



MOHAMED SATHAK A J COLLEGE OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING
&
INFORMATON TECHNOLOGY

QUESTION BANK

CS8079

HUMAN COMPUTER INTERACTION

IV YEAR – VIII SEM

SYLLABUS

UNIT I FOUNDATIONS OF HCI

9

The Human: I/O channels – Memory – Reasoning and problem solving; The computer: Devices – Memory – processing and networks; Interaction: Models – frameworks – Ergonomics – styles – elements – interactivity- Paradigms.

UNIT II DESIGN & SOFTWARE PROCESS

9

Interactive Design basics – process – scenarios – navigation – screen design – Iteration and prototyping. HCI in software process – software life cycle – usability engineering – Prototyping in practice – design rationale. Design rules – principles, standards, guidelines, rules. Evaluation Techniques – Universal Design.

UNIT III MODELS AND THEORIES

9

Cognitive models –Socio-Organizational issues and stake holder requirements – Communication and collaboration models-Hypertext, Multimedia and WWW.

UNIT IV MOBILE HCI

9

Mobile Ecosystem: Platforms, Application frameworks- Types of Mobile Applications: Widgets, Applications, Games- Mobile Information Architecture, Mobile 2.0, Mobile Design: Elements of Mobile Design, Tools.

UNIT V WEB INTERFACE DESIGN

9

Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow. Case Studies

TEXT BOOKS:

1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, “Human Computer Interaction”, 3rd Edition, Pearson Education, 2004 (UNIT I , II & III).
2. Brian Fling, “Mobile Design and Development”, First Edition , O’Reilly Media Inc., 2009 (UNIT –IV).
3. Bill Scott and Theresa Neil, “Designing Web Interfaces”, First Edition, O’Reilly, 2009.(UNIT-V).

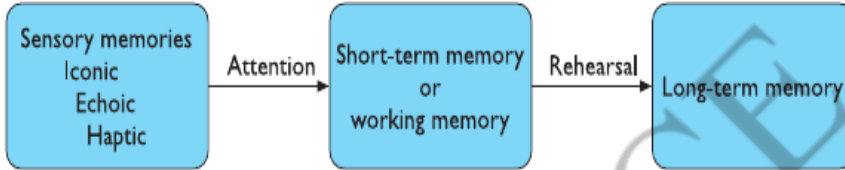
UNIT-I

FOUNDATIONS OF HCI

The Human: I/O channels – Memory – Reasoning and problem solving; The computer: Devices – Memory – processing and networks; Interaction: Models – frameworks – Ergonomics – styles – elements – interactivity- Paradigms.

PART A

Q.No	Questions
1	What is meant by Human-computer interaction? Human-computer interaction is the study, planning and design of how people computer work together so that a person's needs are satisfied in the most effective way.
2	How the HCI ensure the following when designing, selecting, commissioning or modifying software: <ul style="list-style-type: none">● that it is suitable for the task● that it is easy to use and, where appropriate, adaptable to the user's knowledge and experience● that it provides feedback on performance● that it displays information in a format and at a pace that is adapted to the user that it conforms to the 'principles of software ergonomics'
3	What are the input and output channels: <ul style="list-style-type: none">–visual channel–auditory channel–haptic channel–movement

4	Where the Information is stored in memory: <ul style="list-style-type: none"> –sensory memory –short-term (working) memory –long-term memory
5	What are the Input–OUTPUT CHANNELS? In an interaction with a computer the user receives information that is output by the computer, and responds by providing input to the computer.
6	What are the capabilities and limitations of visual processing? Display screens can be used in various public places to offer information, link spaces or act as message areas. These are often called situated displays as they take their meaning from the location in which they are situated. Presenter's shadow can often fall across the screen.
7	Label the structure of memory  <pre> graph LR A["Sensory memories Iconic Echoic Haptic"] -- Attention --> B["Short-term memory or working memory"] B -- Rehearsal --> C["Long-term memory"] </pre>
8	What is long-term memory? It stores factual information, experiential knowledge, procedural rules of behavior. It has a huge, if not unlimited, capacity. Secondly, it has a relatively slow access time of approximately a tenth of a second. Thirdly, forgetting occurs more slowly.
9	What is short term memory Short-term memory or working memory acts as a 'scratch-pad' for temporary recall of information. It is used to store information which is only required fleetingly. Short-term memory can be accessed rapidly, in the order of 70 ms. However, it also decays rapidly, meaning that information can only be held there temporarily, in the order of 200 ms.
10	What are the devices for virtual reality and 3d interaction <ul style="list-style-type: none"> ● Positioning in 3D space <ul style="list-style-type: none"> ○ Cockpit and virtual controls ○ The 3D mouse ○ Dataglove ○ Virtual reality helmets ○ Whole-body tracking ● 3D displays ● Seeing in 3D ● VR motion sickness ● Simulators and VR caves

11	<p>Define Reasoning. APR/MAY 2017</p> <p>Reasoning is the process by which we use the knowledge we have to draw conclusions or infer something new about the domain of interest.</p>
12	<p>What are the types of reasoning? APR/MAY 2017</p> <p>Deductive reasoning Inductive reasoning Abductive reasoning</p>
13	<p>Define Gestalt theory</p> <p>Problem solving is a matter of reproducing known responses or trial and error. problem solving is both productive and reproductive. Reproductive problemsolving draws on previous experience as the behaviorists claimed, but productive problem solving involves insight and restructuring of the problem</p>
14	<p>Define Problem space theory</p> <p>Problem solving involves generating these states using legal state transition operators. The problem has an initial state and a goal state and people use the operators to move from the former to the latter. Such problem spaces may be huge, and so heuristics are employed to select appropriate operators to reach the goal</p>
15	<p>What are the text entry devices?</p> <ul style="list-style-type: none"> • The alphanumeric keyboard The QWERTY keyboard Ease of learning -alphabetic keyboard Ergonomics of use DVORAK keyboard and split designs • Chord keyboards • Phone pad and T9 entry • Handwriting recognition • Speech recognition
16	<p>What are the POSITIONING, POINTING AND DRAWING devices?</p> <ul style="list-style-type: none"> • keys and discrete positioning • The mouse • Touchpad • Trackball and thumbwheel • Joystick and keyboard nipple • Touch-sensitive screens • Stylus and light pen • Digitizing tablet • Eyegaze • Cursor
17	<p>What are the display devices?</p> <ul style="list-style-type: none"> • Bitmap displays – resolution and color • Liquid crystal display • Special displays • Virtual reality helmets • Whole-body tracking

18	What are the Devices for virtual reality and 3D interaction? <ul style="list-style-type: none"> • Seeing in 3D • VR motion sickness • Simulators and VR caves • Touch, feel and smell • Physical controls
19	Define Visualization. It is a cognitive process that allows people to understand information that difficult to perceive, because it is either too voluminous or too abstract
20	What are the stages of execution and evaluation cycle? 1.Establishing the goal. 2.Forming the intention. 3.Specifying the action sequence. 4.Executing the action. 5.Perceiving the system state. 6.Interpreting the system state. 7.Evaluating the system state with respect to the goals and intentions.
21	What are goals of interface design? The goals in interface design are <ul style="list-style-type: none"> • Reduce visual work. • Reduce intellectual work. • Reduce memory work. • Reduce motor work. • Minimize or eliminate any burdens
22	What are the common interface styles ? <ul style="list-style-type: none"> • command line interface • menus • natural language • question/answer and query dialog • form-fills and spreadsheets • WIMP • point and click • three-dimensional interfaces
23	What are the several factors that can limit the speed of an interactive system? <u>NOV/DEC2018</u> <ul style="list-style-type: none"> • Computation bound • Storage channel bound • Graphics bound • Network capacity
24	What are The stages in Norman's model of interaction 1.Establishing the goal. 2. Forming the intention. 3. Specifying the action sequence. 4. Executing the action. 5. Perceiving the system state. 6. Interpreting the system state.

