CLASS: BE   SEMESTER: VI/ADD
BRANCH: CSE   SESSION : SP/2019

SUBJECT : CS6109 SOFTWARE ENGINEERING

TIME: 1.5 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

Q1 (a) State two important differences between software projects and other engineering   [2]
         projects.
    (b) Draw the neat diagrams of the following agile process models: [3]
          (i) XP (ii) Scrum

Q2 (a) List the different UML views of a system. Are all views required for developing a system?   [2]
         Give reasons for your answers.
    (b) Prepare a use case diagram using the following business functions and actors of a   [3]
         Typical IoT Based Health Monitoring system:
         Doctor, Controller, Display, Alerts, Measure Body Temperature, Temperature Sensor,
         Measure Pulse, Pulse Sensor.

Q3 (a)   (i) It is impossible to separate specification with implementation, but in several cases   [2]
         they can be intermixed. Give a case to justify the statement. (ii) If you were a lead
         developer of a software company and you are asked to submit a project/product within
         a stipulated time-frame with no cost barriers, which model would you select? And why?
    (b) List the risk mitigation steps for the following category of   [2]
         (i) software Shortage of technically trained manpower
          (ii)To many requirements changes List the risk mitigation steps for the following
         category of software risks:
    (c) "Get the amount from the user and give him the receipt", in context of ATM software,   [1]
         Is the scenario true according to guidelines of effective use case writing. Give reasons.

Q4 (a) Draw the Software Curve (ideal and actual).   [2]
    (b) List one examples each for the given type of software risk: Technology, Business,   [2]
         People and Project.
    (c) Why requirement elicitation is difficult? Give one example each for Normal, Expected   [1]
         and Exciting requirements.

Q5   Define a precedence network? Consider a following project specification with estimated activity duration and precedence requirements and answer the following questions:

Activity	Depends on	Duration(days)
A: Feasibility Study		5
B: Requirement Analysis	A	7
C: IEEE-SRS	B	6
D: High level Design	A	5
E:Architectural Design	D	10
F:UML Class diagram	B	15
G:Behavioural Diagrams	B	8
H:Component and Deployment Diagrams	G	8
I:Implementation	C	4
J:Unit Testing	G	4
K:Integration and System Testing	E,F	5
L:Installation and Support	I,H	3

(a) Draw the precedence network.   [3]
(b) Find the critical path and the shortest duration of project completion   [2]

Q6 (a) List various level of SEI-CMM in the order they appear.   [1]
     (b) Explain briefly the scaling-up and scaling-out of agile methods.   [1]
     (c) Prepare a context diagram of Airline Reservation System with one entity called   [3]
          customer. Also draw the level-1 DFD by preserving all the inputs and outputs shown in
          level-0 DFD. The following processing units and entities must be present in level-1DFD:
          Retrieve and Display, Seat Reservation, Cancellation, Seat Allocation, Ticket
          Generation, Total Cost Calculation, Customer, Flight Database.

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