

**FACULTY OF ENGINEERING**  
**B.E. 4/4 (CSE) II – Semester (Old) Examination, May 2014**

**Subject : Entrepreneurship (Elective – II)**

Time : 3 hours

Max. Marks : 75

**Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.**

**PART – A (25 Marks)**

- 1 Who is an Entrepreneur? (2)
- 2 Define Economy of a Nation and list out various factors which influence economical growth. (3)
- 3 Briefly describe about women entrepreneurs. (3)
- 4 What is collaborative interaction? Also mention its salient features. (3)
- 5 Explain about technical analysis of project formulation. (3)
- 6 What are the various sources of finance in India? (2)
- 7 Differentiate between CPM and PERT techniques. (3)
- 8 Define the terms critical path and network diagrams. (2)
- 9 Define personality and mention its determinants. (2)
- 10 Describe briefly about urgency addition and its consequences. (2)

**PART – B (50 Marks)**

- 11 a) Explain in detail about small scale industries and its significant features. (5)  
 b) Discuss about the linkage required between small and large scale industries. (5)
- 12 a) List out and explain qualities of entrepreneurs. (5)  
 b) Define Idea and explain about idea generation and screening of ideas. (5)
- 13 a) Explain about project financing in India. (5)  
 b) Discuss about the necessity for incorporating marketing analysis in project formulation. (5)
- 14 Define project and explain the concept and role of CPM and PERT techniques in an effective planning and successful execution of a project. (10)
- 15 a) Define leadership and explain how entrepreneurs acquire leadership qualities. (5)  
 b) List out various approaches of Time Management and explain any two of them. (5)
- 16 a) “Entrepreneurs are made not born” – Give your views with proper justification. (5)  
 b) Discuss in detail about human aspects of project management. (5)
- 17 Write short notes on any **three** of the following : (10)
  - a) First generation entrepreneurs
  - b) Tax Assessment
  - c) Values and Attitudes
  - d) Sole proprietorship

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**FACULTY OF ENGINEERING**  
**B.E. 4/4 (CSE) II – Semester (Old) Examination, May 2014**

**Subject : Soft Computing (Elective – II)**

**Time : 3 hours**

**Max. Marks : 75**

**Note: Answer all questions from Part - A. Answer any FIVE questions from Part - B.**

**PART – A (25 Marks)**

- |    |   |   |
|----|---|---|
| 1  | What are the applications of neural networks. | 3 |
| 2  | List the limitations of perceptrons.          | 3 |
| 3  | Explain delta rule for single output unit.    | 3 |
| 4  | Describe unsupervised learning.               | 2 |
| 5  | Explain membership function.                  | 3 |
| 6  | Define Defuzzification.                       | 2 |
| 7  | What is meant by genetic algorithm?           | 2 |
| 8  | What is the storage capacity of BAM?          | 3 |
| 9  | Describe hybrid system.                       | 2 |
| 10 | Define Hebbs law.                             | 2 |

**PART – B (50 Marks)**

- |    |  |                     |
|----|--|---------------------|
| 11 | a) What are the properties of Neural Networks? Distinguish between feed forward Networks and Recurrent networks. | 5                   |
|    | b) Explain about back propagation algorithm.   | 5                   |
| 12 | a) Explain perception learning rule.   | 5                   |
|    | b) Explain about Madaline.   | 5                   |
| 13 | Differentiate between discrete and continuous Hopfield Network.  | 10                  |
| 14 | a) Explain the training algorithm used in ART network.   | 5                   |
|    | b) Define Euclidian distance.  | 5                   |
| 15 | Explain defuzzification methods in detail.   | 10                  |
| 16 | a) Explain the working of genetic programming.   | 5                   |
|    | b) List the applications of genetic programming.   | 5                   |
| 17 | Write short notes on :   |                     |
|    | a) Fuzzy ordering  | b) Fuzzy operations |

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**FACULTY OF ENGINEERING**  
**B.E. 4/4 (CSE) II – Semester (Old) Examination, May 2014**

**Subject : Software Quality and Testing (Elective – II)**

Time : 3 hours

Max. Marks : 75

**Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.**

**PART – A (25 Marks)**

- |    |   |   |
|----|---|---|
| 1  | List the components of quality assurance.                   | 2 |
| 2  | Define six sigma.   | 2 |
| 3  | List the categories of software quality metrics.            | 2 |
| 4  | What are the four criteria's to establish a testing policy? | 2 |
| 5  | Differentiate between verification and validation.          | 3 |
| 6  | Define Bottom-up testing.                                   | 3 |
| 7  | What is CRUD testing?                                       | 3 |
| 8  | Write any two inspection guidelines.                        | 2 |
| 9  | What is the workbench for testing requirements?             | 3 |
| 10 | What is Malcom balridge?                                    | 3 |