	7. Evaluating the system state with respect to the goals and intentions.
25	<p>What is ergonomics <u>APR/MAY 2017</u></p> <p>Ergonomics (or human factors) is traditionally the study of the physical characteristics of the interaction: how the controls are designed, the physical environment in which the interaction takes place, and the layout and physical qualities of the screen</p>
26	<p>What are the organizations in Arrangement of controls and displays. Functional controls and displays are organized so that those that are functionally related are placed together; sequential controls and displays are organized to reflect the order of their use in a typical interaction (this may be especially appropriate in domains where a particular task sequence is enforced, such as aviation); frequency controls and displays are organized according to how frequently they are used, with the most commonly used controls being the most easily accessible.</p>
27	<p>What is interactivity?</p> <p>It is worth remembering that interactivity is the defining feature of an interactive system. This can be seen in many areas of HCI. For example, the recognition rate for speech recognition is too low to allow transcription from tape, but in an airline reservation system, so long as the system can reliably recognize yes and no it can reflect back its understanding of what you said and seek confirmation. Speech-based input is difficult, speech-based interaction easier.</p>
28	<p>What are the constraints of Physical design and engagement?</p> <p>Ergonomic : You cannot physically push buttons if they are too small or too close. Physical: The size or nature of the device may force certain positions or styles of control, for example, a dial like the one on the washing machine would not fit on the MiniDisc controller</p>
29	<p>What are the PARADIGMS FOR INTERACTION?</p> <ul style="list-style-type: none"> ● Time sharing ● Video display units ● Programming toolkits ● Personal computing ● Window systems and the WIMP interface ● The metaphor ● Direct manipulation ● Language versus action ● Hypertext ● Multi-modality ● Computer-supported cooperative work ● The world wide web ● Agent-based interfaces ● Ubiquitous computing ● Sensor-based and context-aware interaction

30	<p>What are the categories principles to support usability?</p> <p>Learnability – the ease with which new users can begin effective interaction and achieve maximal performance.</p> <p>Flexibility – the multiplicity of ways in which the user and system exchange information.</p> <p>Robustness – the level of support provided to the user in determining successful achievement and assessment of goals.</p>
31	<p>What are the mental models and why they important in interface design? (APR/MAY 2018)</p> <p>Models are one of the most important concepts in human–computer interaction (HCI). It's a prime goal for designers to make the user interface communicate the system's basic nature well enough that users form reasonably accurate (and thus useful) mental models. Individual users each have their own mental model.</p>
32	<p>List out text entry devices? (APR/MAY 2018)</p> <p>Text entry interface or text entry device is an interface that is used to enter text information an electronic device. A commonly used device is a mechanical computer keyboard. Most laptop computers have an integrated mechanical keyboard, and desktop computers are usually operated primarily using a keyboard and mouse. Devices such as smartphones and tablets mean that interfaces such as virtual keyboards and voice recognition are becoming more popular as text entry systems.</p>
33	<p>What is forgetting?</p> <p>Forgetting or disremembering is the apparent loss or modification of information already encoded and stored in an individual's long term memory. It is a spontaneous or gradual process in which old memories are unable to be recalled from memory storage. Forgetting also helps to reconcile the storage of new information with old knowledge.</p>
34	<p>What is retrieval?</p> <p>Information reproduced from memory can be assisted by cues, e.g. categories ,imagery recognition -information gives knowledge that it has been seen beforeless complex than recall - information is cue</p>
35	<p>What is touch?</p> <p>It gives important feedback about environment. May be key sense for someone who is visually impaired. Stimulus received via receptors in the skin:</p>
36	<p>What are the effectors?</p> <p>Fingers, Eyes, Head, Vocal system</p>
37	<p>What is reading?</p> <p>There are several stages in the reading process. First, the visual pattern of the word on the page is perceived. It is then decoded with reference to an internal representation of language. The final stages of language processing include syntactic and semantic analysis and operate on phrases or sentences.</p>

38	What is hearing? It is information about environment: distances, directions, objects etc.
39	What is sensory memory? It is a stimuli received through senses iconic memory: visual stimuli echoic memory: aural stimuli haptic memory: tactile stimuli
40	What is semantic memory? Semantic memory structure provides access to information represents relationships between bits of information supports inference
41	Define controlled vocabularies? Vocabulary control comes in many shapes and sizes. At its most vague, a controlled vocabulary is any defined subset of natural language. At its simplest, a controlled vocabulary is a list of equivalent terms in the form of a synonym ring, or a list of preferred terms in the form of an authority file.
42	What is gestalt theory? problem solving both productive and reproductive ductive draws on sight and restructuring of ætive but not enough evidence to explain `insight' etc
43	What is meant by Batch processing? Processing interactions takes place over hours or days. In contrast the typical desktop computer system has interactions taking seconds or fractions of a second (or with slow web pages sometimes minutes!). The field of Human Computer Interaction largely grew due to this change in interactive pace. It is easy to assume that faster means better, but some of the paper-based technology.
44	Define Digital paper. Digital paper, also known as interactive paper, is patterned paper used in conjunction with a digital pen to create handwritten digital documents. The printed dot pattern uniquely identifies the position coordinates on the paper. The digital pen uses this pattern to store the handwriting and upload it to a computer
45	What is metaphor Computing to other real-world activity is effective teaching technique. LOGO's turtle dragging its tail b. file management on an office desktop. word processing as typing financial analysis on spreadsheets. virtual reality user inside the metaphor Problems some tasks do not fit into a given metaphor cultural bias

46	What is meant by bit map display? Bit map display is made of vast numbers of colored dots or pixels in a rectangular grid. These pixels may be limited to black and white in gray scale, or full color. The color or, for mono chrome screens, the intensity at each pixel is held by the ter's video card. On e bit per pixel canstore on/off information, and hence onlyblack and white
47	Define Moore's law Moore's law refers to an observation made by Intel co-founder Gordon Moore in 1965. He noticed that the number of transistors per square inch on integrated circuits had doubled every year since their invention. Moore's law predicts that this trend will continue into the foreseeable future. Although the pace has slowed, the number of transistors per square inch has since doubled approximately every 18months
48	What is reading? There are several stages in the reading process. First, the visual pattern of the word on the page is perceived. It is then decoded with reference to an internal representation of language. The final stages of language processing include syntactic and semantic analysis and operate on phrases or sentence.
49	What is Interaction HCI attempts to ensure that they both get on with each other and interact successfully. In order to achieve a usable system, you need to apply what you know about humans and computers, and consult with likely users throughout the design process. In real systems, the schedule and the budget are important, and it is vital to find a balance between what would be ideal for the users and what is feasible in reality.
50	What is Directive reasoning? NOV/DEC 2018 Directive reasoning is sometimes referred to as top-down logic. Its counterpart, inductive reasoning, is sometimes referred to as bottom-up logic.

PART-B

Q.No	Questions
1	Explain different I/O channels in detail?
2	Distinguish between short term & long term memory. State requirements to perform cognitive walkthrough of a system? NOV/DEC 2017

3	Explain the model of the structure of human memory with diagrammatic illustration? <u>APR/MAY 2017</u>
4	Explain the common interface styles used in interactive system. <u>NOV/DEC 2018</u>
5	Discuss the factors that can limit the speed of an interactive computer system? <u>APR/MAY 2017</u>
6	With examples explain the various types of users and the organizational issues to be considered in designing an interactive system? <u>NOV/DEC 2017</u>
7	Explain positioning, pointing and drawing devices in detail.
8	Examine the technology involved in display devices? <u>NOV/DEC 2018</u>
9	List and explain the stages of Norman's model of interaction? <u>APR/MAY 2017</u>
10	Explain different styles of interaction & interface system? <u>APR/MAY 2017</u>
11	Explain in detail about elements of the WMP <u>APR/MAY 2018</u>
12	Write down the effects of finite processor. <u>APR/MAY 2018</u>
13	Write down the factors that can limit the speed of an interactive system? <u>APR/MAY 2018</u>
14	Explain the framework of Human computer interaction <u>NOV/DEC 2018</u>
15	Explain about the features of direct manipulation interfaces in detail <u>NOV/DEC 2018</u>

UNIT-2

DESIGN & SOFTWARE PROCESS

Interactive Design basics – process – scenarios – navigation – screen design – Iteration and prototyping. HCI in software process – software life cycle – usability engineering – Prototyping in practice – design rationale. Design rules – principles, standards, guidelines, rules. Evaluation Techniques – Universal Design.

PART-A

Q.No	Questions
1	What are the steps for Interaction design process? <u>NOV/DEC 2018</u> <ul style="list-style-type: none">• Requirements• Analysis• Design• Iteration and prototyping• Implementation and deployment
2	Identify human characteristics in design? The important human characteristics in design are perception, memory, visual acuity, fovea and peripheral vision, sensory storage, information processing learning, skill and individual differences.
3	What are the guidelines for designing conceptual model? <ul style="list-style-type: none">• Reflect the user's mental model.• Provide action-response compatibility.• Provide proper and correct feedback.• Provide design consistency.• Provide documentation and a help system that will reinforce the conceptual model.• Promote the development of both novice and expert mental models.

