HUMAN COMPUTER INTERACTION (CS814PE)

COURSE FILE

I. COURSE OVERVIEW:

A Human Computer Interaction is one of the most exciting and rapidly growing computer fields. It is also an extremely effective medium for communication between man and computer. The human can understand information content of a displayed diagram or perspective view much faster than it can understand a table of numbers. Knowing this thing, there is a lot of development in hardware and software required to generate images, and nowadays the cost of such hardware and software is also dropping rapidly. Due to this the interactive computer Graphics is becoming available to more and more people. To help students in learning basic algorithms and techniques used in Computer Organization.

II. PREREQUISITE(S):

The knowledge of following subjects is essential to understand the subject:

1. The program requires strong technical and social science skills.
2. Significant experience using computers and GUI based applications, and ability to create simple web pages.
3. Students are also expected to have a solid background in computer programming.

These competencies may be demonstrated by previous course work, technical certifications, or comparable work experience

III. COURSE OBJECTIVES:

Students should be able to :

Demonstrate an understanding of guidelines, principles, and theories influencing human computer interaction. Recognize how a computer system may be modified to include human diversity. . Select an effective style for a specific application. Design mock ups and carry out user and expert evaluation of interfaces. Carry out the steps of experimental design, usability and experimental testing, and evaluation of human computer interaction systems. Use the information sources available, and be aware of the methodologies and technologies supporting advances in HCI.

IV. COURSE OUTCOMES:

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
CO1	**Understand** to express syntax and semantics in formal notation.	L2: Understand
CO2	**Employ** to apply suitable programming paradigm for the application.	L3: Apply
CO3	**Design** to program in different language paradigms and evaluate their relative benefits	L6: Create
CO4	**Understand** the programming paradigms of modern programming languages.	L2: Understand
CO5	**Understand** the concepts of ADT and OOP.	L2: Understand
CO6	**Knowledge** to compare the features of various programming	L1: Remember

| | | | languages. | | |

V. HOW PROGRAM OUTCOMES ARE ASSESSED:

	Program Outcomes (POs)	Level	Proficiency assessed by
PO1	**gineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	3	Assignments
PO2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	3	Assignments
PO3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	2	Open ended experiments /
PO4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	2	Open ended experiments /
PO5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	1	Mini Project
PO6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	-	--
PO7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	-	--
PO8	**Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	-	--
PO9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	-	--
PO10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to	1	Seminars / Term Paper

Program Outcomes (POs)		Level	Proficiency assessed by
	comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.		
PO11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	**-**	--
PO12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	**2**	Competitive Examinations

VI. HOW PROGRAM SPECIFIC OUTCOMES ARE ASSESSED:

Program Specific Outcomes (PSOs)		Level	Proficiency assessed by
PSO1	Software Development and Research Ability: Ability to understand the structure and development methodologies of software systems. Possess professional skills and knowledge of software design process. Familiarity and practical competence with a broad range of programming language and open source platforms. Use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations.	3	Lectures, Assignments
PSO2	Foundation of mathematical concepts: Ability to apply the acquired knowledge of basic skills, principles of computing, mathematical foundations, algorithmic principles, modeling and design of computer- based systems in solving real world engineering Problems.	2	Mini Projects / Experiments
PSO3	Successful Career: Ability to update knowledge continuously in the tools like Rational Rose, MATLAB, Argo UML, R Language and technologies like Storage, Computing, Communication to meet the industry requirements in creating innovative career paths for immediate employment and for higher studies.	2	Experiments / Tools

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High) - : None

VII. SYLLABUS:

UNIT – I :

Introduction: Importance of user Interface – definition, importance of good design. Benefits of good design. A brief history of Screen design. The graphical user interface – popularity of graphics, the concept of direct manipulation, graphical system, Characteristics, Web user – Interface popularity, characteristics- Principles of user interface.

UNIT—II:

Design process – Human interaction with computers, importance of human characteristics human consideration, Human interaction speeds, and understanding business junctions.

