

Software Engineering

Sessional 1, Fall 2016

Date: 19-Sep-16

Marks: 50

Time: 60 mins.

Roll No. _____

Name: _____

Important Instructions

1. Solve the exam on this question paper. Answer sheets are **not** required.
2. Do not look here and there during the exam. Focus on your own question paper.
3. Avoid cutting and scratching.
4. Calculators are allowed.

Question 1 (Max. Marks = 20 = 5 + 10 + 5)

Consider the requirements of a computer-based assessment application. Effort estimates in person-months (PM) appear in square brackets. Assume that you are given a fixed-size team of 4 full-time developers and non-negotiable timeline of 6 months.

Requirements
1 A question-bank needs to be maintained per course. Only the teacher teaching the respective course can view / update the question bank. [6 PM]
2 Teacher can design the exam and include as many questions from the question bank as desired. [12 PM]
2.1 Exam may be divided into several sections where each section may further contain several questions.
2.2 Questions may be of several types e.g. MCQ, fill-in-the-blanks, descriptive, etc.
2.3 Each exam should have a specified time-limit.
3 Teacher should be able to administer the exam to students. Each student's responses to the exam questions shall be separately recorded. [2 PM]
4 Teacher shall be able to mark / grade each student's exam. [2 PM]
5 Teacher shall be able to report the class performance in the exam. Supported formats include tabular and graphical. [2 PM]

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1. Identify dependencies among requirements using requirements IDs only.

1 --> 2 --> 3 --> 4 --> 5

2. Keeping the above-mentioned dependencies in mind and assuming that requirements cannot be split across iterations and that each iteration (which cannot be overlapped with another iteration) is at least 1.5 months long and at most 3 months long, determine the number of iterations required to successfully deliver the complete computer-based assessment application using the Incremental model. Also, indicate (using requirements IDs only) the requirements implemented in each of your suggested iteration.

3 iterations

Iteration 1: 1

Iteration 2: 2

Iteration 3: 3, 4, 5

3. List different problems with the wordings used in requirement 2 mentioned in the table above.

a. It is not written as a shall statement.

b. It contains ambiguous words e.g. several.

c. It is incomplete e.g. all questions types are not listed explicitly (etc. is used); time unit (hour, minute, second) to be used for specifying time limit is not mentioned.

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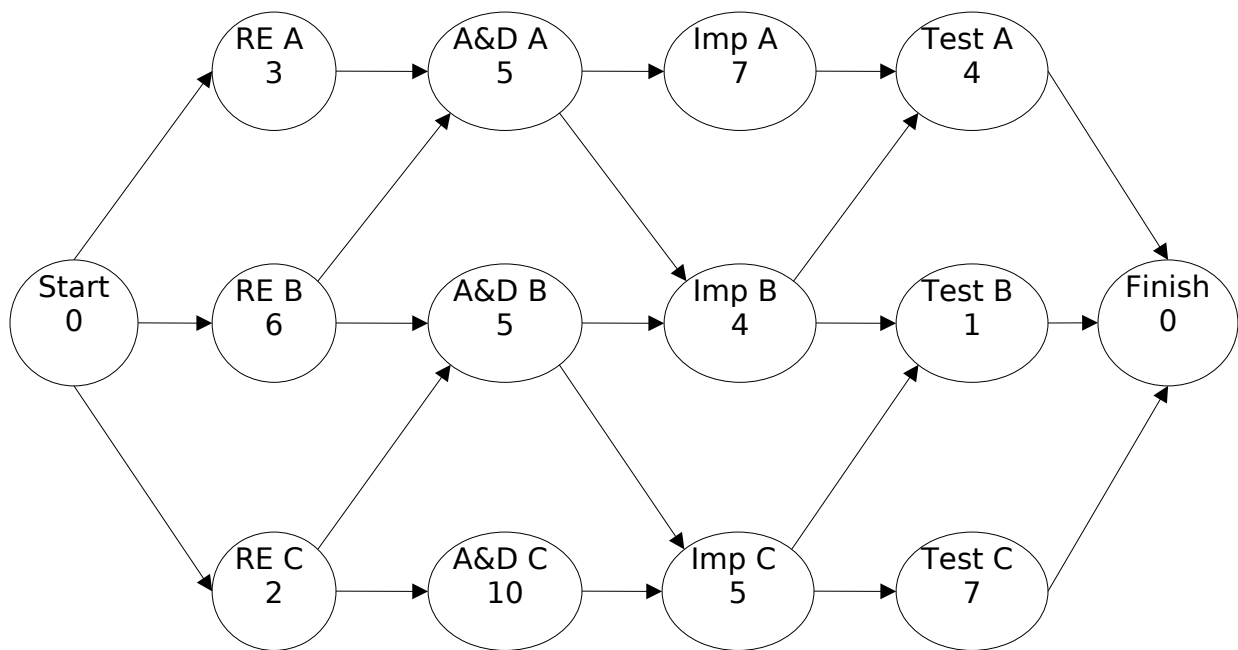
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Question 2 (Max. Marks = 30 = 10 + 10 + 10)

The diagram below shows the task network for project FASTTrack - an automated cargo-tracking system. Numbers inside ovals represent task durations in weeks and arrows indicate task dependencies. Use this task network to answer the questions given below. Show all of your working clearly.

[Important Note: There is no partial credit in this question. Therefore, check your answers carefully.]



a. What is the **minimum** duration (in weeks) of FASTTrack?

24

b. Which tasks of FASTTrack are **not** critical?

RE A, RE B, A&D A, A&D B, Imp A, Imp B, Test A, Test B

c. What is the **maximum** lag/delay (in weeks) of a task in FASTTrack? [Note: Lag/delay is the difference between the earliest and the latest end time.]

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