**PART – B (50 Marks)**

- |    |  |    |
|----|--|----|
| 11 | a) What is software configuration management? Explain in detail the elements of software configuration management. | 5  |
|    | b) Explain in detail the CMMI.   | 5  |
| 12 | Explain various metrics for software maintenance.  | 10 |
| 13 | Define test strategy. List and explain various test factors.   | 10 |
| 14 | a) Distinguish between black box and white box testing.  | 5  |
|    | b) Explain why defects are hard to find.   | 5  |
| 15 | Discuss the testing off the shelf components in detail.  | 10 |
| 16 | a) Explain in detail the components of SQA.  | 5  |
|    | b) Explain the workbench for Web applications.   | 5  |
| 17 | Explain the following :  |    |
|    | a) Database testing  | 4  |
|    | b) PCMM  | 3  |
|    | c) Testing tactics checklist   | 3  |

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**FACULTY OF ENGINEERING**  
**B.E. 4/4 (CSE) II – Semester (New) (Main) Examination, May 2014**

**Subject: Software Quality and Testing (Elective – II)**

Time: 3 Hours

Max.Marks: 75

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

**PART – A (25 Marks)**

- |    |  |   |
|----|--|---|
| 1  | Define software quality assurance. List out the components of SQA. | 3 |
| 2  | Define 6 sigma.  | 2 |
| 3  | Differentiate functional testing and structural testing.           | 2 |
| 4  | List out any eight test factors.                                   | 2 |
| 5  | What is a testing policy? Explain with one example.                | 2 |
| 6  | Discuss JAD.   | 3 |
| 7  | Explain boundary value analysis.                                   | 3 |
| 8  | Discuss about work bench concept. Give a suitable example.         | 3 |
| 9  | What is V-testing? How is it advantageous over life cycle testing? | 2 |
| 10 | Draw the work bench of testing security.                           | 3 |

**PART – B (50 Marks)**

- |    |   |    |
|----|---|----|
| 11 | (a) Explain in detail about software configuration management.                  | 5  |
|    | (b) Explain CMM and CMMI.   | 5  |
| 12 | Explain in detail about the software metrics methodology.                       | 10 |
| 13 | (a) Discuss about the eight considerations in developing testing methodologies. | 5  |
|    | (b) Explain testing tactics checklist.  | 5  |
| 14 | (a) Explain eleven steps of testing process.                                    | 5  |
|    | (b) Discuss win runner testing tool.  | 5  |
| 15 | (a) Discuss about the taxonomy of testing tools.                                | 5  |
|    | (b) Explain cause effect graphing with an example.                              | 5  |
| 16 | (a) Discuss about structured approach testing.                                  | 5  |
|    | (b) Discuss briefly about CRUD testing.   | 5  |

- |    |   |    |
|----|---|----|
| 17 | Consider the following scenario, where the numbers of errors in each phase as follows:<br>Requirements = 30, Design = 40, Coding = 20 | 10 |
|----|---|----|

Calculate accumulated test cost for normal SDLC and structured SDLC by considering the study that testing prior to coding is 50% effective in detecting errors, and after coding is 80% effective and cost for correcting an error requires 1 unit before testing, 10 units at the testing phase and 100 at the production phase.

**FACULTY OF ENGINEERING****B.E. 4/4 (CSE) II – Semester (Old) Examination, May 2014****Subject : Information Storage and Management (Elective – II)****Time : 3 hours****Max. Marks : 75****Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.****PART – A (25 Marks)**

- |    |   |   |
|----|---|---|
| 1  | What are the factors that have contributed to the growth of Digital Data? | 3 |
| 2  | What are the various physical components of a host?                       | 3 |
| 3  | What is a Hot spare?  | 2 |
| 4  | Explain the structure of cache using a diagram.                           | 2 |
| 5  | What are the different components of SAN?                                 | 2 |
| 6  | Explain the benefits of a NAS device.                                     | 3 |
| 7  | What is the purpose of CDF in a content addressed storage?                | 2 |
| 8  | Determine the 3 factors which define Information Availability (IA).       | 3 |
| 9  | Backup is performed to serve 3 main purposes. What are they?              | 3 |
| 10 | Write short notes on securing BURA.                                       | 2 |