Screen Designing : Design goals – Screen planning and purpose, organizing screen elements, ordering of screen data and content – screen navigation and flow – Visually pleasing composition – amount of information – focus and emphasis – presentation information simply and meaningfully – information retrieval on web – statistical graphics – Technological consideration in interface design.

UNIT- III:

Windows – New and Navigation schemes selection of window, selection of devices based and screen based controls. Components – text and messages, Icons and increases – Multimedia, colors, uses problems, choosing colors.

UNIT- IV:

HCI in the software process, The software life cycle Usability engineering Iterative design and prototyping Design Focus: Prototyping in practice Design rationale Design rules Principles to support usability Standards Golden rules and heuristics HCI patterns Evaluation techniques, Goals of evaluation, Evaluation through expert analysis, Evaluation through user participation, Choosing an evaluation method. Universal design, Universal design principles Multi-modal interaction

UNIT V:

Cognitive models Goal and task hierarchies Design Focus: GOMS saves money Linguistic models The challenge of display-based systems Physical and device models Cognitive architectures Ubiquitous computing and augmented realities Ubiquitous computing applications research Design Focus: Ambient Wood –augmenting the physical Virtual and augmented reality Design Focus: Shared experience Design Focus: Applications of augmented reality Information and data visualization Design Focus: Getting the size right.

GATE SYLLABUS: NA

IES SYLLABUS: NA

VII.COURSE PLAN:

Lecture No.	Unit No.	Topics to be covered	Link for PPT	Link for PDF	Link for Small Projects/ Numericals(if any)	Course learning outcomes	Teaching Methodology	Reference
1	I	**UNIT-1** : Importance of user Interface	https://drive.google.com/file/d/1Yiq_6tvDCHWA21Izg3O7gbTV5WMJlBZF/view?usp=sharing	https://drive.google.com/file/d/1O3Bu06r2UzMlFea72SwFy58zD6uY9L_H/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Remember	Chalk ,Talk, PPT	**T1**
2		Definition			**Small Projects/ Numericals(if any) Link**	Remember	Chalk ,Talk, PPT	**T1**
3		Importance of good design			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
4		Benefits of good design.			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
5		A brief history of Screen design	https://drive.google.com/file/d/1DzjnPqn5cptWD7D2z4knYG8u5fbZvfEd/view?usp=sharing	https://drive.google.com/file/d/1Hof9jEVjnqrZbC6V4InPoHZ1Do9qL64P/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
6		The graphical user interface - popularity of graphics			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
7		the concept of direct manipulation			**Small Projects/ Numericals(if any) Link**	Understanding	Chalk ,Talk, PPT	**T1**
8		graphical system, , Characteristics	https://drive.google.com/file/d/12Xr4rErrJHnp7xIL2ErknbwDZgW0B71G/view?usp=sharing	https://drive.google.com/file/d/1GhSNueI1qBo2FCNgStmYSjw3vrl2vI0T/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
9		Web user – Interface popularity			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
10		Characteristics- Principles of user interface.			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
11		Mock Test 1						
12		**Revision**						

