

FACULTY OF INFORMATICS

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)**

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|----|---|---|
| 1 | Define Persistence. | 2 |
| 2 | What is meant by affine transformations? | 2 |
| 3 | Explain perspective projection. | 3 |
| 4 | What is meant by Rasterization? | 2 |
| 5 | What is global illumination? | 3 |
| 6 | Write down the properties of Bазier curves. | 3 |
| 7 | Explain different tree structures. | 3 |
| 8 | What is meant by primitives and attributes? | 3 |
| 9 | Define 3 types of input modes. | 2 |
| 10 | What is picking? | 2 |

PART – B (50 Marks)

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|----|--|---|
| 11 | a) Explain different graphics architectures. | 5 |
| | b) How do you program two dimensional applications? | 5 |
| 12 | a) Describe three-dimensional primitives for geometric objects. | 5 |
| | b) Discuss interactive picture construction techniques. | 5 |
| 13 | a) Find the matrix transformation for scaling a triangle with vertices (6,4), (14, 4) and (10, 10) to half its size. | 5 |
| | b) Is concatenation of transformations commutative? Discuss in detail. | 5 |
| 14 | a) Explain phong lighting model. | 5 |
| | b) Give steps of a line clipping algorithm and trace it with an example. | 5 |
| 15 | a) Explain cubic B-splines. | 5 |
| | b) Explain open scene graph. | 5 |
| 16 | a) Describe the Bresenham's line drawing algorithm for all quadrants. | 5 |
| | b) Explain hidden surface removal algorithm. | 5 |
| 17 | Write short notes on : | |
| | a) Anti-aliasing | 3 |
| | b) Properties of B-spline curves | 3 |
| | c) Weiler-Atherton polygon clipping | 4 |

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)**

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|----|--|---|
| 1 | Define a) Error b) Defect c) Text oracle | 2 |
| 2 | What are the long-term goals of software testing? | 2 |
| 3 | What is the need of white box testing? | 2 |
| 4 | What are the differences between alpha and beta testing? | 3 |
| 5 | What is testing defect backlog? | 2 |
| 6 | What is the need for minimizing test cases in a project? | 2 |
| 7 | What are the issues in testing a class? | 3 |
| 8 | Which UML diagrams are helpful in testing an OOS? | 3 |
| 9 | What is test script language? | 3 |
| 10 | What are the uses of JMeter? | 3 |

PART – B (50 Marks)

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|----|---|---|
| 11 | a) Differentiate between effective and exhaustive software testing. | 5 |
| | b) What are the activities performed by a tester at the time of development of a project? | 5 |
| 12 | a) Explain state table-based testing. | 5 |
| | b) Explain equivalence class testing. | 5 |
| 13 | a) What are the major activities in V and V planning? | 5 |
| | b) Explain total statement coverage prioritization with example. | 5 |
| 14 | a) What is the role of invariants in class testing? Discuss with example. | 5 |
| | b) What are the quality aspects to be considered in web testing? | 5 |
| 15 | a) Explain the architecture, features and the use of silk test. | 5 |
| | b) How to test an application using winrunner? | 5 |
| 16 | a) Design a checklist for verification of a web-based software. | 5 |
| | b) Discuss the various types of software metrics. | 5 |
| 17 | a) What are the different parameters for evaluating regression test selection technique? | 5 |
| | b) Explain life cycle of a bug. | 5 |

FACULTY OF INFORMATICS**B.E. 3/4 (I.T.) II-Semester (Main) Examination, May / June 2015****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