**PART – B (50 Marks)**

- |    |   |    |
|----|---|----|
| 11 | i) What are the core elements of a data center Infrastructure (DCI)?                                  | 5  |
|    | ii) What are the key requirements of DCI and explain how can we manage the storage infrastructure.    | 5  |
| 12 | Explain how RAID 5 data protection is done? Also explain what is the RAID impact on disk performance. | 10 |
| 13 | Explain the various components and working of a Intelligent storage system.                           | 10 |
| 14 | a) Describe the various fibre channel topologies.   | 5  |
|    | b) Explain how Gateway NAS and Integrated NAS differ.   | 5  |
| 15 | a) Write a detailed notes on SNIA taxonomy and storage virtualization configurations.                 | 6  |
|    | b) Write short notes on business impact analysis.   | 4  |
| 16 | With the help of a neat diagram explain the various local replication technologies.                   | 10 |
| 17 | Write short notes on :  |    |
|    | a) Storage virtualization   | 3  |
|    | b) Securing management activities   | 4  |
|    | c) Securing the application access domain   | 3  |

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**FACULTY OF ENGINEERING****B.E. 4/4 (CSE) II – Semester (New) (Main) Examination, May 2014****Subject : Information Storage and Management (Elective – II)****Time : 3 hours****Max. Marks : 75****Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.****PART – A (25 Marks)**

- |    |  |   |
|----|--|---|
| 1  | Explain ILM benefits.  | 3 |
| 2  | What is Lun masking?   | 2 |
| 3  | What is block level storage virtualization?                          | 3 |
| 4  | List out the purposes for backup.                                    | 3 |
| 5  | Mention the advantages of cloud computing.                           | 3 |
| 6  | What is accessibility monitoring?                                    | 3 |
| 7  | Draw the diagram for ISCSI PDU format.                               | 3 |
| 8  | List out the causes for information unavailability.                  | 2 |
| 9  | Define a threat.   | 1 |
| 10 | What are the components to be monitored in a storage infrastructure? | 2 |

**PART – B (50 Marks)**

- |    |  |    |
|----|--|----|
| 11 | a) What is RAID? Explain RAID levels.  | 6  |
|    | b) Explain the categories of intelligent storage systems.                                    | 4  |
| 12 | a) What is storage area network? Explain fibre channel architecture.                         | 6  |
|    | b) What is zoning and explain different types of zoning?                                     | 4  |
| 13 | a) Explain BC planning life cycle.   | 5  |
|    | b) Explain local replication technologies and write the advantages of LVM based replication. | 5  |
| 14 | What is cloud computing? And explain cloud service and deployment models.                    | 10 |
| 15 | a) Explain IP-SAN briefly with a neat diagram.   | 6  |
|    | b) Explain storage management activities.  | 4  |
| 16 | a) List out the various feature and benefits of CAS.   | 5  |
|    | b) What is information life cycle? How is it managed.  | 5  |
| 17 | Write short notes on :   |    |
|    | a) Risk Triad  | 3  |
|    | b) NAS   | 4  |
|    | c) Fibre channel addressing  | 3  |

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**FACULTY OF ENGINEERING**  
**B.E. 4/4 (CSE) II – Semester Examination, May 2014**

**Subject : Human Computer Interaction (Elective – II)**

**Time : 3 hours**

**Max. Marks : 75**

**Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.**

**PART – A (25 Marks)**

- |    |  |   |
|----|--|---|
| 1  | Define GUI. Explain its importance.                        | 2 |
| 2  | Why people have trouble with computers?                    | 2 |
| 3  | What are the constraints in window system designs?         | 3 |
| 4  | What are words, text and messages?                         | 3 |
| 5  | What are the possible problems that may occur with colors? | 3 |
| 6  | What is a wizard?  | 2 |
| 7  | What is anthropomorphism?                                  | 3 |
| 8  | Explain the term localization.                             | 2 |
| 9  | List out the goals of interaction designs.                 | 3 |
| 10 | What are agents? Explain in short.                         | 2 |