						Small Projects/ Numericals(if any) Link	Learning		Chalk ,Talk, PPT	T1

#	Unit	Topic	Link 1	Link 2	Small Projects/Numericals	Cognitive	Method	T
13	II	**UNIT-2 :** Design process – Human interaction with computers	https://drive.google.com/file/d/1QYSSE5NVeh_Z9WBe2gIcd0ZO8-PmLJ1t/view?usp=sharing	https://drive.google.com/file/d/1OU88pRDhttuXDNAmBJMI_RwQCafS-h1S/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T1
14		Human interaction speeds			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T1
15		understanding business junctions,**Bridge Class 1**	https://drive.google.com/file/d/1l73mY2EYcfBor5FpMpKGquqnePjzEIzV/view?	https://drive.google.com/file/d/1W3rKnXq78zyhSHDBXOrb	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T1
16		Screen Designing:- Design goals	usp=sharing	hzyN-Cu8VOrx/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T1
17		Screen planning and purpose			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T1
18		organizing screen elements, ordering of screen data and content	https://drive.google.com/file/d/1GRj8Dtbyyit8tgJ-CG-aqfSj70r_k4Ic/view?usp=sharing	https://drive.google.com/file/d/1W3rKnXq78zyhSHDBXOrbhzyN-Cu8VOrx/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T1
19		screen navigation and flow – Visually pleasing composition,**Bridge Class 2**			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T1
20		amount of information – focus and emphasis			**Small Projects/ Numericals(if any) Link**	Understanding	Chalk ,Talk, PPT	T1
21		presentation information simply and meaningfully – information retrieval on web	https://drive.google.com/file/d/1N6PSJYLQHeuJ-dY8pYuqM6R8	https://drive.google.com/file/d/1yFC3UfEvp8VtFzfQQTCizliCUVNsXY-	**Small Projects/ Numericals(if any) Link**	Analyze	Chalk ,Talk, PPT	T1

22		statistical graphics – Technological consideration in interface design	mrbn3x77/view?usp=sharing	i/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Analyze	Chalk ,Talk, PPT	**T1**
23					**Revision/Bridge Class 3**			
24	III	**UNIT-3 :** Windows	https://drive.google.com/file/d/1QohPrdMxqYaxQFKcobHPfdUc3Rrmo1fV/view?usp=sharing	https://drive.google.com/file/d/1TbenldMIUcezOoGZaQYtGr5OY4rACB_4/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
25		New and Navigation schemes selection of window			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
26		Selection of devices based and screen based controls.			**Small Projects/ Numericals(if any) Link**	Understanding	Chalk ,Talk, PPT	**T1**
27		text and messages,**Bridge Class 4**	https://drive.google.com/file/d/1jKtI78urzJR8RdfW2-BFR8ZgrL0AnvgV/view?usp=sharing	https://drive.google.com/file/d/1-En4X2Ia1Pjdp4DCCtGyBGiOSiB7E1WZ/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T1**
28		Components			**Small Projects/ Numericals(if any) Link**	Understanding	Chalk ,Talk, PPT	**T1**
29		Icons and increases			**Small Projects/ Numericals(if any) Link**	Analyze	Chalk ,Talk, PPT	**T1**
30					**Revision**			
31					**Revision/Bridge Class 5**			
32					**I Mid Examinations**			
33		**UNIT-4 :** HCI in the software process			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T2**
34		Iterative design and prototyping		https://drive.	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T2**

35		Design Focus and Practices,**Bridge Class 6**	https://drive.google.com/file/d/1WsR0JcubHu4hP_-GlTxbplFI5IV9byON/view?usp=sharing	google.com/file/d/1NMYUQbyv93qjssrjx4J8UFh_3j3XZF5o/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T2
36	I V	Principles to support usability Standards Golden rules and heuristics			**Small Projects/ Numericals(if any) Link**	Understanding	Chalk ,Talk, PPT	T2
37		*HCI patterns Evaluation techniques, Goals of evaluation*			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T2
38		Choosing an evaluation method. Universal design principles, **Bridge Class 7**	https://drive.google.com/file/d/1WFfLkHV2pnFcldE3WB2sNAwmAgWLBsNn/view?usp=sharing	https://drive.google.com/file/d/1R9pgyRgHP4Aqt0QzuTjb8M2uenmT3ojf/view?usp=sharing	**Small Projects/ Numericals(if any) Link**	Evaluate	Chalk ,Talk, PPT	T2
39		Multi-modal interaction Software tools			**Small Projects/ Numericals(if any) Link**	Evaluate	Chalk ,Talk, PPT	T2
40		Specification methods, interface – Building Tools			**Small Projects/ Numericals(if any) Link**	Evaluate	Chalk ,Talk, PPT	T2
41		Building Tools			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	T2
42		Building Tools,**Bridge Class 8**			**Small Projects/ Numericals(if any) Link**	Learning	Chalk ,Talk, PPT	**T2**
43		**Mock Test 2**						