4	<p>What are goals of interface design?</p> <ul style="list-style-type: none"> • Reduce visual work. • Reduce intellectual work. • Reduce memory work. • Reduce motor work.
5	<p>What is the navigation in design?</p> <p>Widgets The appropriate choice of widgets and wording in menus and buttons will help you know how to use them for a particular selection or action. Screens or windows You need to find things on the screen, understand the logical grouping of buttons</p>
6	<p>What are the structures of design?</p> <p>local structure</p> <ul style="list-style-type: none"> – looking from one screen or page out <p>global structure</p> <ul style="list-style-type: none"> – structure of site, movement between screens
7	<p>What are the scenarios of software processes?</p> <p>Communicate with others – other designers, clients or users. It is easy to misunderstand each other whilst discussing abstract ideas. Concrete examples of use are far easier to share.</p> <p>Validate other models A detailed scenario can be ‘played’ against various more formal representations such as task models (discussed in Chapter 15) or dialog and navigation models (Chapter 16 and below).</p> <p>Express dynamics Individual screen shots and pictures give you a sense of what a system would look like, but not how it behaves</p>
8	<p>What are the several levels of interaction with computer?</p> <p>Widgets The appropriate choice of widgets and wording in menus and buttons will help you know how to use them for a particular selection or action.</p> <p>Screens or windows You need to find things on the screen, understand the logical grouping of buttons.</p> <p>Navigation within the application You need to be able to understand what will happen when a button is pressed, to understand where you are in the interaction.</p> <p>Environment The word processor has to read documents from disk, perhaps some are on remote networks. You swap between applications, perhaps cut and paste</p>
9	<p>What is Global structure – hierarchical organization?</p> <p>The hierarchy links screens, pages or states in logical groupings. For example, a high-level breakdown of some sort of messaging system. This sort of hierarchy can be used purely to help during design, but can also be used to structure the actual system. For example, this may reflect the menu structure of a PC application or the site structure on the web.</p>

10	<p>What are the implications of wider still?</p> <p>Style issues We should normally conform to platform standards, such as positions for menus on a PC application, to ensure consistency between applications. For example, on our proposed personal movie player we should make use of standard fast-forward, play and pause icons.</p> <p>Functional issues On a PC application we need to be able to interact with files, read standard formats and be able to handle cut and paste.</p> <p>Navigation issues We may need to support linkages between applications, for example allowing the embedding of data from one application in another, or, in a mail system, being able to double click an attachment icon and have the right application launched for the attachment.</p>
11	<p>What are the tools for layout?</p> <ul style="list-style-type: none"> ○ Grouping and structure ○ Order of groups and items ○ Decoration ○ Alignment ○ White space
12	<p>What is prototyping? <u>APR /MAY 2017</u></p> <p>iteration and prototyping are the universally accepted ‘best practice’ approach for interaction design. Prototyping is an example of what is known as a <i>hill- climbing</i> approach</p>
13	<p>What are the prototyping methods? <u>NOV/DEC 2018</u></p> <ol style="list-style-type: none"> 1. To understand what is wrong and how to improve. 2. A good start point.
14	<p>Define usability.</p> <p>The usability describes the effectiveness of human performance. It can be defined as “the capability to be used by humans easily and effectively”.</p> <p>Easily = to a specified level of subjective assessment. Effectively = to a specified level of human performance</p>
15	<p>What is usability engineering?</p> <p>Iterative design practices that involve prototyping and participative evaluation. engineering are also called <i>usability metrics</i>.</p>
16	<p>Define software life cycle.</p> <p>The software life cycle is an attempt to identify the activities that occur in software development. These activities must then be ordered in time in any development project and appropriate techniques must be adopted to carry them through</p>
17	<p>What are the Activities in the life cycle?</p> <ul style="list-style-type: none"> ● Requirements specification ● Architectural design

	<ul style="list-style-type: none"> • Detailed design • Coding and unit testing • Integration and testing • Maintenance
18	<p>What do u mean by universal design ? <u>APR/MAY 2017</u></p> <p>Universal design means designing software that can be used by people of as many abilities as possible, without them having to modify things or use assistive technologies. For most software, the major concerns are:</p> <ul style="list-style-type: none"> • Use of color • Minimum font sizes • Minimum contrast • Alternate text for graphics and visual content
19	<p>Define validation</p> <p>Validation is a much more subjective exercise than verification, mainly because the disparity between the language of the requirements and the language of the design forbids any objective form of proof. In interactive system design, the validation against HCI requirements is often referred to as evaluation and can be performed by the designer in isolation or in cooperation with the customer.</p>
20	<p>What is now level?</p> <p>The <i>now level</i> indicates the value for the measurement with the existing system, whether it is computer based or not.</p>
21	<p>Define worst-case value?</p> <p>The <i>worst case</i> value is the lowest acceptable measurement for the task, providing a clear distinction between what will be acceptable and what will be unacceptable in the final product</p>
22	<p>What is planned level?</p> <p>The <i>planned level</i> is the target for the design and the <i>best case</i> is the level which is agreed to be the best possible measurement given the current state of development tools and technology.</p>
23	<p>What are the Set levels with respect to information ?</p> <ol style="list-style-type: none"> 1. an existing system or previous version 2. competitive systems 3. carrying out the task without use of a computer system 4. an absolute scale 5. your own prototype 6. user's own earlier performance 7. each component of a system separately 8. a successive split of the difference between best and worst values observed <p>in user Tests</p>
24	<p>What are the Problems with usability engineering?</p> <ul style="list-style-type: none"> • they rely on measurements of very specific user actions in very specific situations. it provides a means of satisfying usability specifications and not necessarily usability..

25	<p>What is iterative design?</p> <p>This is the essence of <i>iterative design</i>, a purposeful design process which tries to overcome the inherent problems of incomplete requirements specification by cycling through several designs, incrementally improving upon the final product with each pass.</p>
26	<p>What are the three main approaches to prototyping?</p> <p>Throw-away The prototype is built and tested. The design knowledge gained from this exercise is used to build the final product, but the actual prototype is discarded.</p> <p>Incremental The final product is built as separate components, one at a time. There is one overall design for the final system, but it is partitioned into independent and smaller components. The final product is then released as a series of products, each subsequent release including one more component</p> <p>Evolutionary Here the prototype is not discarded and serves as the basis for the next iteration of design. In this case, the actual system is seen as evolving from a very limited initial version to its final release, Evolutionary prototyping also fits in well with the modifications which must be made to the system that arise during the operation and maintenance activity in the life cycle.</p>
27	<p>What are the potential problems in prototyping?</p> <p>Time Building prototypes takes time and, if it is a throw-away prototype, it can be seen as precious time taken away from the real design task</p> <p>Planning Most project managers do not have the experience necessary for adequately planning and costing a design process which involves prototyping</p> <p>Non-functional features Often the most important features of a system will be non-functional ones, such as safety and reliability, and these are precisely the kinds of features which are sacrificed in developing a prototype</p> <p>Contracts The design process is often governed by contractual agreements between customer and designer which are affected by many of these managerial and technical issues.</p>
28	<p>What are the Techniques for prototyping? <u>NOV/DEC 2018</u></p> <ul style="list-style-type: none"> ● Storyboards ● Limited functionality simulations ● High-level programming support ● Context and environment: The microwave's controls are smooth to make them easy to clean in the kitchen. ● Aesthetic: The controls must look good. ● Economic: It must not cost too much!
29	<p>What is Design rationale?</p> <p><i>Design rationale</i> is the information that explains why a computer system is the way it is, including its structural or architectural description and its functional or behavioral description. design rationale relates to an activity of both reflection (doing design rationale) and documentation (creating a design rationale) that occurs throughout the entire life cycle.</p>

30	<p>What are the importance of <i>Design rationale</i>?</p> <p>Design rationale provides a communication mechanism among the members of a design team. The design rationale can capture the context of a design decision in order that a different design team can determine if a similar rationale is appropriate for their product. Design rationale technique suggesting how arguments justifying or discarding a particular design option are formed.</p>
31	<p>What is multi threading? (APR/MAY 2018)</p> <p>Each process contains a single thread, so programming with multiple processes is programming with multiple threads. But, a process is also an address space, and creating a process involves creating a new address space.</p>
32	<p>What are the categories principles to support usability? (APR/MAY 2018)</p> <p>Learnability – the ease with which new users can begin effective interaction and achieve maximal performance.</p> <p>Flexibility – the multiplicity of ways in which the user and system exchange information.</p> <p>Robustness – the level of support provided to the user in determining successful achievement and assessment of goals.</p>
33	<p>What is meant by linearity?</p> <p>Linearity presentation of information and you process the information without footnotes or references. You start at the beginning and continue to read in sequence until you get to the end. Information may be presented chunks but the author expects you to follow a preset order</p>
34	<p>List the principles of a software design in HCI.</p> <ul style="list-style-type: none"> i. The design process should not suffer from “tunnel vision” ii. The design should be traceable to the analysis model. iii. The design should exhibit uniformity and integration. iv. Design is not coding v. The design should not reinvent the wheel
35	<p>What is Heuristic Evaluation</p> <p>A heuristic evaluation is a usability inspection method for computer software that helps to identify usability problems in the user interface (UI) design. It specifically involves evaluators examining the interface and judging its compliance with recognized usability principles (the “heuristics”). These evaluation methods are now widely taught and practiced in the new media sector, where UIs are often designed in a short space of time on a budget that may restrict the amount of money available to provide for other types of interface testing</p>
36	<p>What is think aloud</p> <p>Think aloud is a form of observation where the user is asked to talk through what he is doing as he is being observed; Think aloud has the advantage of simplicity; it requires little expertise to perform (though can be tricky to analyze fully) and can provide useful insight into problems with an interface. It can also be employed to observe how the system is actually used. It can be used for evaluation throughout the design process, using paper or simulated mock-ups for the earlier stages</p>

