Time: 50 mts
Attempt all the questions. All question carry equal marks.

Q1.	**Restaurant Automation System (RAS):** A restaurant owner wants to computerise his order processing, billing, and accounting activities. He also expects the computer to generate statistical report about sales of different items. A major goal of this computerisation is to make supply ordering more accurate so that problem of excess inventory is avoided as well as the problem of non-availability of ingredients required to satisfy orders for some popular items is minimized. The computer should maintain the price of all the items and also support changing the prices by the manager. Whenever any item is sold, the sales clerk would enter the item code and the quantity sold. The computer should generate bills whenever food items are sold. Whenever ingredients are issued for preparation for food items, the data is to be entered into the computer. Purchase orders are generated on a daily basis, whenever the stock for any ingredient falls below a threshold value. The computer should calculate the threshold value for each item based on the average consumption of this ingredient for past three days and assuming that a minimum of two days stock must be maintained for all ingredients. Whenever the ordered ingredients arrive, the invoice data regarding the quantity and price is entered. If sufficient cash balance is available, the computer should print cheques immediately against invoice. Monthly sales receipt and expenses data should be generated whenever the manager would request to see them. (a) Perform structured analysis (SA) and structured design (SD) for developing the above *Restaurant Automation System* using the SA/SD technique. b) Explain data dictionary and construct data dictionary of the said example.	(7, 3)
Q2.	Describes, cohesion and coupling with the help of suitable example.	(5)
Q3.	Distinguish between software verification and software validation. Can one be used in place of the other? Justify your answer. In which phase(s) of the interactive waterfall SDLC are the verification and validation activities performed?	(5)