- (b) What is Software Requirement Analysis ? Explain the various steps involved in software requirement process. (4)
5. (a) Using the COCOMO II Model, estimate the effort required to build the software that produce the 10 screens, 14 reports and require 45 3GL components. Assume that the complexity is difficult with weights 3,8,10 respectively and the productivity rate is high 25. The % reuse of component is zero. (5)
- (b) What is Risk Mitigation, Monitoring and Management plan ? Explain Pareto 80-20 rule to Software Risk. (5)

P.T.O.

6. Write a short note on :

(i) Need for SRS

(ii) Alpha, Beta testing

(iii) Timeline charts

(iv) Functional cohesion

(10)

7. (a) What are the different measures of Software Quality ?

(5)

(b) What is Software Quality Assurance (SQA) ? List the activities performed by SQA group.

(5)