37	How to support user support systems. <input type="checkbox"/> quick reference full <input type="checkbox"/> explanation tutorial <input type="checkbox"/> on line and off line document <input type="checkbox"/>
38	What are the approaches present for user support <input type="checkbox"/> Command assistance Command <input type="checkbox"/> prompts Context-sensitive help <input type="checkbox"/> Online tutorials Online <input type="checkbox"/> documentation Wizards and <input type="checkbox"/> assistants <input type="checkbox"/>
39	What is non parametric <input type="checkbox"/> do not assume normal distributionless <input type="checkbox"/> powerful <input type="checkbox"/> more reliable
40	What is goal of evaluation <p>Goal of evaluation is to identify specific problems with the design. These may be aspects of the design which, when used in their intended context, cause unexpected results, or confusion amongst users.</p>
41	What is Widgets <p>The appropriate choice of widgets and wording in menus and buttons will help you know how to use them for a particular selection or action.</p>
42	What is Waterfall Model <p>A fundamental feature of software engineering, therefore, is that it provides the structure for applying techniques to develop software systems. The software life cycle is an attempt to identify the activities that occur in software development. These activities must then be ordered in time in any development project and appropriate techniques must be adopted to carry them through.</p>
43	What is Throw-away <p>The prototype is built and tested. The design knowledge gained from this exercise is used to build the final product, but the actual prototype is discarded.</p>
44	Define Storyboards <p>Probably the simplest notion of a prototype is the storyboard, which is a graphical depiction of the outward appearance of the intended system, without any accompanying system functionality. Storyboards do not require much in terms of computing power to construct; in fact, they can be mocked up without the aid of any computing resource.</p>
45	What is Cognitive walkthrough <p>The origin of the cognitive walkthrough approach to evaluation is the code walkthrough familiar in software engineering. Walkthroughs require a detailed review of a sequence of actions.</p>

46	Define Design rationale. It is the information that explains why a computer system is the way it is, including its structural or architectural description and its functional or behavioral description.
47	What is Design space analysis The design space is initially structured by a set of questions representing the major issues of the design. Since design space analysis is structure oriented, it is not so important that the questions recorded are the actual questions asked during design meetings.
48	What is equitable use The design is useful to people with a range of abilities and appealing to all. No user is excluded or stigmatized. Wherever possible, access should be the same for all; where identical use is not possible, equivalent use should be supported.
49	What is Analysis The results of observation and interview need to be ordered in some way to bring out key issues and communicate with later stages of design models, which are a means to capture how people carry out the various tasks that are part of their work and life.
50	Define Standards Standards for interactive system design are usually set by national or international bodies to ensure compliance with a set of design rules by a large community. Standards can apply specifically to either the hardware or the software used to build the interactive system

PART-B

Q.No	Questions
1	Explain design process in detail.
2	Discuss the principles of good UI design. Evaluate the suitability of the manual tour booking form using UI design principles. <u>NOV/DEC 2017</u>
3	Explain Global structure – hierarchical organization.
4	Explain different Tools for layout
5	Explain in detail about iterative design and prototyping
6	Explain in detail about interaction design process. <u>APR/MAY 2017 . APR/MAY 2018</u>

7	Explain the Principles to support usability. Consider the following usability objective. Theatre booking clerks with low motivation, no computing experience and no previous training, working in a small and hectic box office, are able to learn to reserve or book seats within a one hour period. What measure could be taken and which techniques would you consider appropriate to test whether this objective was met? <u>NOV/DEC2107.</u>
8	Explain Shneiderman's eight Golden rules of interface design <u>APR/MAY 2017</u>
9	Explain about the factors that influence for choosing evaluation techniques. Outline the approaches used for evaluating through expert analysis? <u>APR/MAY 2017,</u> <u>NOV/DEC2018</u>
10	Discuss in detail about the activities in waterfall and spiral model of software life cycle? <u>/MAY 2018. NOV/DEC2018</u>
11	What rules must be followed for interface design? Explain
12	Explain about usability in detail?
13	Discuss in detail about the visual tools used in screen design and layout <u>NOV/DEC2018</u>
14	Explain in detail of the design process in interaction
15	Explain Norman's seven principle for transferring difficult task to simple one in design <u>NOV/DEC 2018</u>

UNIT-3

MODELS AND THEORIES

Cognitive models –Socio-Organizational issues and stake holder requirements –
Communication and collaboration models-Hypertext, Multimedia and WWW.

PART-A

Q.No	Questions
1	<p>Define Cognitive model.</p> <p>Cognitive models represent users of interactive systems. Hierarchical models represent a user's task and goal structure. Linguistic models represent the user–system grammar. Physical and device models represent human motor skills. Cognitive architectures underlie all of these cognitive models.</p>
2	<p>Give applications of hypermedia? <u>APR/MAY 2017</u></p> <ul style="list-style-type: none"> ● Education ● Training ● Science & technology ● Business ● games
3	<p>Define Linguistic model</p> <p>The user's interaction with a computer is often viewed in terms of a language, so it is not surprising that several modeling formalisms have developed centered around this concept. Several of the dialog notations described in Chapter 16 are also based on linguistic ideas. Indeed, BNF grammars are frequently used to specify dialogs.</p> <p>The models here, although similar in form to dialog design notations, have been proposed with the intention of understanding the user's behavior and analyzing the cognitive difficulty of the interface.</p>
4	<p>Define BNF :</p> <p>Representative of the <i>linguistic approach</i> is Reisner's use of Backus–Naur Form (<i>BNF</i>) rules to describe the dialog grammar [301]. This views the dialog at a purely syntactic level, ignoring the semantics of the language. BNF has been used widely to specify the syntax of computer programming languages, and many system dialogs can be described easily using BNF rules.</p>
5	<p>What is TASK – Action grammar :</p> <p><i>Task–action grammar (TAG)</i> [284] attempts to deal with some of these problems by including elements such as parameterized grammar rules to emphasize consistency and encoding the user's world knowledge (for example, up is the opposite of down). To illustrate consistency, we consider the three UNIX commands: cp (for copying files), mv (for moving files) and ln (for linking files). Each of these has two possible forms. They either have two arguments, a source and destination filename, or have any number of source filenames followed by a destination directory:</p>

6	<p>Define Keystroke-level model?</p> <p><i>KLM (Keystroke-Level Model [55])</i> uses this understanding as a basis for detailed predictions about user performance. It is aimed at unit tasks within interaction – the execution of simple command sequences, typically taking no more than 20 seconds. Examples of this would be using a search and replace feature, or changing the font of a word. It does not extend to complex actions such as producing a diagram. The assumption is that these more complex tasks would be split into subtasks (as in GOMS) before the user attempts to map them into physical actions. The task is split into two phases: acquisition of the task, when the user builds a mental representation of the task; execution of the task using the system's facilities.</p>
7	<p>What are the socio-organizational issues and stakeholder requirements?</p> <ul style="list-style-type: none"> - There are several organizational issues that affect the acceptance of technology by users and that must therefore be considered in system design: <ul style="list-style-type: none"> – systems may not take into account conflict and power relationships – those who benefit may not do the work – not everyone may use systems. <p>In addition to generic issues, designers must identify specific stakeholder requirements within their Organizational context. Socio-technical models capture both human and technical requirements.</p>
8	<p>Define Cooperation or conflict?</p> <p>The term 'computer-supported <i>cooperative</i> work' (CSCW) seems to assume that groups will be acting in a cooperative manner. This is obviously true to some extent; even opposing football teams cooperate to the extent that they keep (largely) within the rules of the game, but their cooperation only goes so far. People in organizations and groups have conflicting goals, and systems that ignore this are likely to fail spectacularly.</p>
9	<p>What is Changing power structures ?</p> <p>The identification of stakeholders will uncover information transfer and power relationships that cut across the organizational structure. Indeed, all organizations have these informal networks that support both social and functional contacts. However, the official lines of authority and information tend to flow up and down through line management. New communications media may challenge and disrupt these formal managerial structures.</p> <p>The physical layout of an organization often reflects the formal hierarchy: each department is on a different floor, with sections working in the same area of an office. If someone from sales wants to talk to someone from marketing then one of them must walk to the other's office.</p>
10	<p>What is Free rider problem</p> <p>Even where there is no bias toward any particular people, a system may still not function symmetrically, which may be a problem, particularly with shared communication systems. One issue is the <i>free rider problem</i>. Take an electronic conferencing system. If there is plenty of discussion of relevant topics then there are obvious advantages to subscribing and reading the contributions. However, when considering writing a contribution, the effort of doing so may outweigh any benefits. The total benefit of the system for each user outweighs the costs, but for any particular decision the balance is overturned.</p>