44		Revision						
45		UNIT-5 : Cognitive models Goal and task hierarchies Design Focus	https://drive.google.com/file/d/1D1jnB15XZ9yXQJoUw2_wn98c70VffFcR/view?usp=sharing	https://drive.google.com/file/d/1rpF1iZ9P9hr5aUAze0gTBKm1e2f_HG0u/view?usp=sharing	Small Projects/ Numericals(if any) Link	Learning	Chalk ,Talk, PPT	T2
46		Physical and device models Cognitive architectures			Small Projects/ Numericals(if any) Link	Understanding	Chalk ,Talk, PPT	T2
47	V	Ubiquitous computing and augmented realities			Small Projects/ Numericals(if any) Link	Understanding	Chalk ,Talk, PPT	T2
48		Applications research Design Focus,**Bridge Class 9**			Small Projects/ Numericals(if any) Link	Understanding	Chalk ,Talk, PPT	T2
49		Augmented reality Design Focus			Small Projects/ Numericals(if any) Link	Understanding	Chalk ,Talk, PPT	T2
50		Pointing devices	https://drive.google.com/file/d/1rdSfkD5dMfIkGo-gT3d-htUlqmq8TGXZ/view?usp=sharing	https://drive.google.com/file/d/12At6FGxYVohrS5FE2NQo2mJ_sBzX_glR/view?usp=sharing	Small Projects/ Numericals(if any) Link	Understanding	Chalk ,Talk, PPT	T2
51		Shared experience Design Focus,**Bridge Class 10**			Small Projects/ Numericals(if any) Link	Understanding	Chalk ,Talk, PPT	T2
52		Data visualization Design Focus			Small Projects/ Numericals(if any) Link	Understanding	Chalk ,Talk, PPT	T2
53		*Speech recognition digitization and generation*			Small Projects/ Numericals(if any) Link	Analyze	Chalk ,Talk, PPT	T2

54	Image and video displays			Small Projects/ Numericals(if any) Link	Analyze	Chalk ,Talk, PPT	T2
55	*Drivers*			Small Projects/ Numericals(if any) Link	Analyze	Chalk ,Talk, PPT	T2
56	Revision/**Bridge Class 11**						
57	Revision						
58	**II Mid Examinations**						

SUGGESTED BOOKS:

TEXT BOOK:

1. The essential guide to user interface design, Wilbert O Galitz, Wiley DreamTech.Units 1,2,3
2. Human – Computer Interaction. Alan Dix, Janet Fincay, Gre Goryd, Abowd, Russell Bealg, Pearson Education Units 4,5.

REFERENCES:

1. Human – Computer Interaction. D. R. Olsen, Cengage Learning
2. Interaction Design Prece, Rogers, Sharps. Wiley Dreamtech
3. User Interface Design, SorenLauesen , Pearson Education.

VII.   MAPPING COURSE OUTCOMES LEADING TO THE ACHIEVEMENT OFPROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

Course Outcomes	Program Outcomes (PO)												Program Specific Outcomes (PSO)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	1	-	-	-	-	-	-	1	-	1	2	2	2
CO2	3	3	2	2	1	-	-	-	-	1	-	2	3	2	2
CO3	3	3	3	1	1	-	-	-	-	1	-	2	3	1	1
CO4	3	3	2	2	1	-	-	-	-	1	-	2	3	2	2
CO5	3	3	2	2	1	-	-	-	-	1	-	2	3	2	2
CO6	2	2	-	-	-	-	-	-	-	1	-	1	2	1	1

