

Department of Computer Science and Engineering

Continuous Assessment Test – III

Question Paper

Degree & Branch	BE (CSE)				Semester	IV
Subject Code & Name	UCS1405 Software Engineering				Regulation: 2018	
Academic Year	2019-2020 EVEN	Batch	2018-2022	Date	16.05.2020	FN
Time: 90 Minutes	Answer All Questions				Maximum: 50 Marks	

Part – A Answer any TWO questions (2 X 20 = 40 Marks)

<KL4>	<p>1. The department of public works for a large city has decided to develop a Web-based pothole tracking and repair system (PHTRS). A description follows:</p> <p>Citizens can log onto a website and report the location and severity of potholes. As potholes are reported they are logged within a “public works department repair system” and are assigned an identifying number, stored by street address, size (on a scale of 1 to 10), location (middle, curb, etc.), district (determined from street address), and repair priority (determined from the size of the pothole). Work order data are associated with each pothole and include pothole location and size, repair crew identifying number, number of people on crew, equipment assigned, hours applied to repair, hole status (work in progress, repaired, temporary repair, not repaired), amount of filler material used, and cost of repair (computed from hours applied, number of people, material and equipment used). Finally, a damage file is created to hold information about reported damage due to the pothole and includes citizen’s name, address, phone number, type of damage, and dollar amount of damage. PHTRS is an online system; all queries are to be made interactively.</p> <p>a. Draw a DFD for the PHTRS system. Write down your assumptions clearly. (10 Marks)</p> <p>b. Define flow boundaries and map the DFD into a software architecture using transform analysis (10 Marks)</p>	<CO4>
<KL3>	<p>2. Consider Zoom App and a scenario of scheduling a meeting.</p> <p>a. Design the component for this scenario using a flow chart (7 Marks)</p> <p>b. List the actions, conditions and rules in this scenario and represent them using a decision table (6 Marks)</p> <p>c. Represent the design of the component in PDL (7 Marks)</p> <p>List your assumptions about the scenario clearly.</p>	<CO4>
<KL4>	<p>3. Consider the following interactive application of an interior design system</p> <p>Assume that a small software company wants to build a computer-aided design system explicitly for interior designers. To get a better understanding of how they do their work, actual interior designers are asked to describe a specific design function. When asked: “How do you decide where to put furniture in a room?” an interior designer writes the following informal use</p>	<CO4>

	<p>case:</p> <p>I begin by sketching the floor plan of the room, the dimensions and the location of windows and doors. I'm very concerned about light as it enters the room, about the view out of the windows (if it's beautiful, I want to draw attention to it), about the running length of an unobstructed wall, about the flow of movement through the room. I then look at the list of furniture my customer and I have chosen—tables, chairs, sofa, cabinets, the list of accents—lamps, rugs, paintings, sculpture, plants, smaller pieces, and my notes on any desires my customer has for placement. I then draw each item from my lists using a template that is scaled to the floor plan. I label each item I draw and use pencil because I always move things. I consider a number of alternative placements and decide on the one I like best. Then, I draw a rendering (a 3-D picture) of the room to give my customer a feel for what it'll look like.</p> <p>In addition, other features of the system that would please the interior designer might also be conceived. For example, a digital photo could be taken looking out each window in a room. When the room is rendered, the actual outside view could be represented through each window.</p> <p>Develop a user model, design model, and mental model for the above system. (6 + 7 + 7 = 20 Marks)</p>	
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Part – B (1 X 10 = 10 Marks)

<KL3>	<p>4. A program finds the greatest of three given numbers. Develop a set of test cases that you feel will adequately test this program using basis path testing method.</p> <ol style="list-style-type: none"> Draw the control flow chart (2 Marks) Represent it as a flow graph (2 Marks) Find the number of independent paths (2 Marks) Develop the test cases (4 Marks) 	<CO5>
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