11	<p>Define lotus notes :</p> <p>Lotus Notes can be used to implement workflow systems in a straightforward manner. The sales executive fills in an electronic form which is automatically emailed to the accounts department. When it is approved the order form is automatically emailed to stores, and so on.</p>
12	<p>How requirements are captured :</p> <p>Problems can arise when a system is introduced without a full understanding of all the people who will be affected by it. But how can we better understand and support complex organizational structures, workgroups and potentially conflicting stakeholder needs? We begin by capturing and analyzing requirements, but we need to do this within the work context, taking account of the complex mix of concerns felt by different stakeholders and the structures and processes operating in the workgroups.</p>
13	<p>Define competence model.</p> <p>Competence models tend to be ones that can predict legal behaviour sequences but generally do this without reference to whether they could actually be executed by users. In contrast, performance models not only describe what the necessary behavior sequences are but usually describe both what the user needs to know and how this is employed in actual task execution.</p>
14	<p>Compare the different Types of stake holders. <u>NOV/DEC 2018</u></p> <p>It can be useful to distinguish different categories of stakeholder, and the following categorization from the CUSTOM approach (see [200]) is helpful for this: Primary stakeholders are people who actually use the system – the end-users.</p> <p>Secondary stakeholders are people who do not directly use the system, but receive output from it or provide input to it (for example, someone who receives a report produced by the system).</p>
	<p>Tertiary stakeholders are people who do not fall into either of the first two categories but who are directly affected by the success or failure of the system (for example, a director whose profits increase or decrease depending on the success of the system).</p> <p>Facilitating stakeholders are people who are involved with the design, development and maintenance of the system</p>
15	<p>What are the different activities that occur within a problem space</p> <ul style="list-style-type: none"> - goal formulation - operation selection - operation application and goal completion.
16	<p>What is PUM?</p> <p>Knowledge is encoded in the problem space architecture of Soar, producing a ‘programmed’ user model (the PUM) to accomplish the goal of performing the task. By executing the PUM, the stacking and unstacking of problem spaces needed to accomplish the goal can be analyzed to measure the cognitive load of the intended procedure.</p>
17	<p>What is ICS?</p> <p>ICS provides a model of perception, cognition and action, but unlike other cognitive architectures, it is not intended to produce a description of the user in terms of sequences of actions that he performs. ICS provides a more holistic view of the user as an information-processing machine. The emphasis is on determining how easy particular procedures of action sequences become as they are made more automatic within the user.</p>

18	<p>What is unit task?</p> <p>Abstract task is referred to as the <i>unit task</i>. The unit task does not require any problem-solving skills on the part of the user, though it frequently demands quite sophisticated problem-solving skills on the part of the designer to determine them</p>
19	<p>Define validation</p> <p>Validation is a much more subjective exercise than verification, mainly because the disparity between the language of the requirements and the language of the design forbids any objective form of proof. In interactive system design, the validation against HCI requirements is often referred to as evaluation and can be performed by the designer in isolation or in cooperation with the customer.</p>
20	<p>What is CCT</p> <p>CCT as an engineering tool giving one a rough measure of learnability and difficulty combined with a detailed description of user behavior. This can then be used by analysts employing their professional expertise</p>
21	<p>What is TAG <u>NOV/DEC 2018</u></p> <p><i>Task-action grammar (TAG)</i> attempts to deal with some of these problems by including elements such as parametrized grammar rules to emphasize consistency and encoding the user's world knowledge</p>
22	<p>What is Ethnography :</p> <p>Ethnography is based on very detailed recording of the interactions between people and between people and their environment. It has a special focus on social relationships and how they affect the nature of work. The ethnographer does not enter actively into the situation, and does not see things from a particular person's viewpoint. However, an aim is to be enculturated, to understand the situation from within its own cultural framework. Culture here means that of the particular workgroup or organization, rather than that of society as a whole. Ethnographers try to take an unbiased and open-ended view of the situation. They report and do not like to speculate, so it is often unclear how well their approach can contribute to the design of new systems.</p>
23	<p>What is communication and collaboration models.</p> <ol style="list-style-type: none"> 1. We need to understand normal human-human communication: <ul style="list-style-type: none"> – face-to-face communication involves eyes, face and body – conversation can be analyzed to establish its detailed structure. 2. This can then be applied to text-based conversation, which has: <ul style="list-style-type: none"> – reduced feedback for confirmation – less context to disambiguate utterances – slower pace of interaction but is more easily reviewed. 3. Group working is more complex than that of a single person: <ul style="list-style-type: none"> – it is influenced by the physical environment – experiments are more difficult to control and record – field studies must take into account the social situation.

24	<p>What are the characteristics of computer support cooperative work system <u>NOV/DEC2017</u></p> <ul style="list-style-type: none"> • <i>Awareness</i>: individuals working together need to be able to gain some level of shared knowledge about each other's activities • <i>Articulation work</i>: cooperating individuals must somehow be able to partition work into units, divide it amongst themselves and, after the work is performed, reintegrate it • <i>Appropriation</i> (or tailorability): how an individual or group adapts a technology to their own particular situation; the technology may be appropriated in a manner completely unintended by the designers
25	<p>Define TURN – TAKING . <i>Turn-taking</i> is the process by which the roles of speaker and listener are exchanged. Back channels are often a crucial part of this process.</p>
26	<p>Define Context and its types . Take a single utterance from a conversation, and it will usually be highly ambiguous if not meaningless: ‘the <i>uh</i> with the black cat – “The Green whatsit”’. Each utterance and each fragment of conversation is heavily dependent on <i>context</i>, which must be used to <i>disambiguate</i> the utterance. We can identify two types of context within conversation: internal context – dependence on earlier utterances. For example, when Brian says ‘masses’ in the last transcript, this is meaningful in the light of Alison’s question ‘and lots of chocolate?’. This in turn is interpreted in the context of Brian’s original offer of gateau. external context – dependence on the environment. For example, if Brian had said simply ‘do you want one?’, this could have meant a slice of gateau, or, if he had been holding a bottle, a glass of wine, or, if accompanied by a clenched fist, a punch on the nose.</p>
27	<p>What is Text based communication & types? <u>APR/MAY2017</u> Text-based communication is familiar to most people, in that they will have written and received letters. However, the style of letter writing and that of face-to face communication are very different. The text-based communication in groupware systems is acting as a speech substitute, and, thus, there are some problems adapting between the two media. There are four types of textual communication in current groupware: discrete – directed message as in email. There is no explicit connection between different messages, except in so far as the text of the message refers to a previous one. linear – participants’ messages are added in (usually temporal) order to the end of a single transcript. non-linear – when messages are linked to one another in a hypertext fashion. spatial – where messages are arranged on a two-dimensional surface.</p>
28	<p>Define Semantic dialogue. If the purpose of a dialog description is simply to communicate between designers, or as a ‘tool for thought’ early in design, it may be sufficient to annotate the formal dialog with the intended meaning of the actions, or to leave it to the reader to infer the semantics. However, if the dialog description is to serve as a formal specification, perhaps part of a contract, or for running as a prototype, there must be some way to describe formally the semantics of the dialog. The dialog notations we have seen more or less clearly describe the structure of the dialog. We must now move on to meaning. There are two aspects to the dialog semantics, inward toward the application, and outward toward the presentation.</p>

29	What is hypertext . A software system allowing extensive cross-referencing between related sections of text and associated graphic material.
30	What is multimedia? <i>Multimedia</i> is content that uses a combination of different content forms such as text, audio, images, animations, video and interactive content. <i>Multimedia</i> contrasts with media that use only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material.
31	Write down the four elements of GOMS? (APR/MAY 2018) A set of Goals, a set of Operators, a set of Methods for achieving the goals, and a set of Selections rules for choosing among competing methods for goals.
32	Define CUSTOM methodology? (APR/MAY 2018) CUSTOM model is a socio-technical methodology designed to be practical to use in small organizations. It is based on the User Skills and Task Match (USTM) approach, developed to allow design teams to understand and fully document user requirements.
33	What is Operators These are the lowest level of analysis. They are the basic actions that the user must perform in order to use the system.
34	What is a Methods There are several ways in which a goal can be split into sub goals.
35	Define Changing power structures The identification of stakeholders will uncover information transfer and power relationships that cut across the organizational structure
36	What is invisible worker The ability to work and collaborate at a distance can allow functional groups to be distributed over different sites. This can take the form of cross-functional neighbourhood centers, where workers from different departments do their jobs in electronic contact with their functional colleagues.
37	What is free rider problem It occurs when those who benefit from resources, goods, or Services do not pay for them, which results in an under-provision of those goods or services. The free rider problem is the question of how to limit free riding and its negative effects in these situations
38	Who is Stakeholders It can be defined as anyone who is affected by the success or failure of the system
39	What is Face-to-Face communication Face-to-face contact is the most primitive form of communication – primitive, that is, in terms of technology.
40	What is Hypertext system A hypertext system comprises a number of pages and a set of links that are used to connect pages together. The links can join any page to any other page, and there can be more than one link per page.

41	Define Animation Animation is the term given to the addition of motion to images, making them move, alter and change in time. A simple example of animation in an interface is in the form of a clock.
42	What is World-Wide Web It is (also called WWW or W3) It is a hypertext-based information system. Any word in a hypertext document can be specified as a pointer to a different hypertext document where more information pertaining to that word can be found.
43	What is Turn-taking Turn-taking is the process by which the roles of speaker and listener are exchanged. Back channels are often a crucial part of this process
44	What is Personal space It is also differ across cultures. Similar problem can occur in a video conference, ex. Wide focus, high level of zoom, camera position, different size of monitors. Even 'glass wall' makes precise distance less important, which could have a positive effect during cross-cultural meeting.
45	What is Consensus It is all stakeholders are included in the decision-making process.
46	What is Consultative It is the weakest form of participation where participants are asked for their opinions but are not decision makers.
47	Define Weltanschauung It is taken (from the German) meaning world view. This is how the system is perceived in a particular root definition.
48	What is Transformations The changes that are effected by the system. This is a critical part of the root definition as it leads to the activities that need to be included in the next stage
49	Define Open System Task Analysis (OSTA) OSTA is an alternative socio-technical approach, which attempts to describe what happens when a technical system is introduced into an organizational work environment.
50	Who are Tertiary stakeholders Tertiary stakeholders are people who do not fall into either of the first two categories but who are directly affected by the success or failure of the system (for example, a director whose profits increase or decrease depending on the success of the system).