AVG	2.6 7	2.6 7	2.0 0	1.7 0	1. 5	-	-	-	-	1.	-	1.67	2.67	1.67	1.67

VIII.   QUESTION BANK: (JNTUH)
DESCRIPTIVE QUESTIONS: (WITH BLOOMS PHRASES)
UNIT I
Short Answer Questions-

QUESTIONS	Blooms taxonomy level	Course outcomes
1. What is User Interface?	Understand	1
2. Discuss the chronological history of graphical user interface	Understand	1
3. Discuss in detail the importance of the user interface design	Knowledge	1
4. What is the importance of Good design?	Knowledge	1
5. Discuss the impact of inefficient screen design on processing time.	Knowledge	1

Long Answer Questions-

QUESTIONS	Blooms taxonomy level	Course outcomes
1. Discuss the impact of inefficient screen design	Create	1
2. Discuss in detail the importance of the user interface for success of a software	Analyze	1
3. Explain in details the benefits of Good Design	Understanding	1
4. Discuss the chronological history of internet	Create	1
5. Discuss the chronological history of GUI	Analyze	1

UNIT – II
Short answer questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1. What are the various difficulties with poor design?	Understand	1
2. Discuss any three psychological and physical user responses to poor design.	Understand	1
3. Explain any 5 important Human characteristics in Design	Knowledge	1
4. Discuss about users knowledge and	Knowledge	1

QUESTIONS	Blooms taxonomy level	Course outcomes
experience in the design of business system		
5. Explain about human interaction speed	Analyze	1

Long answer questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1. Discuss about the users psychological characteristics in the design of a system	Create	1
2. Discuss about the users physical characteristics in the design of a system	Analyze	1
3. What is the importance of user's tasks and needs important in design of a system	Understanding	1
4. Explain briefly about the important human characteristics in design of a system	Create	1
5. Explain about Human Interaction Speed	Analyze	1

UNIT – III
Short answer questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1. Explain in detail any three contents of menu.	Understand	1
2. What are the various functions of menu	Understand	1
3. Discuss different types of menus	Knowledge	1
4. Discuss the goals of website navigation	Knowledge	1
5. How many types of windows are available? Explain briefly	Knowledge	1

Long answer questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1. What are the contents of Menus? Explain in detail	Create	1
2. Explain the functions of Menus	Analyze	1
3. Explain different structures of Menus	Understanding	1
4. Discuss various kinds of Graphical Menus	Create	1
5. What are the various Components of a Window	Analyze	1

UNIT – IV

Short answer questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1. Discuss about Backus normal form/Describe grammars specification method.	Understand	1
2. Explain briefly about specification methods	Understand	1
3. What are menu-selection and dialog box trees	Knowledge	1
4. What are the advantages of menu-selection and dialog box trees	Knowledge	1
5. Illustrate the following: (a) State charts (b) Grammars	Analyze	1

Long answer questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1. What are menu- selection and dialog box trees? And write it advantages.	Create	1
2. Explain about the Features of user-interface building tools	Analyze	1
3. Discuss various Design tools for creating user interface	Understanding	1
4. Discuss various Software Engineering tools for creating user interface	Create	1
5. What are menu- selection and dialog box trees? And write it advantages.	Analyze	1

UNIT – V
Short answer questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1. Explain the features of QWERTY AND DVORAK LAYOUR	Understand	1
2. Distinguish between QWERTY and ABCDE style.	Understand	1
3. What are the function keys? What are their advantages?	Knowledge	1
4. Explain various Cursor movements keys	Knowledge	1
5. What is Fitt's law?	Knowledge	1

Long answer questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1. Explain briefly about direct control pointing devices.	Create	1

2. Explain the importance of keyboards, Function keys	Analyze	1
3. What is Fitt's law? Where it is used?	Understanding	1
4. What are novel pointing devices? Explain?	Create	1
5. What is scripting and explain the characteristics of scripting languages	Analyze	1

IX. OBJECTIVE QUESTIONS: JNTUH
UNIT: I

1. Based upon research and user expectancies, where should *global or site-wide* navigation elements be located on a Web page?

   a) At the top.

   b) On the left side.

   c) On the right side.

   d) At the end.

   e) It does not matter.