**PART – B (50 Marks)**

- |    |   |    |
|----|---|----|
| 11 | a) Explain the advantages and disadvantages of graphical systems.   | 5  |
|    | b) Describe the human considerations in design.   | 5  |
| 12 | What are screen based controls? Explain each in detail.   | 10 |
| 13 | a) Differentiate between practical measures and objective measures of usability.  | 5  |
|    | b) What is a window? Explain its types and list out the various window operations.                                      | 5  |
| 14 | a) Briefly describe two situations when you might use a trackball rather than a mouse.                                  | 5  |
|    | b) What are the different techniques of color pallet specifications?  | 5  |
| 15 | What are life cycle models? Compare and contrast waterfall model with the spiral model. Discuss their relevance to HCI. | 10 |
| 16 | a) Explain the problem space and conceptual model in interaction design.  | 5  |
|    | b) Explain the phases prototyping and construction in life cycle model.   | 5  |
| 17 | Write short notes on :  |    |
|    | a) Kinds of test  | 3  |
|    | b) Interface metaphors  | 4  |
|    | c) Accessibility  | 3  |

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**FACULTY OF ENGINEERING**

**B.E. 4/4 (CSE) II – Semester (New) (Main) Examination, May 2014**

**Subject : Human Computer Interaction (Elective – II)**

**Time : 3 hours**

**Max. Marks : 75**

**Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.**

**PART – A (25 Marks)**

- 1 What is interaction paradigm?
- 2 Distinguish the terms : Semantic Distance and Articulatory Distance
- 3 What are functional prototypes?
- 4 What is Heuristic evaluation?
- 5 List two applications of Glimpse model.
- 6 List different phases of usability test.
- 7 What is the difference between RGB and HSV color systems?
- 8 Differentiate between Modal/Modeless dialog boxes.
- 9 Give general benchmark formula for font size, given normal vision and optimal conditions.
- 10 What are the two distinct applications of speech recognition?

**PART – B (50 Marks)**

- 11 a) List the characteristics of embodied virtuality environments.  
b) List the advantages and disadvantages of menu based interfaces.
- 12 a) What are the advantages and disadvantages of using card sorting sessions in conceptual design?  
b) What are the advantages and disadvantages of using semantic network in conceptual design?
- 13 Briefly describe Gestalt principles of perception.
- 14 a) Discuss the usage of color in interaction design.  
b) What are the advantages and disadvantages of SDI window interface?
- 15 a) What are different types of help? Describe in brief.  
b) Discuss the significance of physical aspects of perception for haptic devices.
- 16 a) Describe different types of controls in WIMP interfaces.  
b) What is direct manipulation interaction style? List the advantages and disadvantages.
- 17 Write short notes on :
  - a) Execution/Evaluation Action Cycle
  - b) Deconstructing Icons

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**FACULTY OF ENGINEERING**  
**B.E. 4/4 (CSE) II – Semester (New) (Main) Examination, May 2014**

**Subject: Software Reuse Techniques (Elective – II)**

Time: 3 Hours

Max.Marks: 75

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

**PART – A (25 Marks)**

- |    |   |   |
|----|---|---|
| 1  | Define object oriented software engineering (OOSE).   | 2 |
| 2  | What are the key RSEB (Reuse Driven Software Engineering Business) processes in a running reuse business? | 3 |
| 3  | Compare components and abstract components.   | 2 |
| 4  | Mention various mechanisms which can be used for expressing use case variability.                         | 2 |
| 5  | Mention the implications of programming language features.  | 3 |
| 6  | Draw the structure of observer pattern. Mention the participants in observer pattern.                     | 3 |
| 7  | What are the advantages of chain responsibility pattern?  | 2 |
| 8  | When to use factory method?   | 3 |
| 9  | Name the six creational patterns.   | 2 |
| 10 | What are the common uses of model-view-controller architectural pattern?                                  | 3 |

**PART – B (50 Marks)**

- |    |  |    |
|----|--|----|
| 11 | (a) What is re-use driven software engineering? Explain its advantages.  | 5  |
|    | (b) Explain about applications and components sub-systems.   | 5  |
| 12 | Draw binder class diagram? Explain the consequences of builder pattern.  | 10 |
| 13 | (a) Explain the intent, motivation, applicability, collaborations and consequences of interpreter pattern.                               | 5  |
|    | (b) Explain about the applicability, consequences and collaborations of strategy pattern with reference to the structure of the pattern. | 5  |
| 14 | Explain in detail about the black board architecture for repository systems.   | 10 |
| 15 | How design patterns solve design problems? Explain with an example.  | 10 |
| 16 | How to select a design pattern and use a design pattern? Give examples.  | 10 |
| 17 | Write short notes on:  | 10 |
|    | a) Behavioral pattern  |    |
|    | b) Micro Kernel architecture   |    |