PART-B

Q.No	Questions
1	Explain about Cognitive models & its classifications. <u>APR/MAY 2017</u>
2	Explain about Socio organization issues and stake holder Requirements.

3	Explain about Communication and Collaboration Models
4	Decide how the 'golden rules' and heuristic help interface designers take account of cognitive psychology? Illustrate your answer with the design of Microsoft office word. <u>NOV/DEC2017</u>
5	Explain the concept of key stake level model. <u>NOV/DEC2018</u>
6	Write note on dynamic web content <u>NOV/DEC2018</u>
7	Define a stakeholder? Analyse the types & appraise the stakeholder for an airline booking system? <u>APR/MAY 2017</u>
8	Explain the stages involved in CUSTOM methodology analysis? <u>APR/MAY 2017</u>
9	Consider the case of preparing a group presentation for a software project. Elaborate the stages in specifying and designing UI for the same. <u>NOV/DEC2017</u>
10	Explain some of the organizational issues that affect the acceptance and relevance of information and communication system in detail? <u>APR/MAY 2018</u>
11	Explain the problem space model and interacting cognitive subsystem in detail <u>APR/MAY 2018</u>
12	Explain the stages of open system task analysis (OSTA) <u>NOV/DEC2018</u>
13	What are the four types of textual communication? <u>NOV/DEC2018</u>
14	Explain about the organizational issues in detail
15	Explain about multimedia in detail

UNIT-4

MOBILE HCI

Mobile Ecosystem: Platforms, Application frameworks- Types of Mobile Applications: Widgets, Applications, Games- Mobile Information Architecture, Mobile 2.0, Mobile Design: Elements of Mobile Design, Tools.

PART-A

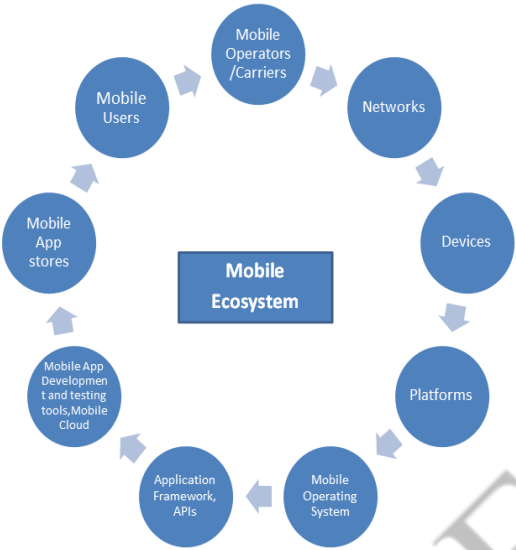
Q.No	Questions
1	<p>What is mobile Platforms?</p> <p>A mobile platform's primary duty is to provide access to the devices. To run software and services on each of these devices, you need a platform, or a core programming language in which all of your software is written. Like all software platforms, these are split into three categories: licensed, proprietary, and open source.</p>
2	<p>What are the licensed platforms?</p> <p>Java Micro Edition (Java ME) Binary Runtime Environment for Wireless (BREW) Windows Mobile LiMo</p>
3	<p>What are the Proprietarys?</p> <p>Palm</p> <p>Palm uses three different proprietary platforms. Their first and most recognizable is the Palm OS platform based on the C/C++ programming language; this was initially developed for their Palm Pilot line, but is now used in low-end smartphones such as the Centro line. As Palm moved into higher-end smartphones, they started using the Windows Mobile-based platform for devices like the Treo line. The most recent platform is called webOS, is based on the WebKit browser framework, and is used in the Prē line.</p> <p>BlackBerry</p> <p>Research in Motion maintains their own proprietary Java-based platform, used exclusively by their BlackBerry devices.</p> <p>iPhone</p> <p>Apple uses a proprietary version of Mac OS X as a platform for their iPhone and iPod touch line of devices, which is based on Unix.</p>

4	<p>What are the Operating Systems used in mobile?</p> <ul style="list-style-type: none"> • Symbian • Windows Mobile • Palm OS • Linux • Mac OS X • Android
5	<p>What is Cocoa Touch? <u>APR/MAY 2018</u></p> <p>Cocoa Touch is the API used to create native applications for the iPhone and iPod touch. Cocoa Touch applications must be submitted and certified by Apple before being included in the App Store. Once in the App Store, applications can be purchased, downloaded, and installed over the air or via a cable-connected computer.</p>
6	<p>What is Android SDK?</p> <p>The Android SDK allows developers to create native applications for any device that runs the Android platform. By using the Android SDK, developers can write applications in C/C++ or use a Java virtual machine included in the OS that allows the creation of applications with Java, which is more common in the mobile ecosystem. execution of the task using the system's facilities.</p>
7	<p>What is WebKit</p> <p>With Palm's introduction of webOS, a mobile platform based on WebKit, and given its predominance as a mobile browser included in mobile platforms like the iPhone, Android, and S60, and that the vast majority of mobile web apps are written specifically for WebKit, I believe we can now refer to WebKit as a mobile framework in its own right.</p>
8	<p>What is Web Runtimes (WRTs)</p> <p>WRTs are very interesting and provide access to some device functions using mobile web principles, I've found them to be more complex than just creating a simple mobile web app, as they force the developer to code within an SDK rather than just code a simple web app. And based on the number of mobile web apps written for the iPhone versus the number written for other, more full- featured WRTs.</p>
9	<p>What is Android SDK?</p> <p>The Android SDK allows developers to create native applications for any device that runs the Android platform. By using the Android SDK, developers can write applications in C/C++ or use a Java virtual machine included in the OS that allows the creation of applications with Java, which is more common in the mobile ecosystem.</p>

10	<p>What is Cocoa Touch?</p> <p>Cocoa Touch is the API used to create native applications for the iPhone and iPod touch. Cocoa Touch applications must be submitted and certified by Apple before being included in the App Store. Once in the App Store, applications can be purchased, downloaded, and installed over the air or via a cable-connected</p>
11	<p>What is Windows Mobile?</p> <p>Applications written using the Win32 API can be deployed across the majority of Windows Mobile-based devices. Like Java, Windows Mobile applications can be downloaded and installed over the air or loaded via a cable-connected computer.</p>
12	<p>What is BREW?</p> <p>Applications written in the BREW application framework can be deployed across the majority of BREW-based devices, with slightly less cross-device adaption than other frameworks. However BREW applications must go through a costly and timely certification process and can be distributed only through an operator.</p>
13	<p>What is Flash Lite</p> <p>Adobe Flash Lite is an application framework that uses the Flash Lite and Action Script frameworks to create vector-based applications. Flash Lite applications can be run within the Flash Lite Player, which is available in a handful of devices around the world. Flash Lite is a promising and powerful platform, but there has been some difficulty getting it on devices. A distribution service for applications written in Flash Lite is long overdue.</p>
14	<p>What are the set of rules for mobile?</p> <ol style="list-style-type: none"> 1: Forget What You Think You Know 2: Believe What You See, Not What You Read 3: Constraints Never Come First 4: Focus on Context, Goals, and Needs 5: You Can't Support Everything 6: Don't Convert, Create 7: Keep It Simple
15	<p>What are the the problems of mobile websites? <u>NOV/DEC2017</u></p> <ul style="list-style-type: none"> • They are easy to create, maintain, and publish. • They can use all the same tools and techniques you might already use for desktop sites. • Nearly all mobile devices can view mobile websites
16	<p>What are the conditions of mobile websites ?</p> <ul style="list-style-type: none"> • They can be difficult to support across multiple devices. • They offer users a limited experience. • Most mobile websites are simply desktop content reformatted for mobile devices. • They can load pages slowly, due to network latency

17	<p>What are the problems of SMS applications ?</p> <ul style="list-style-type: none"> • They work on any mobile device nearly instantaneously. • They're useful for sending timely alerts to the user. • They can be incorporated into any web or mobile application. • They can be simple to set up and manage.
18	<p>What are the cons of SMS applications ?</p> <ul style="list-style-type: none"> • They're limited to 160 characters. • They provide a limited text-based experience. • They can be very expensive.
19	<p>What are the types of Mobile Application?</p> <ul style="list-style-type: none"> • SMS • Mobile Websites • Mobile Web Widgets • Mobile Web Applications • Native Applications • Games • Mobile Application Media Matrix • Application Context • Utility Context • Locale Context • Informative Applications
20	<p>What are the types of mobile architecture?</p> <p>Information architecture The organization of data within an informational space. In other words, how the user will get to information or perform tasks within a website or application.</p> <p>Interaction design The design of how the user can participate with the information present, either in a direct or indirect way, meaning how the user will interact with the website of application to create a more meaningful experience and accomplish her goals.</p> <p>Information design The visual layout of information or how the user will assess meaning and direction given the information presented to him.</p> <p>Navigation design The words used to describe information spaces; the labels or triggers used to tell the users what something is and to establish the expectation of what they will find.</p> <p>Interface design The design of the visual paradigms used to create action or understanding.</p>