2. How can textual menu listings with a small number of options (seven or less) be ordered?

   a) Sequence of occurrence.

   b) Frequency of occurrence.

   c) Numeric order.

   d) Importance.

   e) Semantic similarity.

   f) Alphabetic order.

   g) Natural order.

   h) All of the above.

3. How is a *direct action* item on a menu indicated?

   a) Underlining.

   b) An ellipsis.

   c) The color blue.

   d) A right-pointing arrow.

   e) No indicator is necessary.

4. What is a *temporal* menu?

   a) The more frequently chosen items are duplicated in a separate section at the menu top.

   b) A fixed and non-changeable array of choices.

   c) A traditional menu that first presents only the high-frequency items in their regular menu positions. After a short delay, the remaining lower-frequency items are filled in their normal positions.

   d) High-frequency items appear first and alone. The complete menu appears after a time delay.

   e) None of the above.

5. How can it be made obvious to the user that a selected link is leaving the currently displayed Web site?

a) Including the destination URL address below the link.

b) Providing a voice message advising the user he or she is leaving.

c) Including an "exit disclaimer" adjacent to the link.

d) Providing an interim "thank you" page after clicking an external link.

e) It is not necessary to provide this kind of notification.

6. Which of the following design guidelines should be adhered to in organizing a menu?

a) Display all relevant alternatives and only relevant alternatives.

b) Delete or gray-out inactive choices.

c) Provide scrolling as needed.

d) Reflect the most efficient sequence of steps to accomplish the most frequent or likely tasks.

e) Provide as many menu levels as necessary.

f) All of the above.

7. All Web site navigation links must possess which of the following qualities?

a) Make sense in the absence of site context.

b) Be continually available.

c) Possess an iconic label.

d) Be obvious and distinctive.

e) Be consistent in appearance, function, and ordering.

f) Offer only a single navigation path.

g) All of the above.

8. What design characteristics and elements aid the user in maintaining a *sense of place* in Web sites?

a) A simple hierarchical tree structure.

b) Ease of movement to important site features.

c) Consistency in all Web site design elements

d) A home base.

e) Ongoing feedback that shows users where they are in the site.

f) Clearly written link labels.

g) All of the above.

9. A menu structure consisting of a series of menu screens possessing only one path is called:

a) Single menu.

b) Sequential linear menu.

c) Simultaneous menu.

d) Hierarchical or sequential menu.

e) Connected menu.

f) Event-trapping menu.

g) None of the above.

10. Which of the following statements are *not* true?

a) A fat link is a link pointing to more than one page.

b) A click ability cue is an obvious indication on a page that at item is clickableand a link.

c) An explicit menu is menu is a listing of textual phrase links set apart from the main page content, often in toolbars or panels.

d) An exit disclaimer is an interim page after clicking an external link and before going to a new Web site.

e) A breadcrumb trail is a sequential textual listing of pages traversed from the parent page to the page currently being displayed.

f) All the statements are true

UNIT: II

1. Which of the following decisions is least likely to be supported by a management information system?
   a) Analysis of performance
   b) Dealing with customer enquiries
   c) Allocating budgets
   d) Company reorganization

2. What is one way to decouple the production system and the sales system
   a) To introduce a feedback loop
   b) To introduce an inventory
   c) To treat the systems as black boxes
   d) To decrease sales

3. Which of the following best describes the decision making required in dealing with customer enquiries?
   a) Unstructured/Operational
   b) Structured/Operational
   c) Unstructured/Strategic
   d) Structured/Strategic

4. Valid reason(s) for usability testing is/are:
   a) More often than not, intuitions are wrong.
   b) Designers believe users follow illogical paths.
   c) Experience changes ones perception of the world.
   d) Testing performance under user stress is important.

5. Thinking aloud testing:
   a) Slows down the user.
   b) Cannot provide performance data.
   c) Cannot provide process data.
   d) Is a formative evaluation method.

