Subject Code: G0406/R13

M. Tech – I Semester Regular/Supplementary Examinations, April, 2015

MECHATRONICS

(Common to AM&MSD, CAD/CAM and AMS)

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions

All questions carry EQUAL marks

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1. Mechatronics is the "Synergetic integration of MECHANICAL Engineering with Electronics and intelligent control algorithms in the design and manufacture of product processes", justify the statement.

2. a) What are the various Filters that you come across in Signal conditioning? Explain.
   b) Explain in detail the Inverting and Non-Inverting type amplifiers

3. a) Explain the working of an Electro-hydraulic actuating system with a neat sketch.
   b) Briefly explain the working of Timing belts and linear bearings.

4. a) How do you classify Control systems? Explain with block diagrams.
   b) With the help of a neat sketch explain the working of an Automatic Washing Machine.

5. a) Explain the principle of operation of a permanent magnet D.C. Motor, also differentiate between brushless and brushed Motors.
   b) How do you specify Stepper Motor? Explain the control of Stepper motors.

6. a) Differentiate between Microprocessor and Microcontroller.
   b) What is PLC? Briefly explain the use of timers and counters in PLCs with suitable examples.

7. a) What you mean by ADC? Explain the working of Flash ADC with neat sketch.
   b) Explain the working of R-2R Ladder DAC.

8. Write Brief note on:
   a) Optical Encoders.
   b) Data acquisition in Mechatronic systems

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Subject Code: G0505/R13

M. Tech – I Semester Regular/Supplementary Examinations, April, 2015

SOFTWARE ENGINEERING

(Computer Science & Engineering)

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions

All questions carry EQUAL marks

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1 a Explain Software Quality Attributes.

b How broad categories of Computer Software presenting continue challenges for Software Engineers?.

2 a Explain about the Common Principles of Agile Model.

b Explain the limitations of Waterfall Model and Iterative Model.

3 a Explain the Role of SRS in a Project and the value a good SRS brings to it.

b Explain the different activities in the process for producing the desired SRS.

4 a Explain a practical Risk Management Planning approach.

b Explain the Bottom-Up Cost Estimation Approach.

5 a What are the important uses of the Software Architecture descriptions?

b With Respective Architecture styles explain about Pipe and filter example.

6 Explain about White Box Testing with Suitable Example.

7 Explain any 12 rules that have been found to make code easier to read as well as avoid some of the errors.

8 Explain the following

a. Cyclomatic Complexity
b. Halstead's measure
c. Live Variables
d. Knot Count

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Subject Code: C5806/R09

M. Tech – I Semester Supply Examinations, April, 2015

OBJECT ORIENTED PROGRAMMING

(Common to CSE, CS and CST)

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions

All questions carry EQUAL marks

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1. a) What is the need of the OOP paradigm? Explain.
   b) Differentiate between method binding and overriding.

2. a) What is constructor? Explain with an example.
   b) Write a program to find whether the given no is prime or not.

3. a) Explain about the super and final keywords with examples.
   b) Write a program for calculating the area of the triangle, square and circle using polymorphism.

4. a) Discuss about CLASSPATH.
   b) What is package? How to access a class from a package?
   c) What are the advantages of interface?

5. a) Explain about the thread life cycle.
   b) Write a program for user defined exception.

6. Explain about different layout managers with examples.

7. a) Differentiate between applet and application
   b) Explain about the parameter passing in applets.
   c) Write short notes on Tables in Swings.

8. a) Discuss about java.net package.
   b) Write a client server program for passing messages between them.

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