21	What is wireframe? Wireframes are a way to lay out information on the page, also referred to as information design. wireframes show how the user will directly interact with it. Wireframes are like the peanut butter to the site map jelly in our information architecture sandwich
22	What are the types of prototype? <ul style="list-style-type: none"> ● Paper prototypes ● Context prototype ● HTML prototypes
23	What are the Elements of Mobile Design? <ul style="list-style-type: none"> ○ Context ○ Message ○ Look and Feel ○ Layout ○ Color ○ Typography ○ Graphics ○ Mobile Design Tools
24	What are the rules for readability? <ul style="list-style-type: none"> ● Use a high-contrast typeface ● Use the right typeface ● Provide decent leading (rhymes with “heading”) or line spacing ● Leave space on the right and left of each line; don’t crowd the screen ● Generously utilize headings
25	What is Iconography ? Iconography is useful to communicate ideas and actions to users in a constrained visual space.
26	What are the principles principles of Web 2.0? <ul style="list-style-type: none"> ● The Web as a platform ● Harnessing collective intelligence ● Data is the next Intel inside ● End of the software release cycle ● Lightweight programming models ● Software above the level of a single device ● Rich user experiences

27	<p>Label the layers of mobile ecosystem <u>NOV /DEC 2017</u></p> 
28	<p>What are the characteristics of a Class F mobile browser ?</p> <ul style="list-style-type: none"> • No (or very unreliable) CSS support • Poor table support or none at all • Basic forms: text field, select option, submit button • May not be able to support input mask on fields • No JavaScript support
29	<p>List out the examples of mobile design tools? <u>APR/MAY 2017</u></p> <ul style="list-style-type: none"> ○ Photoshop ○ Net beans ○ Flash ○ Interface Builder ○ HTML
30	<p>Identify the categories of mobile platforms? <u>APR/MAY 2017</u></p> <ol style="list-style-type: none"> 1. Licensed 2. Proprietary 3. Open source
31	<p>What are the importance of mobile applications <u>APR/MAY 2018</u></p> <ul style="list-style-type: none"> ○ Massive chance to grow E-business ○ Get official interaction with customers ○ Easily meets the targeted customer ○ free advertisement for your job ○ Makes you more comfortable
32	<p>What is LiMo</p> <p>LiMo is a Linux-based mobile platform created by the LiMo Foundation. Although Linux is open source, LiMo is a licensed mobile platform used for mobile devices. LiMo includes SDKs for creating Java, native, or mobile web applications using the WebKit browser framework.</p>

33	What is a iPhone Apple uses a proprietary version of Mac OS X as a platform for their iPhone and iPod touch line of devices, which is based on Unix.
34	Define BREW Applications written in the BREW application framework can be deployed across the majority of BREW-based devices, with slightly less cross-device adaption than other frameworks. However BREW applications must go through a costly and timely certification process and can be distributed only through an operator.
35	What is Cocoa Touch Cocoa Touch is the API used to create native applications for the iPhone and iPod touch. Cocoa Touch applications must be submitted and certified by Apple before being included in the App Store. Once in the App Store, applications can be purchased, downloaded, and installed over the air or via a cable-connected computer
36	What is a Web The Web is the only application framework that works across virtually all devices and all platforms. A
37	What is Mobile Websites A Mobile Website is a website designed specifically for mobile devices, not to be confused with viewing a site made for desktop browsers on a mobile browser.
38	Define Mobile Web Widgets A component of a user interface that operates in a particular way. A portable chunk of code that can be installed and executed within any separate HTML based web page by an end user without requiring additional compilation
39	What is Native Applications Native applications, which is actually a misnomer because a mobile web app or mobile web widget can target the native features of the device as well. These applications actually should be called “platform applications,” as they have to be developed and compiled for each mobile platform.
40	Define Games The most popular of all media available to mobile devices. Technically games are really just native applications that use the similar platform SDKs to create immersive experiences
41	What is Site Maps The first deliverable we use to define mobile information architecture is the site map. Site maps are a classic information architecture deliverable. They visually represent the relationship of content to other content and provide a map for how the user will travel through the informational space.
42	Define Context The context is core to the mobile experience. As the designer, it is your job to make sure that the user can figure out how to address context using your app
43	What is Look and Feel The concept of “look and feel” is an odd one, being subjective and hard to define. Typically, look and feel is used to describe appearance, as in “I want a clean look and feel” or “I want a usable look and feel.”

44	Define Layout Layout is an important design element, because it is how the user will visually process the page, but the structural and visual components of layout often get merged together, creating confusion and making your design more difficult to produce
45	What is a Color palettes? <u>NOV/DEC2018</u> Defining color palettes can be useful for maintaining a consistent use of color in your mobile design. Color palettes typically consist of a predefined number of colors to use throughout the design.
46	Define Adaptive An adaptive palette is one in which you leverage the most common colors present in a supporting graphic or image.
47	What is Font replacement The ability to use typefaces that are not already loaded on the device varies from model to model and your chosen platform. Some device APIs will allow you to load a typeface into your native application.
48	What is Iconography The most common form of graphics used in mobile design is icons. Iconography is useful to communicate ideas and actions to users in a constrained visual space. The challenge is making sure that the meaning of the icon is clear to the user.
49	What is Mobile Design Tools Mobile design requires understanding the design elements and specific tools. The closest thing to a common design tool is Adobe Photoshop, though each framework has a different method of implementing the design into the application.
50	Why they say Generously utilize headings? Break the content up in the screen, using text-based headings to indicate to the user what is to come. Using different typefaces, color, and emphasis in headings can also help create a readable page.
51	Give some examples of world largest mobile operators? <ul style="list-style-type: none"> ● Airtel ● Vodafone ● Reliance jio ● BSNL

PART-B

Q.No	Questions
1	Explain about Mobile Ecosystem and its types .

2	Explain the types of Mobile applications with example..
3	Elaborate the Mobile Information Architecture. Page no 635
4	Elaborate the process of Mobile 2.0 in detail.
5	Explain and list the Elements of Mobile Interface Design in detail. <u>APR/MAY2017, NOV/DEC2017, APR/MAY2018</u>
6	Explain the process of platform application frameworks
7.	Discuss various elements of mobile design with step by step method to explain how to design a registration page for movieticket booking. <u>APR/MAY2018</u>
8	Explain about layers of mobile eco system .
9	Explain about application Framework in mobile eco system.
10	Discuss about the mobile applications medium types. <u>NOV/DEC2018</u>
11	Explain about mobile web applications
12	Explain about mobile design elements
13	Explain different layouts for different devices in detail
14	Explain the various mobile design tools and interface kits <u>NOV/DEC 2018</u>
15	Explain the role of major mobile OS <u>NOV/DEC 2018</u>

UNIT-5

WEB INTERFACE DESIGN

Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow. Case Studies

PART-A

Q.No	Questions
1	What is drag and drop? Just grab an object and drop it somewhere.
2	What is auto complete pattern? <u>APR/MAY 2017</u> Auto-complete transforms a recall problem into one of recognition. As you type into the search box, it tries to predict your query based on the characters you have entered. Like a human interpreter mediating between two people speaking different languages, auto-complete facilitates the dialogue between the user and the search application.
3	What are the page elements available to include drop? <ul style="list-style-type: none">• Page (e.g., static messaging on the page)• Cursor• Tool Tip• Drag Object (or some portion of the drag object, e.g., title area of a module)• Drag Object's Parent Container• Drop Target Apple uses a proprietary version of Mac OS X as a platform for their iPhone and iPod touch line of devices, which is based on Unix.
4	What are the Purpose of Drag and Drop? <u>APR/MAY 2018</u> <ul style="list-style-type: none">• Drag and Drop Module Rearranging modules on a page.• Drag and Drop List Rearranging lists.• Drag and Drop Object Changing relationships between objects.• Drag and Drop Action Invoking actions on a dropped object.• Drag and Drop Collection Maintaining collections through drag and drop

5	What is Drag and Drop Module? One of the most useful purposes of drag and drop is to allow the user to directly place objects where she wants them on the page. A typical pattern is Drag and Drop Modules on a page.
6	What are two common approaches to targeting a drop? <ul style="list-style-type: none"> • Placeholder target • Insertion target
7	What is Boundary-based placement.? Placeholder targeting drag the module in its original size, targeting is determined by the boundaries of the dragged object and the boundaries of the dragged-over object. The mouse position is usually ignored because modules are only draggable in the title (a small region).
8	What is Insertion target? Placeholder positioning is a common approach, but it is not the only way to indicate drop targeting. An alternate approach is to keep the page as stable as possible and only move around an insertion target (usually an insertion bar).
9	What are the types of overlays? <u>APR/MAY 2017</u> <ul style="list-style-type: none"> ○ Dialog overlay ○ Detail overlay ○ Input overlay
10	What are the two ways to move objects around that supported by drag and drop? <ul style="list-style-type: none"> • Edit the row number and then press the “Update DVD Queue” button. • Click the “Move to Top” icon to pop a movie to the top.
11	What is Hinting at drag and drop? When the user clicks the “Move to Top” button, Netflix animates the movie as it moves up. But first, the movie is jerked downward slightly and then spring-loaded to the top.
12	What is drag lens? A drag lens provides a view into a different part of the list that can serve as a shortcut target.
13	What is Drag and Drop Object? <ul style="list-style-type: none"> ➤ Drag and Drop Object is used to rearrange members of the organization. ➤ Normal display state ➤ Invitation to drag ➤ Dragging ➤ Dropped
14	When will a drop action be invalid ? <ul style="list-style-type: none"> • The dragged object’s icon becomes a red invalid sign. • If over an invalid folder, the folder is highlighted as well

