Roll Number: _____

Thapar Institute of Engineering and Technology, Patiala
Department of Computer Science and Engineering

BE- COE (V Semester) MST   **UCS503: Software Engineering**

Time: 2 Hrs; MM: 25   Name of Faculty: Dr. Harkiran Kaur,
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Note: Attempt all questions. Use your assumptions in diagram questions and clearly write your assumptions.

Q.1	(a) Categorize the following requirements as functional requirements or quality attributes.	(2)

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    i. The customer will pay for the parking on hourly basis.
    ii. The system should be capable enough to process 10000 requests at a time.
    iii. The recipient should be able to search nearest hospitals where the required blood group is available.
    iv. During online payment, the intruder should not be able to steal customer's card details.

(b) Consider a project with the following parameters and Compute the Function Point Count (FPC). Write formulas and all calculation steps. (4)

External inputs: 8 with low complexity 11 with average complexity	**External outputs:** 14 with average complexity 7 with high complexity	**External Enquiries:** 6 with average complexity
External files: 12 with high complexity 3 with low complexity	**External Interfaces:** 5 with low complexity 4 with high complexity	

In addition to this, the system requires: Moderate distributed processing functions, data communication is not important, usability is very essential. Assume remaining other complexity adjustment factors as Average.

Q.2 (a) Explain the Scrum process flow, along with artefacts of Scrum. (3)

(b) Create a User Story Card (both front and back side) for the "Flight Booking" function in an Airlines Management System. (4)

Q.3 Activity Room Booking System is an online system for the University's society managers through which they can book the activity spaces through the web portal. The system is used by the society managers and Room's Coordinator, to look after all the bookings and maintain the records. Using this system, the society managers can check the available rooms, for capacity, specific date, time and duration and then request the room coordinator to book the rooms. The room coordinator, after verifying the room request, purpose, capacity and duration of the booking, books the room. Once the room coordinator confirms the room booking, the system sends acknowledgement to the society manager. Draw Level 0 and Level 1 DFD for this system. (2+4 = 6)

Q.4	(a) A grocery store owner wants a customized software for managing his grocery shop in an efficient manner. After three meetings with the System Analyst, the store owner is able to convey some of the requirements about software. These are: Software should be able to track the details of items purchased, items sold, monthly and weekly analysis of sale. System Analyst is working hard to know more about store owner's requirements about the software. Suggest the most suitable process model for the System Analyst. Justify your answer.	(2)
	(b) Shopsy is an online shopping application by Flipkart, where customers can search and purchase products from huge variety of options available on app. The Customer writes the product name in the search bar. Then this mobile app searches checks for all the available product options, that meet the customer's search criteria and displays these products to the customer. The customer can add items to cart, and select quantity of each item in the cart. Once the customer proceeds for payment, he selects the payment option. For Cash on Delivery option, system sends the order confirmation message on his registered email. For the online payment, the control will be transferred to payment gateway, wherein the customer can fill details as per the selected online payment option. Once the payment is confirmed, the user is acknowledged about order and payment confirmation. The item count in the database will be decremented as per the purchase. In addition, the customer can also choose and save cart items for later purchase. Draw a neat and clean Class Diagram, for the above mentioned scenario.	(4)