6. A persona in the context of interaction design:
   a) Is a narrative. b) Is a real person.
   b) Represents a particular type of user.
   c) Should represent an average user.

7. Which of the following fields is not an influence on HCI?
   a) Ergonomics.
   b) Cognitive psychology.
   c) Computer science.
   d) Informatics

8. With strategy implementation, analysis and design activities are needed. Analysis is concerned with understanding the business and user requirements for a new system. Process modelling captures the processes and sub-processes required for

the business information system. Davenport (1993) noted that even large multinationals would rarely exceed_____main processes?

    a) 12   b)10   c)6   d)8

9. The following is/are quality component(s) of usability:
    a) Learnability.
    b) Usefulness.
    c) Generalizability.
    d) Subjective satisfaction.

10. Before a process can be designed and implemented, a detailed deconstruction of the task is needed. This can be referred to as:

    a)Task analysis

    b)Activity-based process definition method

    c)Process

    d)Process mapping

UNIT: III

1. What term do psychologists use to describe the way that individuals absorb information?
    a) intelligence quotient
    b) Data processing
    c) Human computer interaction
    d) Cognitive style

2. What is another term for structured decisions?
    a) Read-intensive decisions
    b) Strategic decisions
    c) Non-programmable decisions
    d) Programmable decisions

3. _____ is the process of selecting things to concentrate on, at a point in time, from the range of possibilities available.
    a)Perception and recognition¬
    b)Attention
    c) Learning¬
    d) None of these

4. Interpretation inquiry, according to Beyer and Holtzblatt, is based on a master-apprentice model of learning.
    a)True
    b)False

5. The persona is not an actual user of the product, but is indirectly affected by it and its use refers to_____persona
    a) Primary
    b)Secondary
    c)Served
    d)Negative

6. The goals of HCI are:
    Usability and User Experience
    Learn ability and Comfort
    Tasks and Goals

7. WYSIWYG stands for_____.
    a) Where you see is where you get

b)What you see is what you get

c)When you see it when you get

d)none

8. _____ are individual and isolated regions within display that can be selected by the user to invoke specific operations.

a)Buttons

b)Pointers

c)Menus

d)Windows

9. What is the main strength of the Problem Space Framework as a model of human problem solving?

a)It operates within the constraints of the human processing system

b)It explains what is involved in insight

c) It allows ill-defined problems to be solved

d)None of these

10. _____ are unintentional while _____ occur through conscious deliberation.

a) Slips, mistakes

b) Errors slips

c) Mistakes, errors

d) Mistakes, slips

UNIT: IV

1) How are two systems described if a change in the outputs of one causes a substantial change in the state of the other?

a) Highly decoupled

b) Black boxes

c) Sub-systems

d) Highly coupled

2) Which of the following provides the best definition of "Information"?

a) Computer hardware

b) Transaction data

c) Computer software

d) Data processed for a purpose

3. Types of software programs usually includes

A. application programs

B. replicate programs

C. mathematical operations

D. both a and b

4. Set of programs with full set of documentation is considered as

A. database packages

B. file package

C. software

D. software packages

5. Specialized program that allows users to utilize in specific application is classified as

A. relative programs

B. application programs

C. relative programs

D. replicate programs

7. System programs examples are--------------------

8. _____classes are used to create the interface that the user sees and interacts with as the software is used.

9. _____&_____diagrams of UML represent Interaction modeling.

10. Execution Verifier is a dynamic tool that is also known as---------------------------------........

UNIT: V

1) What is a tool?
   a) Device
   b) Place
   c) Environment
   d) Frame work

2) What is an inter face?
   a) Component
   b) Mediator
   c) Environment
   d) Giving an environment to work

3) The most commonly used input device is
   a) Mouse
   b) Keyboard
   c) Scanner
   d) Printer

4) Which keys allows user to enter frequently used operations in a single key stroke?
   a) Function keys
   b) Cursor control keys
   c) Trackball
   d) Control keys