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**FACULTY OF ENGINEERING**  
**B.E. 4/4 (CSE) II – Semester (New) (Main) Examination, May 2014**

**Subject: Simulation & Modeling (Elective – II)**

**Time: 3 Hours**

**Max.Marks: 75**

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

**PART – A (25 Marks)**

- 1 Define simulation. Give an example.
- 2 What are the areas of applications of simulation?
- 3 Define a statistical model. Give an example.
- 4 What is SIMSCRIPT? Explain.
- 5 Write the properties random numbers.
- 6 What is uniform distribution?
- 7 Define verification and validation.
- 8 What are the multivariant input models?
- 9 Define stochastic output data.
- 10 What are steady state simulations?

**PART – B (50 Marks)**

- 11 Explain:
  - a) System and system environment.
  - b) Steps in a simulation study
- 12 Discuss the following:
  - a) GPSS
  - b) SIMAN
- 13 Explain the generation of pseudo random numbers in detail.
- 14 Discuss:
  - a) Poisson distribution
  - b) Gamma distribution
- 15 Explain:
  - a) Data collection
  - b) Chi-square test
- 16 Discuss the types of simulation with respect to output analysis.
- 17 Write short notes on:
  - a) Model of a system
  - b) SLAM.

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**FACULTY OF ENGINEERING**

B.E. 4/4 (CSE) II – Semester (New) (Main) Examination, May 2014

Subject : Operations Research (Elective – II)

Time : 3 hours

Max. Marks : 75

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

- 1 What is difference between dual simplex method and simplex method?
- 2 Explain the significance of artificial variables in LP.
- 3 What is optimality condition in simplex method algorithm?
- 4 Explain transshipment problem.
- 5 List out assumptions in sequencing.
- 6 Define i) Pure strategy ii) Mixed strategy
- 7 What is degeneracy in transportation problem?
- 8 Define optimization techniques.
- 9 Difference between two-phase method and big-M method.
- 10 What is canonical form?

**PART – B (50 Marks)**

- 11 Solve the following LPP by simplex method

$$\begin{aligned} \text{Maximize } Z &= 5x_1 + 8x_2 \\ \text{Subject to } 15x_1 + 10x_2 &\leq 180 \\ 10x_1 + 20x_2 &\leq 200 \\ 15x_1 + 20x_2 &\leq 210 \\ x_1, x_2 &\geq 0 \end{aligned}$$

- 12 a) Obtain the dual of

$$\begin{aligned} \text{Min } Z &= 40x_1 + 120x_2 \\ \text{Sub to } x_1 + 2x_2 &\leq 8 \\ 3x_1 + 5x_2 &= 90 \\ 15x_1 + 44x_2 &\leq 660 \\ x_1 &\geq 0, x_2 &\geq 0 \end{aligned}$$

- b) What do you understand by sensitivity analysis?

- 13 Solve the following traveling salesman problem.

		To				
		A	B	C	D	E
From	A	$\infty$	10	25	25	10
	B	1	$\infty$	10	15	2
	C	8	9	$\infty$	20	10
	D	14	10	24	$\infty$	15
	E	10	8	25	27	$\infty$

- 2 -

14 Solve the following assignment problem.

		Members				
		I	II	III	IV	V
MEN	A	18	20	16	14	10
	B	12	10	16	14	--
	C	10	12	14	16	18
	D	20	18	22	16	14
	E	12	18	16	10	12

15 Following is the pay off matrix for player A.

		Player B				
		I	II	III	IV	V
Player A	I	2	4	3	8	4
	II	5	6	3	7	8
	III	6	7	9	8	7
	IV	4	2	8	4	3

16 A super market has a single cashier. During the peak hours, customer arrive at a rate of 20 customers per hour. The average number of customers that can be processed by the cashier is 24/hr. Calculate

- Probability that the cashier is idle
- The average number of customers in the queching system
- The average time a customer spends in the system
- The average number of customers in the queue
- The average time a customer spends in the queue waiting for service

17 A book binder has one printing press, are binding machine and the manuscripts of a number of different books. The time required performing the printing and binding operations for each book are shown below. We wish to determine the order in which books should be processed in order to minimize the total time required to turn out all the books.

Book	1	2	3	4	5	6
Printing time (hrs)	30	120	50	20	90	110
Binding Time (hrs)	80	100	90	60	30	10

Determine the sequence of jobs that will minimize the total elapsed time and ideal time on binding machine.

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