

FACULTY OF INFORMATICS

B.E. 4/4 (IT) II – Semester (Main) Examination, April / May 2013

Subject: Soft Computing (Elective – V)

Time: 3 Hours

Max.Marks: 75

*Note: Answer all questions from Part – A and any five questions from Part – B.***PART – A (25 Marks)**

1. Write an expression for sigmoid function and show how this function can be used to calculate activation level O_j . (3)
2. How do you represent a trained network? (2)
3. When do you stop computation in an ANN? (2)
4. What is competitive learning? What is leaky learning? (3)
5. Distinguish between a classical set and a fuzzy set. (2)
6. How is membership value assigned? Give a list of such assignment processes. (3)
7. Define the following fuzzy logic logical-connectives: (3)
 - i) Negation
 - ii) Disjunction
 - iii) Conjunction
 - iv) Implication
8. Two fuzzy sets \tilde{A} and \tilde{B} , are defined below: (2)

$$\tilde{A} = \left\{ \frac{0.2}{1} + \frac{1}{2} + \frac{0.7}{4} \right\} \text{ and } \tilde{B} = \left\{ \frac{0.5}{1} + \frac{1}{2} \right\}.$$
 Determine the membership values for the algebraic product mapping, $f(\tilde{A}, \tilde{B})$.
9. Given fuzzy sets $\tilde{I}_1 = \left\{ \frac{1}{3} + \frac{0.8}{7} \right\}$ and $\tilde{I}_2 = \left\{ \frac{0.7}{4} + \frac{1.0}{6} \right\}$, assess the truth value of the inequality, $\tilde{I}_1 \geq \tilde{I}_2$. (2)
10. Explain cross-over with a suitable example giving selection criteria for elements used in cross-over. (3)

PART – B (5x10 = 50 Marks)

11. Show how perceptron network enables address linearly separable problem. (10)
12. Write back propagation algorithm and explain its working. (10)
13. Describe and explain Kohonen self organizing network. (10)
14. Demonstrate fuzzification and defuzzification using a suitable example. (10)
15. Explain fuzzy propositions, formation of rules and aggregation of fuzzy rules. (10)
16. State a specific control problem and explain how fuzzy control is attempted. (10)
17. Write short notes on any two: (10)
 - a) Training and learning in ANN.
 - b) Genetic algorithms and optimization
 - c) Classical logic and fuzzy logic.

FACULTY OF INFORMATICS

B.E. 4/4 (IT) II – Semester (Main) Examination, April / May 2013

Subject: Human Computer Interaction (Elective – V)

Time: 3 Hours

Max.Marks: 75

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (25 Marks)

1. What is the difference between user interface prototyping and usability testing?
2. What are design standards and style guides? How they are useful for developers and users?
3. What are different levels of navigation links a web site contains? Indicate the locations where these links are placed on a web page?
4. What are key board accelerators and short cut keys?
5. Differentiate between primary and secondary windows.
6. What are different kinds of contextual help?
7. Why classic water fall life cycle model cannot be used in interaction design?
8. What is Fitt's law?
9. What is anthromorphism?
10. What is formative evaluation?

PART – B (5x10 = 50 Marks)

- 11.(a) Define usability. Give some usability problems of graphical systems.
(b) Briefly describe how card-sorting techniques can be used to elicit requirements of web-based information systems.
- 12.(a) Briefly list the advantages and the disadvantages of multiple document interfaces.
(b) What are different window presentation styles? Describe each of them.
- 13.(a) What is reference help? Give design guidelines for reference help.
(b) Explain different techniques to deal with time delays.
- 14.(a) What impact does cognition have on human-computer interactions? Explain in brief.
(b) What is interaction design? Describe the four main activities of the process of interaction design.
- 15.(a) List the advantages and disadvantages of paper prototyping.
(b) What are the fundamental differences between heuristic evaluation and cognitive walkthrough?
- 16.(a) What are the major differences between web interface and GUI?
(b) Differentiate between pull down, popup and cascading menus.
17. Write short notes on:
 - a) Common pitfalls in design process
 - b) Gestalt laws of perception
 - c) Usability heuristics