5) _____are used to measure dial rotations.
   a) Potentiometers
   b) Volta meter
   c) Parameter
   d) Only a

6) The device which is used to position the screen cursor is
   a) Mouse
   b) Joystick
   c) Data glove
   d) Both a and c

7) _____is used for detecting mouse motion.
   a) Optical sensor
   b) Rollers on the bottom of mouse
   c) Both a and b
   d) Sensor

8) Devices that are used to receive data from central processing unit are classified as
   a) output/input devices
   b) digital devices
   c) signaled devices

d) output devices
9) Devices that are under control of computer and are directly connected to it are said to be
   a) off-line devices
   b) on-line devices
   c) IN gate device
   d) IF gate device
10) A material on which data is stored or an output is classified as
   a) mini frame medium
   b) micro medium
   c) macro medium
   d) medium

XIII. WEBSITES:

1. http://courses.iicm.tugraz.at/hci/hci.pdf
2. http://www.prenhall.com/behindthebook/0132240858/pdf
3. http://ebooksfile.com/pdf/Zz2/human-computer-interaction-sample-exam-questions.pdf
4. http://nptel.ac.in/courses.php?disciplineId=106

XIV. EXPERT DETAILS:

1.   Dr Peter Bennett

Post(s):   Research Fellow, Department of Computer Science

Areas of   My PhD research investigated the uses of interaction design in the
expertise: development of new digital musical instruments. I am...

Keywords: human computer interaction | Interaction Design | Musical Instrument
                Design | augmented reality | design

2.   Dr Kirsten Cater

Post(s):   Academic Director, Centre for Innovation Reader in Human Computer
                Interaction, Department of Computer Science

Areas of   I have worked, managed and published internationally in a broad range of
expertise: research areas including human computer interaction,...

Keywords: human computer interaction | mobile and ubiquitous computing | computer
                graphics | context aware applications | pervasive computing

3.John M. Carroll (John M. Carroll (information scientist))

4.Stuart Card (Stuart Card)

5.Allen Newell (Allen Newell)

6.Alan Dix (Alan Dix)

7.Peter Pirolli (Peter Pirolli)

8.Thomas P Moran (Thomas P. Moran)

9.Douglas Englebart (Douglas Engelbart)

XV. JOURNALS:

*ACM Transactions on Computer-Human Interaction (ACM).*ACM TOCHI seeks to be the premier archival journal in the multidisciplinary field of human-computer interaction.

*AIS Transactions on Human-Computer Interaction (Association of Information Systems).*THCI is a high-quality peer-reviewed international scholarly journal on Human-Computer Interaction, emphasizing applications in business, managerial, organizational, and cultural contexts.

*Behaviour and Information Technology (Taylor & Francis).*BIT focuses on the human aspects of information technology, on which much of our developed world depends

Human Technology (online; Agora centre, University of Jyvaskyla, Finland). Human Technology is an interdisciplinary, multiscientific journal focusing on the human role in our modern technological world.

*Foundations and Trends in Human-Computer Interaction (Now Publishers).*Foundations and Trends in Human-Computer Interaction publishes surveys and tutorials on the foundations of human-computer interaction.

*Human–Computer Interaction (Taylor & Francis).*An interdisciplinary journal defining and reporting on the challenging issues in making computational technology work for people, Human-Computer Interaction publishes theoretical, empirical, and methodological articles on the user sciences and system design as it affects individual users, work groups, communities, and social and organizational settings.

XVI. LIST OF TOPICS FOR STUDENT SEMINARS:

1. Psychology. human memory
2. Sociology and social psychology.
3. Cognitive science.
4. Human factors / cognitive ergonomics / physical ergonomics. Repetitive strain injury.
5. Computer science. computer graphics
6. visualization
7. design
8. Interactive Art and HCI.

XVII. CASE STUDIES / SMALL PROJECTS:

1. Analyze the different components of computer
2. Explain the interaction speed of human to computer?
3. Design the screen
4. Construct window?
5. Design the user interface with the help of any tool