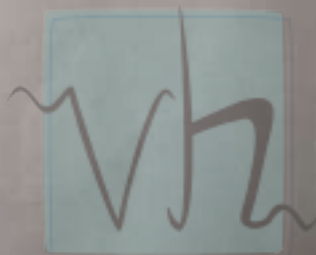




**Answer ALL Questions**

**(10 X 10 = 100 Marks)**

1. a) Briefly explain how important is human visual system in user interfaces? [4]
- b) Give examples of applications where you can use Short Term Memory and Long Term Memory in interactive designs. [4]
- c) Choose any text entry device and find its evolution in terms of user interaction characteristics. [2]
2. a) Explain, why the iterative user interface design process does not fit well into the traditional "waterfall" model of the software development process? [2]
- b) State the main feature of likert scale questionnaire. Give its example. [3]
- c) You have been hired as an interactive design consultant to help with the design and evaluation of a mobile banking interface. Describe how you would undertake a "direct observation" approach for usability evaluation of a mobile banking application. [5]
3. The theory behind the Human information processing includes sensory store, perception, working memory, long-term memory, attention, response execution, output and feedback loop. Give a short description (with drawing) about how the different aspects listed related to each other. [10]
4. Describe the Nielsen's 10 heuristics for interface design and give examples based on VTOP academic portal for each design principles? [10]
5. Explain in detail GOMS modelling in human computer interactions with suitable example? [10]
6. a) Create a textual dialog notation using regular expression for (i) drawing a polygon (ii) validating a password as weak, average and strong (fix your own password constraints) [5]
- b) Construct a JSD for the scenario given below: [5]  
Consider an online shopping website, the customer browses the catalog and selects items he wants to buy. Customer goes to check out. Customer fills in shipping information. The system presents full pricing information. Customer fills in credit card information. The system authorizes purchase. Then system confirms sale immediately. Finally system sends confirming email to customer.
7. Briefly explain the major concepts in groupware. Give the typical Time/Space Matrix for groupware and give an example for each of the cells of the matrix [10]
8. a) The website of the VIT University ([www.vit.ac.in](http://www.vit.ac.in)) is updated to make it more effective, efficient and user-friendly. Now they are conducting "user observation" for usability testing. In this testing some students are invited to perform some actions on the website. Which of the points an observer must keep in mind while conducting usability testing based on "user observation". [5]
- b) Briefly explain the various activities that should be considered for conducting user acceptance testing. Describe the methods for confirming whether the interface design complies with the user requirements? [5]



9. Consider an online bus reservation interface system. Seats can be reserved by customers on the web site of the bus company. The customer has the option to directly pay for the seat through the website. In that case, the seat cannot be cancelled (neither by the customer nor by the bus company). (If the customer has not paid for the seat, the bus company can cancel the seat if the customer does not show up one hour before the trip. When the reservation is cancelled, the seat will become free and can be sold to another customer. Both the customer and the company staff must authenticate themselves for performing operations with the system. [10]

- (i) Provide a HTA for the given scenario.
- (ii) Construct a State transition diagram for the bus reservation interface system that specifically describes the details of seat reservation.

10. a) Describe the evolution of Human computer interaction and explain the latest technological developments in HCI. Include in your description the motivation or purpose that drove to new developments in HCI. [5]

b) Answer the following five statements by first stating whether it is true or false and then given one sentence for justifying your answer [5]

- a) The Model Human Processor is used in HCI to model complex cognitive processes
- b) Gestalt is important to HCI as it offers tools to understand scenes.
- c) Petri Nets can be helpful in modeling concurrent activities in a user interface.
- d) In augmented reality a screen is composed of a computer animation of the reality.
- e) You drag a folder to make a copy of its contents. An animation appears on the screen, showing files moving from one folder to another. This is an example of feedback.

