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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 1**

**BT0092 – Software Project Management – 4 Credits**

**(Book ID:)**

**Assignment Set – 1 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Explain the IT and its organizational structures in detail?
2. Explain different roles of the software development?
3. Define project management using a suitable diagram?
4. List out different project development stages in detail?
5. Describe work break down structure?
6. Define PERT chart through a suitable example?
7. Identify the various goals of software configuration management (SCM)?
8. What is CMM? Explain its various levels?
9. What are the two broad types of Software Testing?
10. Bring out the key features of Infosys Project Closure Analysis Report?

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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 1**

**BT0092 – Software Project Management – 4 Credits**

**(Book ID: B0946)**

**Assignment Set – 2 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Define software testing in software development?
2. Define various features of T-form organization?
3. Explain different activities of a project manager?
4. Describe Gantt chart?
5. Define project metrics and its limitations?
6. What is Earned Value Analysis (EVA), explain it?
7. What is the difference between SCM audit and a formal technical review?
8. Compare and contrast ISO and CMM?
9. What do you mean by Black Box Testing? Why it is called so?
10. What are the salient features of ACIC Project Closure Analysis Report?

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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9301 – Computer Graphics – 4 Credits**

**(Book ID: B0810)**

**Assignment Set – 1 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Discuss about image processing as picture analysis.
2. List the advantages of interactive graphics.
3. Explain the representative uses of computer graphics.
4. Draw and explain the block diagram of typical workstation.
5. Explain the raster scan display system.
6. What is frame buffer? Explain.
7. Explain the interface between application program and the hardware.
8. With the help of a block diagram explain the display system with only frame buffer.
9. Explain the steps in DDA line drawing algorithm.
10. Discuss the merits and demerits of DDA line drawing algorithm.

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**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9301 – Computer Graphics – 4 Credits**

**(Book ID: B0810)**

**Assignment Set – 2 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Explain the steps required to fill the polygon using flood fill technique.
2. Explain the steps required to fill the polygon using boundary fill technique.
3. Explain the line clipping with neat diagram.
4. Explain the Cyrus-Beck algorithm for generalized line clipping.
5. Give the 2-D transformation matrix for:
  - a. Translation
  - b. Rotation
  - c. Scaling
6. Explain the homogeneous coordinates for translation, rotation and scaling.
7. Write a short note on Reflection.
8. Derive the 3-D transformation matrix to transform world coordinates to viewing coordinates.
9. Write a short note on parallel projection.
10. Explain the various types of parallel projections.

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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9302 – Human Computer Interface – 4 Credits**

**(Book ID: B1364)**

**Assignment Set – 1 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. What is the goal of human-machine interaction engineering?
2. Mention the factors considered for good design.
3. List the main functions of GUI.
4. Compare Direct manipulation and WIMP/GUI interfaces.
5. What are the advantages of graphical system?
6. Briefly describe the causes of bad GUI design.
7. What are the fields in which the ideal designer of an interactive system should expertise?
8. Discuss some common characteristics of human interaction speed.
9. What are the aims of good screen design?
10. Explain how Grouping and structure helps in good screen design.

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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9302 – Human Computer Interface – 4 Credits**

**(Book ID: B1364)**

**Assignment Set – 2 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Describe the disabilities in retrieval of information on web.
2. What are the technical considerations in interface design?
3. What are the characteristics and components of a window?
4. Explain the different types of windows.
5. What are the guidelines for the use of text, words and messages?
6. How icons help in user interaction? Explain.
7. What is the use of user interface software tools?
8. Explain the keyboard layouts and function keys.
9. Explain the advantages and disadvantages of different device based controls.
10. Explain the methodology for aiding children with mental disorders.

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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9303 – Design Patterns – 4 Credits**

**(Book ID: B1365)**

**Assignment Set – 1 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Explain the role of object oriented designers in developing a software system.
2. What are the four essential elements of design patterns? Explain.
3. List the most popular design patterns available in the catalog.
4. How will you organize a design pattern catalog?
5. Explain various design problems involved in designing a document editor.
6. How will you encapsulate a formatting algorithm in an object?
7. How will you support multiple look-and-feel standards in documents?
8. How will you include various user formatting features in a document?
9. What are Creational Patterns? Explain.
10. Explain the Factory Method in detail.

