FACULTY OF INFORMISTICS

B.E. 3/4 (IT) II – Semester (Main) Examination, May / June 2015
Subject: Computer Graphics (Elective – I)

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 Persistence.
2. What is meant by affine transformations?
3. Explain perspective projection.
4. What is meant by Rasterization?
5. What is global illumination?
6. Write down the properties of Bazel curves.
7. Explain different tree structures.
8. What is meant by primitives and attributes?
9. Define 3 types of input modes.
10. What is picking?

PART – B (50 Marks)

11. a) Explain different graphics architectures.
    b) How do you program two dimensional applications?

12. a) Describe three-dimensional primitives for geometric objects.
    b) Discuss interactive picture construction techniques.

13. a) Find the matrix transformation for scaling a triangle with vertices (6,4), (14, 4) and (10, 10) to half its size.
    b) Is concatenation of transformations commutative? Discuss in detail.

14. a) Explain phong lighting model.
    b) Give steps of a line clipping algorithm and trace it with an example.

15. a) Explain cubic B-splines.
    b) Explain open scene graph.

16. a) Describe the Bresenham’s line drawing algorithm for all quadrants.
    b) Explain hidden surface removal algorithm.

17. Write short notes on:
    a) Anti-aliasing
    b) Properties of B-spline curves
    c) Weiter-Atherton polygon clipping

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FACULTY OF INFORMATICS

B.E. 3/4 (IT) II – Semester (Main) Examination, May / June 2015
Subject: Software Testing   (Elective – I)

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 a) Error b) Defect c) Text oracle
2 What are the long-term goals of software testing?
3 What is the need of white box testing?
4 What are the differences between alpha and beta testing?
5 What is testing defect backlog?
6 What is the need for minimizing test cases in a project?
7 What are the issues in testing a class?
8 Which UML diagrams are helpful in testing an OOS?
9 What is test script language?
10 What are the uses of JMeter?

PART – B (50 Marks)

11 a) Differentiate between effective and exhaustive software testing.
   b) What are the activities performed by a tester at the time of development of a project?
12 a) Explain state table-based testing.
   b) Explain equivalence class testing.
13 a) What are the major activities in V and V planning?
   b) Explain total statement coverage prioritization with example.
14 a) What is the role of invariants in class testing? Discuss with example.
   b) What are the quality aspects to be considered in web testing?
15 a) Explain the architecture, features and the use of silk test.
   b) How to test an application using winrunner?
16 a) Design a checklist for verification of a web-based software.
   b) Discuss the various types of software metrics.
17 a) What are the different parameters for evaluating regression test selection technique?
   b) Explain life cycle of a bug.

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FACULTY OF INFORMATICS
Subject: Digital Instrumentation and Control
(Elective-I)

Time : 3 Hours
Max. Marks: 75

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. What do you understand by signal conditioning? (2)
2. What is Ramp ADC? (3)
3. Write the characteristics of thermistors. (2)
4. What are load cells? (2)
5. What is Final control operations? (3)
6. List different control valve types. (3)
7. What is process lag? (2)
8. List out the field bus types (2)
9. Draw the diagram for process control system. (3)
10. Write any four optical sensors. (3)

PART – B (50 Marks)

11. (a) Describe the criteria for evaluation of performance of a process control loop. (b) Draw the typical first order time response curve and explain it.

12. (a) Explain the procedure for design of a temperature transducer. (b) Explain the operating principle of LVDT for displacement measurement.

13. Explain the following control system parameters in detail
   (i) Error          (ii) Cycling

14. (a) Describe derivative control mode. (b) Write the steps to develop a PLC program for a ladder diagram.

15. Describe Nozzle flapper system to implement proportional control using pneumatics.

16. Explain about photo emissive detectors.

17. Write short notes on the following:
   (a) Accuracy and Linearity
   (b) Control loop stability
   (c) Data logging

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