FACULTY OF INFORMATICS**B.E. 4/4 (IT) II – Semester (Main) Examination, April / May 2013****Subject: Software Project Management (Elective – V)****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part – A and any five questions from Part – B.****PART – A (25 Marks)**

1. How are software projects different from general projects of other branches of engineering? (2)
2. What are the problems encountered in software projects as perceived by members of the project team? (3)
3. Identify the main stake-holders in a software project that aims at automating the process of student attendance in an engineering college. (2)
4. Differentiate between a project and programme, with respect to software project. (3)
5. Define 'critical path' with respect to network programming models like PERT. (2)
6. List any three differences between the PRINCE 2 and B S 6079 project management methodologies. (3)
7. How is risk exposure calculated? (2)
8. Subsequent to the identification of major risks and allotment of priorities, what are the various choices available for handling risk to software project management? (3)
9. List two main reasons for stress during project execution. (2)
10. Differentiate between reliability and maintainability as practical software quality measures. (3)

PART – B (5x10 = 50 Marks)

11. Enumerate an outline of the various activities in step-wise planning of a software project. Elucidate the various steps. (10)
12. Assume that you have been assigned to a pay roll automation project. How will you handle the risk associated with the project? (10)
- 13.(a) When are 'top-down' and 'bottom-up' approaches used for software project estimation? (5)
 - (b) Explain the COCOMO methodology of software project effort estimation. (5)
- 14.(a) Contrast the PERT and CPM methods of network activity modelling. How does PERT reduce the uncertainty in software project scheduling? (5)
 - (b) How are costs categorized in software project management? (5)
- 15.(a) Enunciate an illustrative procedure for effecting a change in the tasks assigned in software project. (5)
 - (b) What are the various organizational structures used during software project implementation? (5)
- 16.(a) Elucidate the PRINCE 2 approach to planning a software project. (5)
 - (b) As per BS 6079, what are the main elements of a project plan? (5)
17. Write short notes on any two: (10)
 - a) Ensuring quality in software project
 - b) Agile methodology
 - c) Leadership styles in software projects.

FACULTY OF ENGINEERING & INFORMATICS**B.E. 4/4 (ECE / CSE / IT) II – Semester (Main) Examination, April / May 2013****Subject: Entrepreneurship (Elective – II & V)****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part – A and any five questions from Part – B.****PART – A (25 Marks)**

1. What do you mean by economic growth for entrepreneur? (2)
2. Mention the different types of enterprises. (2)
3. What are the characteristics for entrepreneurs? (2)
4. What are the sources of ideas in technology development? (2)
5. What is slack? (2)
6. What is technical analysis in project formulation? (3)
7. How do you analyze the market for demand? (3)
8. Define three time estimates. (3)
9. What are the determinants in the behaviour aspects of entrepreneurs? (3)
10. Mention the various approaches of time management. (3)

PART – B (5x10 = 50 Marks)

- 11.(a) Enumerate the opportunities and challenges in Indian Industrial Environment.
(b) Mention the objectives of small scale industry.
- 12.(a) Explain the characteristics of women entrepreneurs.
(b) What are the difficulties to be faced by the first generation entrepreneurs?
13. The three time estimates of each activity together with predecessors of a building project are given below:

Activity	Three time estimates		
	t_o	t_m	t_p
A-B	2	6	10
A-C	4	8	122
B-C	2	4	6
C-D	0	0	0
B-D	2	3	4
C-E	3	6	9
D-F	6	10	14
E-F	1	3	5

- i) Draw the network and identify the critical path
- ii) Identify the float for each activity and slack for each event.
- iii) Develop the time scale for the network.
- 14.(a) How do you identify the market demand for project formulation?
(b) What is the difference between critical path and non critical path?
- 15.(a) Briefly discuss on the behaviour aspects of entrepreneurs.
(b) What is time management matrix?
- 16.(a) Discuss the limitations of bar chart.
(b) Enumerate the behaviour aspects of entrepreneurs.
17. Write short notes on any three of the following:
 - i) Forms of enterprises
 - ii) Float and dummy activity
 - iii) Sources of ideas
 - iv) Collaborative interaction for technology development
 - v) Leadership concept and models.