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**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9303 – Design Patterns – 4 Credits**

**(Book ID: B1365)**

**Assignment Set – 2 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Explain the features of Adapter Pattern.
2. Give the applicability of Bridge Pattern.
3. Explain the features of Decorator pattern with a suitable example.
4. What is Façade pattern? Bring out its importance.
5. Explain the importance of Chain of Responsibility with a suitable example.
6. What is Command pattern? Explain its significances.
7. Explain the features of Iterator pattern.
8. Explain the features of State pattern.
9. Bring out the important features of creational patterns.
10. Explain in what ways design patterns help the software developers to develop a robust system.

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**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9401 – Pattern Recognition – 4 Credits**

**(Book ID: B1366)**

**Assignment Set – 1 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Explain the following terms associated with Pattern Recognition:
  - a. Features
  - b. Collection
  - c. Class or Label
2. Explain the process followed by a Pattern Recognition System for processing the input data.
3. Explain the working of character recognition with a suitable example.
4. Describe the importance of Classification and Regression in the process of pattern recognition.
5. Explain the theory and importance of Model complexity with a relevant example.
6. Describe Bayes' theorem and its applications in pattern recognition.
7. Describe the theory of Bayesian learning of network weights.
8. Compare the Bayesian models.
9. Discuss Bayesian Decision Theory in detail.
10. Discuss the theory of error probabilities and integrals.

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**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9401 – Pattern Recognition – 4 Credits**

**(Book ID: B1366)**

**Assignment Set – 2 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. Describe the theory of Maximum likelihood and Bayesian estimation.
2. Discuss the problem of dimensionality in feature selection process.
3. Describe the theory of density estimation.
4. Discuss the application of Parzen windows for density estimation.
5. Describe the theory of linear discriminant functions and decision surfaces.
6. Explain the theory of generalized linear discriminant functions.
7. Describe the usage of relaxation procedures.
8. Describe the theory of Bias and Variance.
9. Discuss the theory of Mixture densities in detail.
10. Discuss the theory of data description and clustering.

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**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9402 – Artificial Intelligence – 4 Credits**

**(Book ID: B1367)**

**Assignment Set – 1 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. What do you mean by semantic networks? Explain with an example.
2. Explain Partitioned semantic networks with an example.
3. What are the advantages and disadvantages of CD?
4. Write a note on causal relations.
5. What is an expert system? Explain briefly.
6. What are the advantages and disadvantages of expert systems?
7. Explain the architecture of Expert System.
8. What is learning? Explain briefly.
9. What do you mean by the term “Robotics”? Explain.
10. What is Prolog? Give prolog facts and rules.

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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9402 – Artificial Intelligence – 4 Credits**

**(Book ID: B1367)**

**Assignment Set – 2 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. What is artificial intelligence? Explain.
2. Name the Modern Founders of AI.
3. List the attributes of intelligent systems.
4. Explain the first principle of AI.
5. Explain State Space Search.
6. Analyze water Jug problem.
7. What are the properties of good generators?
8. What do we mean by Knowledge representation? Explain briefly with examples.
9. Describe Propositional Logic.
10. Write a note on inference rules for propositional logic.

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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9403 – Virtual Reality – 4 Credits**

**(Book ID: B1368)**

**Assignment Set – 1 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. How will you import CAD files in geometric modeling?
2. How can you create surface with 3D Scanner in geometric modeling?
3. Explain kinematics modeling in virtual reality.
4. Describe object hierarchies in kinematics modeling.
5. What is the need of behavior modeling in virtual reality?
6. What is model management? Explain any two methods.
7. Explain perceptions in the visual system and their importance in virtual environments.
8. What is VRML? Explain.
9. Explain the manufacturing areas where VRML is used.
10. Explain how virtual reality will help in motion analysis.

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**Spring 2012**

**Bachelor of Science in Information Technology (BScIT) – Semester 6**

**BT9403 – Virtual Reality – 4 Credits**

**(Book ID: B1368)**

**Assignment Set – 2 (60 Marks)**

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**Answer all questions**

**10 x 6 = 60**

1. What is virtual reality? Explain.
2. What are the three I's of virtual reality?
3. What do you mean by a tracker? Explain.
4. Define the four tracker performance parameters.
5. What are Graphics displays? Explain.
6. With examples explain Head-mounted displays.
7. What do you mean by Sound displays? Explain briefly.
8. Describe Human Haptic System.
9. Explain Graphics Rendering and Haptic Rendering Pipeline concept.
10. Explain SGI Infinite Reality Architecture.

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