15	When will a drop be valid? <ul style="list-style-type: none"> • The dragged object's icon changes to a green checkmark. • The drop target highlights
16	Define A good rule of thumb on drag initiation. Your application should provide drag feedback as soon as the user drags an item at least three pixels. If a user holds the mouse button down on an object or selected text, it should become draggable immediately and stay draggable as long as the mouse remains down
17	Define non-obvious Requires some additional instructions to "Drag the DVDs into the boxes below" in order for the user to know how to rate the movies
18	Define the term 'Too much effort'. Requires too much user effort for a simple task. The user needs to employ mouse gymnastics to simply rate a movie. Drag and drop involves these discrete steps: target, then drag, then target, and then drop. The user has to carefully pick the movie, drag it to the right bucket, and release.
19	What is Drag and Drop Collection? A variation on dragging objects is collecting objects for purchase, bookmarking, or saving into a temporary area. This type of interaction is called Drag and Drop Collection.
20	List out some of the best practices to keep in mind during the design of input overlay? <u>NOV/DEC 2017</u> <ul style="list-style-type: none"> • Clear focus • Display Vs editing • Anti-pattern
21	What are the types of selection patterns? <ul style="list-style-type: none"> ▪ Toggle Selection Checkbox or control-based selection. ▪ Collected Selection Selection that spans multiple pages. ▪ Object Selection Direct object selection. ▪ Hybrid Selection
22	Define toggle selection. The way to select an individual mail message is through the row's checkbox. Clicking on the row itself does not select the message. We call this pattern of selection Toggle Selection since toggle-style controls are typically used for selecting items.

23	What are the attributes of toggle selection? <ul style="list-style-type: none"> • Clear targeting, with no ambiguity about how to select the item or deselect it. • Straightforward discontinuous selection, and no need to know about Shift or Controlkey ways to extend a selection. Just click the checkboxes in any order, either in a continuous or discontinuous manner. • Clear indication of what has been selected
24	Define Collected Selection. Collected Selection is a pattern for keeping track of selection as it spans multiple pages.
25	Define object selection. APR/MAY 2018 Object Selection, is when selection is made directly on objects within the interface.
26	Define Fitts's Law. Fitts's Law is an ergonomic principle that ties the size of a target and its contextual proximity to ease of use. Bruce Tognazzini restates it simply as: "The time to acquire a target is a function of the distance to and size of the target"
27	Define Contextual Tools. Contextual Tools are the Web's version of the desktop's right-click menus. Instead of having to right-click to reveal a menu, we can reveal tools in context with the content
28	What are the methods of contextual tools. <ul style="list-style-type: none"> ➤ Always-Visible Tools Place Contextual Tools directly in the content. ➤ Hover-Reveal Tools Show Contextual Tools on mouse hover. ➤ Toggle-Reveal Tools A master switch to toggle on/off Contextual Tools for the page. ➤ Multi-Level Tools Progressively reveal actions based on user interaction. ➤ Secondary Menus Show a secondary menu (usually by right-clicking on an object).
29	Define Discoverability Discoverability is a primary reason to choose Always-Visible Tools. On the flip side, it can lead to more visual clutter. In the case of Digg and Netflix, there is a good deal of visual space given to each item (story, movie).

30	<p>Compare modal & non-modal overlays? <u>NOV/DEC2017</u></p> <p>Modal - When a window is modal it remains active and focused until the user has finished with it and dismisses it. While it is active no other windows of the same application can be activated. A modal window is therefore normally a child window. The user needs to interact with it before control can be returned to the parent application. In effect the parent application is locked and nothing proceeds until the modal window is closed.</p> <p>Non-Modal</p> <p>So a non-modal window is the opposite. While it is active you can still activate other windows. The user can switch between windows of the same application. The window being active does not prevent the rest of the application from continuing</p>
31	<p>What is Placeholder target</p> <p>Net vibes uses a placeholder (hole with dashed outline) as the drop target. The hole serves as a placeholder and always marks the spot that the dragged module will and when dropped</p>
32	<p>What is Insertion target</p> <p>While the module is dragged, the page remains stable. No modules move around. Instead an insertion bar marks where the module will be placed when dropped.</p>
33	<p>How to do Toggle Selection</p> <p>The way to select an individual mail message is through the row's checkbox. Clicking on the row itself does not select the message.</p>
34	<p>What is Collected Selection</p> <p>Toggle Selection is great for showing a list of items on a single page. Collected Selection is a pattern for keeping track of selection as it spans multiple pages.</p>
35	<p>What is Object Selection</p> <p>Object Selection, is when selection is made directly on objects within the interface.</p>
36	<p>What is Hybrid Selection</p> <p>Hybrid Selection brings with it the best of both worlds. You can use the checkbox selection model as well as normal row selection</p>
37	<p>What is Discoverability</p> <p>Gmail provides a single Always-Visible Tool in its list of messages—the star rating—for flagging emails). Simply clicking the star flags the message as important. The un starred state is rendered in a visually light manner, which minimizes the visual noise in the list.</p>
38	<p>What is Hover and Cover</p> <p>Hover and Cover is a common anti-pattern that occurs when exposing an overlay on hover and hiding important context or further navigation.</p>
39	<p>What is Toggle-Reveal Tools</p> <p>Toggle a tool mode for an area or page when the actions are not the main flow, but you want to provide the most direct way to act on these objects when the need arises.</p>

40	Define Soft mode Generally, it is a good thing to avoid specific modes in an interface. However, if a mode is soft it is usually acceptable. By “soft” we mean the user is not trapped in the mode.
41	What is Muttons Another variation on Multi-Level Tools is the “mutton” (menu + button = mutton).Muttons are useful when there are multiple actions and we want one of the actions to be the default. Yahoo! Mail uses a mutton for its “Reply” button
42	What is Secondary Menu Desktop applications have provided Contextual Tools for a long time in the form of Secondary Menus. These menus have been rare on the Web. Google Maps uses a secondary menu that is activated by a right-click on a route.
43	What is Overlays Instead of going to a new page, a mini-page can be displayed in a lightweight layer over the page. Overlays are really just lightweight pop ups. We use the term lightweight to make a clear distinction between it and the normal idea of a browser pop up.
44	List Three specific types of overlays Dialog Overlays Detail Overlays Input Overlays
45	What is Modality Overlays can be modal or non-modal. A modal overlay requires the user to interact with it before she can return to the application. Sometimes overlays are non-modal.
46	Define Detail Overlay The Detail Overlay allows an overlay to present additional information when the user clicks or hovers over a link or section of content.
47	What is Input Overlay Input Overlay is a lightweight overlay that brings additional input information for each field tabbed into.
48	Define Parallel content The Yahoo! Autos Car Finder tool uses an accordion-style interaction for search filters that allows more than one pane to be open at a time. This choice makes sense because the decisions needed for one detail pane may be affected by the details of another pane.
49	What is Virtual Scrolling Every implementation of websites pagination was the key way to get to additional content. This process led to long delays in loading the page.
50	What is Inline Paging Switching the content in and leaving the rest of the page stable, we can create an Inline Paging experience
51	What do you mean by inlay? <u>NOV/DEC 2018</u> An inlay is a design or pattern on an object which is made by putting materials such as wood, gold, or silver into the surface of the object.

52	<p>List any four principles of designing rich web interface? <u>NOV/DEC 2018</u></p> <p>The structure principle</p> <p>The simplicity principle</p> <p>The tolerance principle</p> <p>The feedback principle</p>
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PART-B

Q.No	Questions
1	Explain various drag and drop methods in detail with examples.
2	Categorize the principles for designing rich web interface <u>APR/MAY 2017</u> .
3	Explain various contextual tools in detail with examples. How are they used in design of rich web UI? Illustrate and compare with example? <u>NOV/DEC2017, APR/MAY 2018, NOV/DEC2018</u>
4	Explain types of overlays in detail with examples. <u>NOV/DEC2018</u>
5	Explain types of inlays in detail with examples.
6	Explain the concept of virtual paging. How are virtual pages used in the design of rich web UI? Illustrate and compare with example? <u>NOV/DEC2017</u>
7	Explain the concept of dynamic invitation in detail.
8	Design a web interface for a “library mgmt system”. State the functional requirements you are considering? <u>APR/MAY 2017</u>
9	Write in brief the process of web interface design <u>APR/MAY 2018, NOV/DEC2018</u>

10	<p>Explain the following contextual tools</p> <ol style="list-style-type: none"> 1. Always visible tool 2. Hover reveal tools 3. Toogle reveal tools 4. Multi level tools 5. Secondary menu
11	Explain about Virtual Panning and Zoomable User Interface
12	Discuss about Configurator Process, Overlay Process and Static single page process
13	Explain about Interactive Single-Page Process
14	Explain in detail about Virtual Panning
15	Explain about various types of selection patterns